The role of urban mobility in (re)shaping cities

ADDIS ABABA, ETHIOPIA
22 – 25 OCTOBER 2012
THE CHALLENGES OF URBAN MOBILITY IN DEVELOPING COUNTRIES

TRANSPORTATION AND THE DEVELOPMENT OF AFRICAN CITIES

ADDIS ABIABA, AN EMERGING MEGALOPOLIS

THE ROLE OF URBAN MOBILITY IN (RE)SHAPING CITIES: ISSUES OF THE CONFERENCE

PROGRAM OF THE CONFERENCE

SIDE EVENTS & TRAININGS

ABSTRACTS

SUBTHEME 1 – WHAT FORM OF GOVERNANCE IS REQUIRED FOR PROMOTING SUSTAINABLE MOBILITY?

SUBTHEME 2 – HOW DO YOU PLAN THE CITIES OF THE FUTURE? WHAT IS THE LINK BETWEEN TRANSPORT AND TOWN PLANNING? WHAT KIND OF TRANSPORT INFRASTRUCTURE CAN LEAD TO SUSTAINABLE CITIES

SUBTHEME 3 – THE CHOICE OF MODE OF TRANSPORT TO BE DEPLOYED AND THE MANAGEMENT OF INTER-MODALITY

SUBTHEME 4 – HOW DO WE DEAL WITH THE NEEDS OF PEOPLE IN TRANSPORT POLICY? HOW TO MAKE TRANSPORT SYSTEMS EQUITABLE?

INTERNATIONAL SCIENTIFIC COMMITTEE & PARTNERS
Welcome to Addis Ababa, the diplomatic city of Africa.

Our city is amidst its 125th founding anniversary celebrations, and there is an air of festivity in this vibrant metropolis, and we are honored to host CODATU XV International Conference during this grand event. We are proud to receive our esteemed guests for this international conference. I would also like to extend my great appreciation to CODATU International and the local staffs that have made this event happen.

In my capacity as the mayor of Addis Ababa, I wish all participants a pleasant stay and fruitful deliberations.

His Excellency Mr. Kuma Demeksa
Mayor of Addis Ababa
The challenges of urban mobility in developing countries

The world is more and more urban and mobility needs increase.
In 2012, 52% of the world population lives in cities. In 2030, due to the rapid growth of population in cities of developing countries, this proportion is expected to reach 66%. At this time, there will be 1.5 billion additional urban dwellers, 40% more than today.

Challenges in transportation and mobility are all the more important.
Economic growth in many emerging metropolises generates a strong augmentation in mobility demands. Increases in car ownership are a risky consequence of this process. If motorization fulfills the mobility needs of people who have access to car, it has an impact on the structure of the city. At local level, the distances increase, thus disadvantaging those who do not have access to private vehicles. In addition, congestion, air pollution and dangerous driving degrade city life quality. At global level, oil depletion and global warming are physical limitations preventing the reproduction of models of urban development favored during the 20th century.

Road safety has also emerged as a global issue.
Each year, nearly 1.3 million people die in a traffic accident. 90% of casualties from road deaths occur in developing countries where only less than half of the world’s vehicle fleet is registered\(^1\). In these countries, higher motorization rates have not been accompanied by sufficient improvements in road safety and urbanization strategies. If no effective action is taken immediately, it is estimated that traffic accident should provoked 2.4 millions deaths per year in 10 years and become the fifth leading cause of death worldwide. Thus, the United Nations launched last year the “Decade of Action for Road Safety 2011-2020”. The objective of this global campaign us to save at least five millions and prevent 50 million serious injuries by 2020.

Transport and urban developments face energy and climate challenges.
In a business-as-usual scenario, the world’s car fleet will triple by 2030 as the result of the development of lower- and middle-income countries\(^2\). Consequently, transport-related global CO\(_2\) emission

---


emissions (already one-third of overall CO₂ emissions) will grow by 57%. According to all international experts, there is no doubt that urban mobility policies must focus on low carbon mobility. The ecological footprint of a city is built on the long term. Therefore, it is particularly important that emerging cities take as soon as possible paths to sustainable development.

In this regard, BRT lines have already proven, in South America, Asia and now in Africa (in Lagos and Johannesburg), that they can help reduce congestion and air pollution. These experiences will be the subject of extended reports during the parallel session titled Mass Rapid Transit Systems: Lessons still to be learnt. Already, the Johannesburg full BRT system (Rea Vaya) showed that taxis and minibus owners and drivers, forced to withdraw from serving the corridor of the new lines, could be given employment by inviting them to become shareholders in the new system.

**Transportation and the development of African cities**

**The fragility of economic and social development in Africa.**
In 2000, the United Nations established eight Millennium Development Goals (MDGs) to be achieved by 2015. The indicators associated with these objectives can evaluate progress in each domain. Africa is now on the way to achieving some of the MDGs. However, the continent’s economies have proved vulnerable to the international context of recent years: rising food prices, soaring oil price and global financial crisis.

**Disparate dynamics of development on the continent.**
Overall, the results are very mixed, depending on the indicator used and the countries concerned³. In addition, progress observed often conceals unequal access to basic services (education, water, sanitation, etc.) in favor of the richest and people living in urban areas. Thus, the proportion of Africans who have access to drinking water increased from 56% to 66% between 1990 and 2010, but a townsman was still twice as likely to use an improved source of water that someone who lives in rural areas. These facts encourage a rural flight into peripheral urban areas that remains poorly served.

**Africa is urbanizing.**
The continent is one of the world’s least urbanized region, but one of those where urban growth is the fastest in the world. About 450 million Africans currently live in urban areas but the continent is expected to almost double its urban population in the next two decades. In 2025, nearly 70 cities will exceed one million inhabitants according to the forecasts of the United Nations⁴. This urban development dynamic necessarily generates new mobility needs.

⁴ World Urbanization Prospects 2009.
Currently, urban mobility in Africa is dominated by walking and informal public transport.

On the continent, and particularly in the Sub-Saharan region where half of the population live with less than US$ 1.25/day, walking remains the most used form of transport, even for long distances. Cycling is unequally common, depending on traffic conditions.

African public transport is dominated at 80% by informal (non corporate) transport.

This sector has developed to fill the gap of inadequate and increasingly expensive public transport. These systems, that generate employment, consist of non-motorized transport, mini-vans or taxis. While in some cases they are efficient, effective and meet real transport needs for many urban residents, they are yet to be regulated and organized, thus posing a threat to road safety and the environment.

Urban governance is a major challenge for African cities.

Since the 1990’s, all countries of the continent acknowledged the urbanization and adopted decentralization policies, materialized with more or less success through the transfers of skills in public services and urban management. When they have the competences, local authorities generally deplore budget shortfall. Transportation planning and urban transport policy implementation requires an authority with appropriate human and financial resources.
Addis Ababa, an emerging megalopolis

Relatively unaffected by drought and food shortages since the beginning of twenty-first century, Ethiopia is experiencing unprecedented economic growth. Between 2004 and 2010, the average annual growth rate is well over 10%. The government is currently using benefits of the economic growth to fund major projects such as the construction of the tallest dam in Africa, intended to ensure the country’s energy security.

Addis Ababa, a city of roughly 4 million inhabitants, is home to more than a third of the total urban population of Ethiopia. Its development, driven by the robust economic health of the country, is thus particularly important for the country’s image.

In 2012, Addis Ababa celebrates its 125th birthday. Since the early 2000’s, the city experienced sustained population growth, increasing its population by 4% every year. According to UN-Habitat, ten million people will live in the city by 2025.

Addis Ababa’s transportation system is currently greatly changing.

Even if the individual motorized traffic is still rare in the city, its modal share (around 10%) increases steadily and urges the transport system modernization. Anbessa City Bus Service Enterprise, the state-owned public transport operator of the city, currently manages a fleet of 650 buses, but is waiting for a rapid delivery of 500 new ones. Anbessa currently carries 400,000 passengers per day on 104 routes. During peak hours, buses fail to meet the demand. Minibuses and taxis complete this offer.

In 2011, Addis Ababa City Administration has created the Bureau of Road and Transportation, a traffic management unit that organizes a more multimodal network. Several mass transit projects (a BRT network and a light rail transit) are currently under study in order to relieve traffic congestion and anticipate population growth. Their implementation, scheduled in 2015, coupled with the construction of a new Master Plan, will be a unique occasion to remodel the structure of a city that still concentrates public services and facilities in its main center.
The role of urban mobility in (re)shaping cities: issues of the conference

The CODATU XV conference will allow various players to share their points of view and reach a consensus regarding the different approaches to urban mobility. These may be distinguished firstly in terms of scope of application (whether they tackle global or local issues), and secondly in terms of time (whether they take into account a short or long-term outlook). In countries of the Global South, policies advanced at local and national level are often aimed at promoting mobility in the interest of development. But they may also go against global considerations, especially climate change. Furthermore, the rapid growth of cities and towns in the South creates numerous short-term difficulties, the solutions to which have a long-term impact on sustainable urban development. By confronting theory with practice, the conference will identify the policies and measures that can offer solutions for local, national and global levels of application.

The Rio+20 United Nations Conference on Sustainable Development that will be held in June 2012 should confirm the commitments of states to sustainable development. The CODATU XV Conference will echo this by dealing with the contribution of transport and mobility to green growth and better governance of sustainable development.

In addition, the conference aims to present analyses from cities and towns in Africa. Ten years after the CODATU X conference in Lomé (Togo) entitled "Urban mobility for all", participants will be invited to present the advances made and the challenges that have emerged since then, and the outlook for the next decade.

African cities and towns are growing fast, and are faced with an increasing share of private motorized transport which increases congestion and air pollution, and undermines road safety. More and more local authorities are developing alternatives and in particular mass public transport projects (big bus, BRT, LRT, underground etc.). Urban transport policies are therefore being developed.

But what are the institutional bases of urban mobility policies? How should policies that promote sustainable urban development be established?

The CODATU XV international scientific committee has therefore chosen as the theme of the conference "The role of urban mobility in (re)shaping cities".

Whether or not it is planned, urban transport affects the way in which cities grow. In developing cities, motorization of households with motorbikes or cars, and the development of public transport, meet the increased need for transport.

But they also contribute to an extension of urban areas and the renewal of town centers. These urban dynamics guide mode choices and require towns to address their long-term development. Both in the long term and in the short term, sustainable urban mobility policies must be able to meet the mobility requirements of economic players, ensure social equity and limit consumption of resources.
THE ROLE OF URBAN MOBILITY IN (RE)SHAPING CITIES

Sub-themes

1: What form of governance is required for promoting sustainable mobility?

Sustainable urban mobility policies must therefore be based on a suitable institutional framework that define which public bodies have authority for planning and organizing transport systems through appropriate legal, regulatory and organizational instruments. It should also be supported by a sustainable funding system.

Institutional contexts, planning capacity, and fiscal competencies differ greatly from one country to another. They determine the conditions for deploying a successful mobility policy. What institutional frameworks are suitable? How should administrative boundaries be defined? How should skills and resources be allocated? What factors block implementation? What are the methods of coordination between role players? What relations should there be between public and private partners?

2: How do you plan the cities of the future? What is the link between transport and town planning? What kind of transport infrastructure can lead to sustainable cities?

Transport planning defines the main thrust of the transport policy. It is based on an analysis of current and future transport needs and defines the projects that will make it possible to deal with key issues. Transport infrastructure capacities should be calibrated to expected needs. In a long term strategic planning view, polycentrism is promoted with high urban density along transport corridors and in subcentres.

How do you link transport planning with urban and human settlement planning? How do you coordinate all modes of transport during planning? What is the relationship with regional planning, or national planning for cities?

3: What types of transport should be deployed? How do you manage traffic?

Implementing mobility policies involves addressing issues related to developing public transport networks, controlling individual motorized vehicle traffic, and protecting the most vulnerable road users.

Regarding developing public transport, how can setting up mass transport systems make it possible to restructure existing networks? How can you coordinate existing paratransit with mass transport modes? How can you improve the performance of public transport networks? How should the operating costs of different mass transit systems influence investment choices?

Regarding road traffic management policies, and policies to control motorized vehicle traffic, what measures may make it possible to limit congestion and reduce the appeal of cars? What parking policies should be implemented? How do you organize urban logistics?
In addition, how do you ensure the safety of pedestrians and cyclists on roads? How do you make these non-motorized modes attractive, even for people with high incomes?

4: How do we deal with the needs of people in transport policy? How to make transport systems equitable?

CODATU XV aims to promote transport policies that address local economic development, job creation and a reduction in poverty. In designing and implementing transport policies, the involvement of players concerned (traditional carriers, users etc.) may give greater coherence to projects introduced by local authorities. In addition, some populations may be excluded from transport or urban development projects.

How can communities be involved upstream, through participation in the design of transport policies or projects? What is the economic and social impact of implementing mass transport projects (BRT, LRT, underground etc.) or urban projects? How can projects led by civil society extend the social aspects of sustainable development?
### Monday 22 October 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00-16:00</td>
<td><strong>FIELD VISIT</strong></td>
<td>Departure at the City Hall&lt;br&gt;Tour in Addis Ababa to discover the transportation system and urban development</td>
</tr>
<tr>
<td>16:00-19:00</td>
<td><strong>OFFICIAL OPENING</strong></td>
<td>Welcoming show&lt;br&gt;His Excellency Kuma DEMEKSA, Mayor of Addis Ababa&lt;br&gt;His Excellency Driba Kuma, Minister of transport ministry of Ethiopia&lt;br&gt;M. Jean Louis LEONARD, President of CODATU&lt;br&gt;Ms. Aisa Kirabo KACYIRA, deputy Executive Director of UN-Habitat&lt;br&gt;Ms. Michele VULLIEN, vice-president of Grand Lyon</td>
</tr>
<tr>
<td>19:00-21:00</td>
<td><strong>OFFICIAL DINNER</strong></td>
<td>Official dinner hosted by His Excellency the mayor of Addis Ababa</td>
</tr>
</tbody>
</table>
## Tuesday 23 October 2012

### 9:00-10:30 SCIENTIFIC OPENING (part I)

**Plenary session**

**Chairman:**
Nico McLACHLAN  
Director of ODA, President of the International Scientific Committee

- **RIO+20 and sustainable mobility**  
  Ramon J Cruz, SLoCaT Partnership
- **Environmentally Sustainable Transport Forum in Africa**  
  Roger GORHAM, World Bank
- **Conclusions of CODATU XIV and evolutions in urban transport in Latin America**  
  Esteban DIEZ*, Lead Transport Specialist at Interamerican Development Bank
- **Fazilka Ecocabs: first “dial a rickshaw” facility (India)**  
  Navdeep ASIJA, Graduates Welfare Association Fazilka

- **Coffee break**

### 10:30-11:00 SCIENTIFIC OPENING (part II)

**Plenary session**

- **The role of mobility to (re)shape cities**  
  Andre DZIKUS, Programme Manager, UN-Habitat
- **Expectations from cities decision makers in developing countries / Africa**  
  Jean-Pierre ELONG MBASSI, Secrétaire Général CGLU-A
- **La région métropolitaine de Dakar face aux défis du développement urbain**  
  Papa Ameth KEITA, Membre du Conseil régional de Dakar
- **Addis Ababa’s challenges: urban development and transport project**  
  Abate SETOTAW*, Deputy Mayor of Addis Ababa

* Presence unconfirmed

- **Lunch**

### 14:30-16:00 THEME 1: WHAT FORM OF GOVERNANCE IS REQUIRED FOR PROMOTING SUSTAINABLE MOBILITY?

**Plenary Session**

**Chairman:** Robert OLIVIER  
STM, Canada

**Moderator:** OP AGARWAL  
Urban Transport Advisor, The World Bank

- **The National Land Transport Act and law reform program in South Africa**  
  Khibi MABUSA MANANA*, South Africa Department of Transport, South Africa
- **Legal framework in Mexico and local government initiatives**  
  Bernardo HUERTA*, Secretary of Puebla State (Mexico) in charge of transport

- **Coffee break**
**16:30 - 18:30**

**Parallel Session 1A**

**Transport Governance: The Importance of Sound National Legislative and Policy Frameworks**

**Chairman:**
H E Getachew MENGESTE, State Minister of Transport (Addis Ababa, Ethiopia)

**Moderator:**
Jean-Pierre ELONG MBASSI*
General Secretary, United Cities and Local Governments - Africa – CGLUA- (Rabat, Morocco)

- Political determinants of sustainable transport in Latin American cities
  Carlos CADENA GAITAN, United Nations University (MERIT-Maastricht Graduate School of Governance), Netherlands

- The unobtainable integration of urban and transport planning: the dark face of decentralization in Ouagadougou
  Jean-Yves KIETTYETTA, Université Paris VIII - Saint Denis / LADYSS, France

- The importance of institutional issues for transport and urban planning: international experience to be applied in African cities
  José-Enrique PEREZ, Advanced Logistics Group (ALG) - Europraxis, Spain

- Enabling sustainable mobility in Indian cities through good governance: the way ahead
  Chhavi DHINGRA, EMBARQ India, India

- Evolution of urban public transport in Colombia
  Francisco GARCIA & Diego-Alexander ESCOBAR, National University of Colombia, Colombia

**16:30 - 18:30**

**Parallel Session 1B**

**Transport Authorities: Lessons from the Work – in Progress in Both Developed and Developing Cities**

**Chairman:**
Robert OLIVIER
Director of National and International Affairs at Société de Transport de Montreal (Montreal, Canada)

**Moderator:**
Assaffoua Joseph AKA
General Secretary of African Association of Public Transport (UATP) (Abidjan, Ivory Coast)

- The Lagos metropolitan area transport authority (LAMATA): genesis, design and future prospects
  George BANJO, The World Bank, US & Dayo MOBEREOLA, Lagos Metropolitan Area Transport Authority, Nigeria

- The Dakar Executive Council for Urban Transport (CETUD: learnings and prospects after fifteen years of activities
  Soudou DIAGNE, CETUD (Conseil Exécutif des Transports Urbains de Dakar), Senegal & Martin STUCKI, Transitec Ingénieurs-Conseils, Switzerland

- Local governance as an effective means of urban mobility, Nouakchott example
  Mohamed-Fouad BARRADA, Communauté Urbaine de Nouakchott, Mauritania

**16:30 - 18:30**

**Parallel Session 1C**

**Public Transport Finance: Established Models and Innovative Practices**

**Chairman:**
Kaushik DEB, Senior Vice President, Policy, Infrastructure Development and Finance Company (Mumbai, India)

**Moderator:**
Heither ALLEN, TRL (Crowthorne, UK)

- Accessing international financial support mechanisms for vehicle fuel economy
  Derek PALMER & Anne BINSTED, TRL Ltd, United Kingdom

- The use of carbon credit mechanisms to finance transportation improvements in the developing world
  Nels NELSON, Horn of Africa Regional Environment Centre and Network, Ethiopia & David NELSON, Jacobs Engineering Group, USA

- Financing urban transport by indirect beneficiaries contribution? Examples of good practices
  Xavier HOANG, Transport and environment expert, AFD (Paris, France)
### CITY DEVELOPMENT STRATEGIES

**Chairman:**
Jean-Claude ZIV, vice-president at CNAM (Paris, France)

**Moderator:**
Françoise METAYER-ZELDINE, Certu (Lyon, France)

- Developing Africa: toward self-sufficient, customer oriented urban transport
  - Wendell COX, Demographia, St. Louis, USA
- Optimizing travels in emerging cities
  - Patrick CARLES, SARECO, France

### THE TRANSPORT AND ENVIRONMENT - SCIENCE TECHNOLOGY:

**Chairman:**
Amin KIGGUNDU, Makerere University (Kampala, Uganda)

**Moderators:**
Chozi LUNGU, University of Zambia (Lusaka, Zambia)
Haileselassie Sebehatu, Addis Ababa Environment Protection Authority (Addis Ababa, Ethiopia)

- Road Safety in Sub Sahara Africa
  - Jürgen PERSCHON, EURIST, Germany
- Transport flow management in Sub Sahara Africa
  - Marianne VANDERSCHUREN, UCT, South Africa
- Transport and equity in Sub Sahara Africa
  - Khibi MABUSA MANANA, South Africa Department of Transport, South Africa
- Air quality management in Sub Sahara Africa
  - Sara FERESU, IES/UZ, Zimbabwe
- Environmental noise management in Sub Sahara Africa
  - Dieter SCHWELA, UoY-SEI, York, Great-Britain
- Transport and climate change
  - Msafiri JACKSON, Ardhi University, Dar es Salaam, Tanzania

### COKTAIL

- African Union Lobby
Wednesday 24 October 2012

9:00 - 10:30
Plenary Session

**THEME 2 - HOW DO YOU PLAN THE CITIES OF THE FUTURE? WHAT IS THE LINK BETWEEN TRANSPORT AND TOWN PLANNING?**

**Chairman:**
Bernard Abeiku
ARTHUR from Centre for Urban Transportation (Accra, Ghana)

**Moderator:**
Andre DZIKUS, Urban Basic Services Branch Coordinator, UN – Habitat

- Curitiba: more than 40 years of urban development and transport planning
  Liana VALLICELLI, architect and José Alvaro TWARDOWSKI, engineer, IPUCC, Curitiba (Brazil)

- Promotion of public transport: lessons from Johannesburg
  Lisa SEFTEL, City of Joburg (South Africa)

- Coffee break

11:00 - 13:00
Parallel Session 2A

**TRANSPORT AND LAND USE PLANNING: THE CHALLENGE OF INTEGRATION**

**Chairman**
Patrice BERGER, International Affairs Director, Lyon Town Planning Agency (Lyon, France)

**Moderator:**
Romulo ORRICO FILHO, Professor at COPPE UFRJ (Rio de Janeiro, Brazil)

- Multipolarity as a model for the development of African cities: a response to the increasing congestion of their centers? The case of Addis Ababa, Bamako, Rabat, and Ouagadougou
  Patrice BERGER & Gauthier ROUHET, Agence d’Urbanisme pour le développement de l’agglomération lyonnaise, France

- How to reconcile city and planning?
  Jerome CHENAL, Development Planning Unit, University College London, UK & Isakha Diagana, Université de Nouakchott, Mauritania

- Integrated land use and transport planning in a rapidly growing city: case of Jeddah city, Saudi Arabia
  Mohammed ALIOUIFIE, Department of Urban and Regional Planning, Faculty of Environmental Design, King Abdulaziz University, Saudi Arabia & Mark ZUIDGEEST, University of Twente, Netherlands

- The role of public transport prioritization in (re)shaping cities: three international examples of great interest for African cities
  Sergi TIO, Advanced Logistics Group (ALG) – Europraxis, Spain

- Evaluation of development plans towards sustainable urban transportation: a case study of Pune metropolitan region
  Krishna RAO, Chetan KUMAR & Bhargav VENNIL, Indian Institute of Technology Bombay, India

- Implementation of mobility plan in Yaoundé : challenges, constraints and methods
  Arnaud-Phillipe NDZANA & Louis Freddy NTOUNDI TSALA, Communauté Urbaine de Yaoundé & Valérie ONGOLO ZOGO, Université de Yaoundé II-Sao, Cameroon
<table>
<thead>
<tr>
<th>Time</th>
<th>Session 2B: PUBLIC TRANSPORT NETWORK PLANNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 - 13:00</td>
<td><strong>Chairman:</strong> Fekadu HAILE, Addis Ababa City Road &amp; Transport Bureau (Addis Ababa, Ethiopia)</td>
</tr>
<tr>
<td></td>
<td><strong>Moderator:</strong> Xavier HOANG, Transport and environment expert, AFD (Paris, France)</td>
</tr>
<tr>
<td></td>
<td>Uganda’s urban development: a scrutiny of transport planning and mobility in towns and cities</td>
</tr>
<tr>
<td></td>
<td>Sam-Stewart MUTABAZI, Uganda Road Sector Support Initiative (URSSI), Uganda</td>
</tr>
<tr>
<td></td>
<td>Mapping informal public transport terminals: the case of tricycles of Brgy. 176, Bagong Silang, Caloocan City</td>
</tr>
<tr>
<td></td>
<td>Marie-Danielle GUILLEN, School of Government, Ateneo De Manila, Philippines</td>
</tr>
<tr>
<td></td>
<td>Government strategies for reshaping urban transport networks and mobility in the developing world: the case of Port Harcourt, Nigeria</td>
</tr>
<tr>
<td></td>
<td>Basil POLLYN, St John Campus &amp; Nwakaego CHUKUIGWE, Port Harcourt, Nigeria</td>
</tr>
<tr>
<td></td>
<td>Sustainable urban mobility planning for coping challenges of urban transportation in the fast urbanizing Ethiopia: the case of Addis-Ababa</td>
</tr>
<tr>
<td></td>
<td>Wondimu ABEJE, Wondimu Consult, Consulting Planners, Ethiopia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 2C: URBAN MOBILITY: THE LINK WITH URBAN RENEWAL AND URBAN DESIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 - 13:00</td>
<td><strong>Chairman:</strong> Andre DZIKUS, Programme Manager, UN – Habitat</td>
</tr>
<tr>
<td></td>
<td><strong>Moderator:</strong> Matewos ASFAW, GM, Addis Ababa Master Plan Revision Project</td>
</tr>
<tr>
<td></td>
<td>Creating liveable Cities - The Role of Urban Transport</td>
</tr>
<tr>
<td></td>
<td>Manfred BREIPTHAUPT, Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany</td>
</tr>
<tr>
<td></td>
<td>Urban renewal and mobility: the Batata square project</td>
</tr>
<tr>
<td></td>
<td>Jaime WAISMAN &amp; Tito FRASCINO, Sao Paulo, Brazil</td>
</tr>
<tr>
<td></td>
<td>How should cities plan for sustainable mobility? - A framework based on evaluation of city mobility plans</td>
</tr>
<tr>
<td></td>
<td>Sanjivi SUNDAAR &amp; Akshima TEJAS GHATE, The Energy and Ressources Institute (TERI), India</td>
</tr>
<tr>
<td></td>
<td>Line 4 of Mexico’s BRT (Metrobús), technology and urban action: an example of the city renewal and creation of public spaces</td>
</tr>
<tr>
<td></td>
<td>Fernando LOZADA, ISLAS, Mexico</td>
</tr>
<tr>
<td></td>
<td>Urban planning, travels and ICT : What scenarios for the development of Marseille?</td>
</tr>
<tr>
<td></td>
<td>Jean-Claude GONDARD &amp; Jean-Charles LARDIC, Ville de Marseille, France</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 3D: INTEGRATION OF PARA-TRANSIT SECTOR IN MOBILITY STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 - 13:00</td>
<td><strong>Chairman:</strong> Kasahun HAILE MARIAM, Director General of Federal Transport Authority (Ethiopia)</td>
</tr>
<tr>
<td></td>
<td><strong>Moderator:</strong> Xavier GODARD, Expert on urban transport, (Aix en Provence, France)</td>
</tr>
<tr>
<td></td>
<td>Respectfully formalizing the informal: holistic strategies for integrated and integrative urban mobility system for cities of the global south</td>
</tr>
<tr>
<td></td>
<td>Arnd BÄTZNER, University of St.Gallen, Switzerland</td>
</tr>
<tr>
<td></td>
<td>« Taxis clandos » in Dakar : What future for UrbanTransport on Demand ?</td>
</tr>
<tr>
<td></td>
<td>Adrien LAMMOGLIA &amp; Didier JOSSELIN, Université d’Avignon, France ; Roger Faye, Ecole Supérieure Polytechnique de Dakar, Sénégal</td>
</tr>
<tr>
<td></td>
<td>Paratransit in Togo : adaptation imposed by the competition of motorcycle taxis in secondary cities Assogba GUEZERE, Université de Kara, Togo</td>
</tr>
<tr>
<td></td>
<td>An evaluation of policy approaches to upgrading and integrating para-transit in African urban public transport systems: results of a Delphi survey</td>
</tr>
<tr>
<td></td>
<td>Roger BEHRENS, Centre for Transport Studies, University of Cape Town, South Africa; Dorothy MCCORMICK, Institute for Development Studies, University of Nairobi, Kenya &amp; David MFINANGA, University of Dar Es Salaam, Tanzania</td>
</tr>
</tbody>
</table>

- Lunch -
<table>
<thead>
<tr>
<th>14:30 - 16:00 Plenary Session</th>
<th>THEME 3: WHAT TYPES OF TRANSPORT SHOULD BE DEPLOYED? HOW DO YOU MANAGE TRAFFIC?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chairman:</strong> Roger BEHRENS, University of Cape Town, South Africa</td>
<td></td>
</tr>
<tr>
<td><strong>Moderator:</strong> Manfred BREITHAUP, German Agency for International Cooperation</td>
<td></td>
</tr>
<tr>
<td>Regulation of urban transport in the Greater Abidjan: achievements and prospects</td>
<td></td>
</tr>
<tr>
<td>Yao Godefroy KONAN, AGETU (Abidjan, Ivory Coast)</td>
<td></td>
</tr>
<tr>
<td>Gross Contract in public transport and network integration</td>
<td></td>
</tr>
<tr>
<td>Bernard RIVALTA, President of Sytral (Lyon, France)</td>
<td></td>
</tr>
<tr>
<td>- Coffee break –</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16:30 - 18:30 Parallel session 3A</th>
<th>MASS RAPID TRANSIT SYSTEMS: LESSONS STILL TO BE LEARNT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chairman:</strong> Derek PALMER, Principal Consultant, Transport Research Laboratory (London, UK)</td>
<td></td>
</tr>
<tr>
<td><strong>Moderator:</strong> PAN Hai Xiao, Professor at Tongji University (Shanghai, China)</td>
<td></td>
</tr>
<tr>
<td>Urban mobility: issues and challenges of BRT in Lagos metropolis</td>
<td></td>
</tr>
<tr>
<td>Bolaji OLASENI &amp; Kola Oladele OLAYIWOLA, Yaba College of Technology, Nigeria; &amp; Oladipupo Fashina FASHINA, University of KwaZulu-Natal, Durban, South Africa</td>
<td></td>
</tr>
<tr>
<td>Sustainable transportation in East Africa: the bus rapid transit evolution in Addis Ababa, Ethiopia</td>
<td></td>
</tr>
<tr>
<td>Yorgos VOUKAS &amp; Derek PALMER, Transport Research Laboratory, UK</td>
<td></td>
</tr>
<tr>
<td>The interface between trunk and feeder services: lessons from South American cities</td>
<td></td>
</tr>
<tr>
<td>Pablo Salazar FERRO, Centre for Transport Studies, University of Cape Town, South Africa &amp; Juan Carlos MUNOZ, Pontificia Universidad Catolica de Chile, Chile</td>
<td></td>
</tr>
<tr>
<td>BRT in metro Dhaka: towards achieving a sustainable urban public transport system</td>
<td></td>
</tr>
<tr>
<td>Mazharul HOQUE, Hasib AHSAN, Sudip BARUA &amp; Dhrubo ALAM, Bangladesh University of Engineering and Technology (BUET), Bangladesh</td>
<td></td>
</tr>
<tr>
<td>The depot: the heart of the public transport network and an opportunity for urban development</td>
<td></td>
</tr>
<tr>
<td>Joachim BERGERHOFF, STIB, Belgium</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16:30 - 18:30 Parallel session 3B</th>
<th>TRANSPORT POLICY: DEALING WITH PRACTICAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chairman:</strong> Maurice NIATY-MOUAMBA, President of SITRASS (Addis Ababa, Ethiopia)</td>
<td></td>
</tr>
<tr>
<td><strong>Moderator:</strong> John INGLISH, General Manager of Rideuta, Chairman of Sustainable Development Commission of UITP (Salt Lake City, USA)</td>
<td></td>
</tr>
<tr>
<td>Policy instruments for increasing demand for public transport in India</td>
<td></td>
</tr>
<tr>
<td>Kaushik DEB, BP, India &amp; Massimo Filippini ETH Zürich, Switzerland</td>
<td></td>
</tr>
<tr>
<td>The impact of service type and route length on the operating cost per passenger and revenue of para-transit operations: results of a public transport cost model</td>
<td></td>
</tr>
<tr>
<td>Romano DEL MISTRO &amp; Roger BEHRENS, Centre for Transport Studies, University of Cape Town, South Africa</td>
<td></td>
</tr>
<tr>
<td>Urban vehicle restriction and the prospects for congestion pricing in Latin America</td>
<td></td>
</tr>
<tr>
<td>Charles RIVASPLATA, San Jose University / SFMTA, USA</td>
<td></td>
</tr>
<tr>
<td>Development of a localized sustainability score for screening urban transportation projects in developing countries: a case study of Accra, Ghana</td>
<td></td>
</tr>
<tr>
<td>Steven JONES &amp; Moses TEFE, University of Alabama, USA</td>
<td></td>
</tr>
</tbody>
</table>
16:30 - 18:30
Parallel session 3C

THE PLACE AND THE ROLE OF THE PARA-TRANSIT SECTOR IN MOBILITY STRATEGIES

Chairman:
Tibelese ASGEDOM, Deputy Bureau Head, Addis Ababa Road & Transport Bureau

Moderator:
Roger BEHRENS, University of Cape Town, Afrique du Sud

Transit system and self-organization: the example of Brazzaville, Congo
Frédéric AUDARD & Alexandre GRONDEAU, Université d’Aix-Marseille ; Joan PEREZ, Université d’Avignon et du pays du Vaucluse, France

A comparative study on the organization of para-transit in Rio de Janeiro and Dakar cities
Romulo ORRICO FILHO & Mame Khadidiatou THIAM, PET/COPPE/UFRJ ; Rhenato RIBEIRO, CEFET-MG and COPPE-UFRJ, Brazil

Integrating bus rapid transit (BRT) systems with rickshaws in developing cities: a case study on Dhaka city, Bangladesh
Shafiq-Ur RAHMAN, Paul TIMMS & Francis MONTGOMERY, University of Leeds, UK

Challenges and opportunities for the integration of commuter minibus operators into the Dar es Salaam city BRT system
David MFINANGA, University of Dar-es-Salaam, Tanzania

16:30 - 18:30
Parallel Session 2D

PUBLIC TRANSPORT SYSTEMS: DESIGN AND MODELS

Chairman:
Xavier CREPIN - Senior Adviser for relationship with Civil Society, French Ministry for Foreign Affairs

Moderator:
Dieter SCHWELA, Stockholm Environnemental Institute at the University of York (York, UK)

Implementation of a hierarchical structuring public transport network in an emerging city
Jérémy SIMON & Pierre MARX, EGIS Rail, France

Urban ropeway as part of sustainable urban transport networks in developing countries
Jürgen PERSCHON & Joachim BERGERHOFF, European Institute for Sustainable Transport, Germany

Addis Ababa LRT: challenges and opportunities
Getachew BETRU, General Manager of Ethiopian Railways Corporation, Addis Ababa, Ethiopia

Hybrid transportation modeling as a tool for developing a sustainable city-scenario
Rachel KATOSHEVSKI-CAVARI, Israeli Minister of Interior, Israël ; Theo ARENTZE, Technical University Eindhoven & Harry TIMMERMANS, Catholic University of Nijmegen, Netherlands

Using an area-wide analysis of contextual data to prioritize NMT infrastructure projects: case-study Cape Town, South Africa
Eddie BEUKES, Ero Engineers Ltd., & Marianne VANDERSCHUREN, University of Cape Town, South Africa

Evaluation of benefits generated by the future construction of transport infrastructures
Diego Alexander ESCOBAR & Francisco GARCIA, National University of Colombia, Colombia

18:30 - 19:15
COKTAIL
African Union Lobby
**Thursday 25 October 2012**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 - 10:30</td>
<td><strong>Plenary Session</strong>&lt;br&gt;<strong>THEME 4</strong>: HOW DO WE DEAL WITH THE NEEDS OF PEOPLE IN TRANSPORT POLICY?</td>
</tr>
<tr>
<td></td>
<td><strong>Chairman</strong>: Lourdes Diaz Olvera, LET-ENTPE (Lyon, France)</td>
</tr>
<tr>
<td></td>
<td><strong>Moderator</strong>: Chhavi Dhingra, EMBARQ India</td>
</tr>
<tr>
<td></td>
<td>Accessibility, planning and urban poverty: tools for equitable transport planning in developing cities&lt;br&gt;Jeff TURNER, Institute for Transport Studies, University of Leeds &amp; Mensah Adzigbey, Independent Consultant, UK</td>
</tr>
<tr>
<td></td>
<td>Road Safety Policy in developing countries: example of Ghana&lt;br&gt;M. Noble APPIAH*, Chief Executive of National Road Safety Commission (Ghana)</td>
</tr>
<tr>
<td></td>
<td>- Coffee break –</td>
</tr>
<tr>
<td>11:00-13:00</td>
<td><strong>Parallel Session 4A</strong>&lt;br&gt;IMPROVING ACCESS TO URBAN SOCIAL AND ECONOMIC OPPORTUNITIES</td>
</tr>
<tr>
<td></td>
<td><strong>Chairman</strong>: Prof Ali HUZAYYIN (Cairo, Egypt), Member of WCTRS Steering Committee and 1st Vice President of CODATU</td>
</tr>
<tr>
<td></td>
<td><strong>Moderator</strong>: Wendell COX, principal at Wendell Cox Consultancy – Demographia (Saint-Louis, USA)</td>
</tr>
<tr>
<td></td>
<td>Spatial distribution of intercity passengers’ terminals in Lagos: implications for transport policy&lt;br&gt;Kayode OYESIKU, Olabisi Onabanjo University &amp; Bolaji OLASEN, Yaba College of Technology, Nigeria</td>
</tr>
<tr>
<td></td>
<td>Accessibility to Lagos bus rapid transit (BRT lite) bus stops: an empirical study&lt;br&gt;Olaniran OLAWOLE, Obafemi Awolowo Universi, Nigeria</td>
</tr>
<tr>
<td></td>
<td>Urban mobility of residents of shantytowns and informal settlements in Belo Horizonte: what has been improved?&lt;br&gt;Renato RIBEIRO, CEFET-MG and COPPE-UFRJ, Marcos DE OLIVEIRA, BHTRANS and PUC-Minas &amp; Liliana HERMONT, TRANSBETIM, Brazil</td>
</tr>
<tr>
<td></td>
<td>Management of rickshaw in Dhaka city for ensuing desirable mobility and sustainability: the problems and options&lt;br&gt;S. M. SOHEL, Mahmud, Accident Research Institute (ARI), BUET &amp; Shamsul HOQUE, Department of Civil Engineering, BUET, Bangladesh</td>
</tr>
<tr>
<td>11:00-13:00</td>
<td><strong>Parallel session 4B</strong>&lt;br&gt;LEARNING TO CONSIDER THE SOCIO-ECONOMIC IMPLICATIONS OF MOBILITY BEHAVIOUR</td>
</tr>
<tr>
<td></td>
<td><strong>Chairman</strong>: Berhanu WOLDETENSAAE, Ethiopian Institute of Architecture, Building Construction and City Development of the Addis Ababa university (Addis Ababa, Ethiopia)</td>
</tr>
<tr>
<td></td>
<td><strong>Moderator</strong>: Charles RIVASPLATA, San Jose University / SFMTA, USA</td>
</tr>
<tr>
<td></td>
<td>Mobility and access to the city in Sub-Saharan Africa&lt;br&gt;Lourdes Diaz OLVERA, Didier PLAT, Pascal POCHET, ENTPE/LET, France</td>
</tr>
<tr>
<td></td>
<td>The dynamics and triggers of mode use changes: findings of a mobility biography study in Cape Town&lt;br&gt;Eric ADJEI &amp; Roger BEHRENS, University of Cape Town, South Africa</td>
</tr>
<tr>
<td></td>
<td>Influence of life course events on transitional stages of bicycle commuting in Dar-es-Salaam&lt;br&gt;Alphonse NKURUNZIZA, Martin VAN MAARSEVEEN, Mark ZUIDGEEST, Mark BRUSSEL, University of Twente, Netherlands ; Marianne VANDERSCHUREN, University of Cape Town, South Africa</td>
</tr>
<tr>
<td></td>
<td>Can the concept of environmental justice in transport be transferred to cities of the south? A case study of Nairobi&lt;br&gt;Thilo BEKER, Technische Universität Dresden, Germany</td>
</tr>
<tr>
<td></td>
<td>Choosing or bearing intermodality in Sub-Saharan African cities&lt;br&gt;Lourdes DIAV OLVERA, Didier PLAT, Pascal POCHET, ENTPE/LET, France &amp; Assogba GUEZERE, Université de Kara, Togo</td>
</tr>
</tbody>
</table>
### LOW-COST MOBILITY OPTIONS FOR ALL

**Chairman:** André Dzikus, Urban Basic Services Coordinator, UN-Habitat  

**Moderator:** Bernard Abeiku Arthur, Chief Executive Officer of Centre for Urban Transportation (Accra, Ghana)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable urban mobility through planning for walkability and cyclability in cities: case study – Bhopal</td>
<td>Mausmi HAJELA, School of Planning And Architecture, New Delhi &amp; Rohit SHARMA, Urban Mass Transit Company (UMTC), New Delhi, India</td>
</tr>
<tr>
<td>The importance and challenges of low cost mobility modes for sustained socioeconomic and environmental development in cities of Africa; comparative analysis of bicycle transport in Bahir Dar and Hawassa cities in Ethiopia</td>
<td>Belew DAGNEW, Ethiopian Civil Service University, Ethiopia</td>
</tr>
<tr>
<td>Curitiba’s &quot;citizenship streets&quot;</td>
<td>Liana Vallicelli, architect, and José Alvaro Twardowski, engineer, IPUC, Curitiba (Brazil)</td>
</tr>
<tr>
<td>Urban mobility solutions for the poor</td>
<td>Andre Dzikus, Kenya &amp; Bernard Gyergay, Germany, UN-Habitat</td>
</tr>
</tbody>
</table>

### ROAD SAFETY ISSUES

**Chairman:** Tawia Addo Ashong (World Bank)  

**Moderator:** Cessi Petchi GRSP (India and Malaysia)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road safety in Punjab state of India</td>
<td>Navdeep ASIJA,</td>
</tr>
<tr>
<td>Road Safety in Mass Transportation - the case of Brazil</td>
<td>Nicolae Duduta, Embarq (Brazil)</td>
</tr>
<tr>
<td>Integrated Corridor Approach for Urban Transport</td>
<td>OP Argarwal, (World Bank)</td>
</tr>
<tr>
<td>Private Sector and government partnership to improve road safety</td>
<td>Dr Frank Ding*, GRSP (China)</td>
</tr>
<tr>
<td>Developing City Master Plans to Improve Road Safety</td>
<td>Mr Hilton Vorster*, Tswane Municipality,( S. Africa)</td>
</tr>
<tr>
<td>Challenges of urban road safety in Ethiopia</td>
<td>... ERA*</td>
</tr>
</tbody>
</table>

- Lunch -

### 5A: ROLE OF LOCAL GOVERNMENT IN URBAN MOBILITY POLICY

**Chairman:** Jean Pierre Elong Mbassi, Secretary General of UCLG- Africa  

**Moderator:** ...

<table>
<thead>
<tr>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Nguyen Van Quoc, Vice President of MAUR (Ho Chi Minh City, Vietnam).</td>
</tr>
<tr>
<td>M. ... Lomé Municipality (Lomé, Togo)</td>
</tr>
<tr>
<td>M. Albert ODouar, Board member of SMTC Clermont-Ferrand (Clermont-Ferrand, France)</td>
</tr>
<tr>
<td>M. Mustafa Kahrmane, Consultant CoMun/GIZ.</td>
</tr>
<tr>
<td>M. ... GEF-Sustran project</td>
</tr>
</tbody>
</table>
### 14:30-16:00

**Round table hosted by WCTRS**

**Chairman:** Tony MAY, President of WCTRS  
**Moderator:** Yoshitsugu HAYASHI, Chair of the Scientific Committee of WCTR-13

- Prof Ali HUZAYYIN (Cairo, Egypt), Member of WCTRS Steering Committee and 1st Vice President of CODATU  
- Prof Romulo ORRICO FILHO (Rio de Janeiro, Brazil), Chair of WCTR-13 Rio  
- Lourdes DIAZ OLVERA (Lyon, France), Researcher, Laboratory of Transport Economics, ENTPE-CNRS-Université Lyon 2  
- Ms. Khibi MABUSA MANANA (Johannesburg, South Africa), Deputy Director General Department of Transport, South Africa

### 14:30-16:00 Round table

**5C - CONTRIBUTION OF PUBLIC AND PRIVATE COMPANIES TO PUBLIC TRANSPORT GROWTH**

**Chairman:** Assaffoua Joseph AKA General Secretary, African Association of Public Transport (UATP)

- Bedilu ASSEFA, Anbessa Bus service (Addis Abeba, Ethiopia)  
- Charles NGARAMBE, Director Kigali Bus Service (Kigali, Rwanda)

*...*

**SUSTAINABLE URBAN MOBILITY IN AFRICA : NEXT STEPS?**

**Chairman:** Jean-Louis LEONARD, President of CODATU

- Roger GORHAM, EST Forum Africa  
- Stephen KARINGI (UNECA), President of the SSATP Program Board  
- Tony MAY, President of WCTRS  
- Jean Pierre ELONG MBASSI, Secretary General of UCLG- Africa  
- Assaffoua Joseph AKA General Secretary, African Association of Public Transport (UATP)

### 16:30-18:00

- Coffee break

### 18:00-18:30

**CLOSING**

- Scientific Conclusion by Nico McLACHLAN, Director of ODA, President of the International Scientific Committee  
- Closing by His Excellency, the Mayor of Addis Ababa and Jean-Louis LEONARD, President of CODATU  
- Farewell cultural show  
- Cocktail event
SIDE EVENTS
&
TRAININGS
## SIDE EVENTS

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fri 19 and Sat 20</td>
<td>TRAINING SESSION FOR UNDERGRADUATE STUDENTS</td>
<td>CODATU Ethiopian civil service university</td>
</tr>
<tr>
<td></td>
<td>Transport and traffic engineering and planning</td>
<td>Lecturer: Ali Huzayyin, 1st Vice-president of CODATU</td>
</tr>
<tr>
<td>Sun 21</td>
<td>SESSION ON SUSTAINABLE MOBILITY IN « HUMAN DIALOGUES »</td>
<td>HUMAN DIALOGUES</td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>Promoting sustainable mobility: which place for human being?</td>
<td>A time to talk about urban mobility in the city with Addis Ababa dwellers</td>
</tr>
<tr>
<td></td>
<td>A time to talk about urban mobility in the city with Addis Ababa</td>
<td>Speakers: Feleke Haile Bachago and representatives of Addis Ababa Municipality</td>
</tr>
<tr>
<td>Mon 22</td>
<td>CODATU ANNUAL MEETING (for CODATU members only)</td>
<td>CODATU</td>
</tr>
<tr>
<td>10:30-12:30</td>
<td>CODATU Board will inform their members of previous and future</td>
<td>activities. (Hilton Hotel)</td>
</tr>
<tr>
<td>Fri 26</td>
<td>SUB-SAHARAN AFRICA TRANSPORT POLICY PROGRAM MEETING (by invitation</td>
<td>SSATP</td>
</tr>
<tr>
<td>9:00 -17:00</td>
<td>only)</td>
<td>To get a common understanding and consensus on the key policy issues for urban access and mobility in Sub-Saharan Africa, to provide strategic direction for development of action agenda for the SSATP DP3</td>
</tr>
</tbody>
</table>
## TRAININGS FOR PROFESSIONALS

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Title</th>
<th>Organization</th>
<th>Details</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fri 26, Sat 27, Mon 29</td>
<td>8:30-17:00</td>
<td>TRAINING PROGRAMME TO TRANSPORT PROFESSIONALS IN DEVELOPING COUNTRIES</td>
<td>CODATU</td>
<td>The course is designed to briefly but pointedly touch upon selected topics of concern to urban transport professionals, with particular reference to the developing countries context. More details on <a href="http://www.codatu.org">CODATU website</a></td>
<td><a href="mailto:contact@codatu.org">contact@codatu.org</a></td>
</tr>
<tr>
<td>Fri 26</td>
<td>8:30-17:00</td>
<td>TRAINING ON URBAN ROAD SAFETY</td>
<td>WORLD BANK</td>
<td>Urban Road Design, Urban Road Safety Assessments, Traffic Safety Guidelines for Bus Corridors</td>
<td><a href="mailto:contact@codatu.org">contact@codatu.org</a></td>
</tr>
<tr>
<td>Fri 26</td>
<td>8:30-17:00</td>
<td>TRAINING ON NON-MOTORISED TRANSPORT</td>
<td>GIZ</td>
<td>More details <a href="http://www.codatu.org">on the CODATU XV website</a></td>
<td><a href="mailto:contact@codatu.org">contact@codatu.org</a></td>
</tr>
</tbody>
</table>
Abstracts
CODATU XV
1 - WHAT FORM OF GOVERNANCE IS REQUIRED FOR PROMOTING SUSTAINABLE MOBILITY?

1A - TRANSPORT GOVERNANCE: THE IMPORTANCE OF SOUND NATIONAL LEGISLATIVE AND POLICY FRAMEWORKS

1B - TRANSPORT AUTHORITIES: LESSONS FROM THE WORK IN-PROGRESS IN BOTH DEVELOPED AND DEVELOPING CITIES

1C - PUBLIC TRANSPORT FINANCE: ESTABLISHED MODELS AND INNOVATIVE PRACTICES

1D - CITY DEVELOPMENT STRATEGIES
This paper provides an empirical description of the current state of transport sustainability for 16 major Latin American cities. The sustainability of these transport systems is measured via a set of indicators that capture its 3 vital dimensions: environmental, social, and economic. The ranking – a first of its kind for the region – is constructed by re-scaling thirty three indicators according to their specific contribution to sustainability. We assign weights to each of the re-scaled indicators according to the appropriate technical criteria, and aggregate these into three sub-indices corresponding with the three aforementioned dimensions. By maintaining these sub-indices separate, we aim at discerning the political trade-offs faced by policymakers in the South, when deciding on vital transport policies.

The paper draws theory from path dependency paradigms that affect urban transport systems. Thus, we propose that although conceptions of transport sustainability may be changing, many cities are stuck in path dependencies prompted by ancient car-centered planning policies. Therefore, in order to accomplish successful pragmatic changes in urban mobility, the paper argues for a better understanding on how our cities compare to other similar conurbations in terms of their sustainability outcomes, and how these outcomes connect to local political processes and governance.

The ‘Green Transport Index’ (GTI) we compose, serves as the base for examining the policies that are connected to the sustainability outcomes. Ultimately, the political determinants of these implemented policies will be mapped and contrasted across the studied cities. For this, key case studies will be chosen, so as to map the complexities of the political factors behind their transport sustainability outcomes. These cases will be chosen on the basis of their transport sustainability outcome (based in the GTI) and the broader theoretical context. A comparative case-study design will be used to (a) seek explanations for the variation in outcomes; (b) identify the causal mechanisms of these outcomes, and; (c) determine if the empirical facts meet the theoretical expectations.

Carlos CADENA GAITAN
United Nations University (MERIT-Maastricht Graduate School of Governance)
Maastricht, Netherlands
cadena@merit.unu.edu

Mr. Cadena is one of the founders and current leader of La Ciudad Verde (www.laciudadverde.org), a not-for-profit organization advocating for urban sustainability in Colombia. Simultaneously to this professional venture, Mr. Cadena is also in the process of writing his PhD thesis at the United Nations University (MERIT) in the Netherlands. There, he examines the conditions that determine transport sustainability outcomes in Latin America. Previous to his current posts, Mr. Cadena accumulated a breadth of experiences in different industries. He worked for a lobbying office in Washington D.C, collaborated with the International Cooperation Agency of Medellin, and did internships in Atlanta and New York. He holds a Master’s in Public Administration (MPA) from the Andrew Young School of Policy Studies (Georgia State University), and a B.A in Business Management from the McCamish School of Business (Reinhardt University).
La gouvernance urbaine en vigueur à Ouagadougou se fait sur fond de décentralisation depuis bientôt deux décennies. Un nouveau processus de décentralisation au Burkina Faso a en effet cours depuis 1991. Le Code général des collectivités locales, promulgué en 2004 et modifié en 2009 (en remplacement des Textes d’orientation de la décentralisation), établit une répartition des compétences entre l’État et ces collectivités et préconise que cette répartition soit réglée par les principes de subsidiarité, de progressivité et de proximité. Ainsi, l’Etat burkinabé reconnaît de façon explicite des domaines de compétences à travers lesquels les collectivités locales doivent «concourir au développement économique, social, sanitaire, éducatif, culturel et scientifique ainsi qu’à la protection, à la mise en valeur des ressources naturelles et à l’amélioration du cadre de vie ». Il leur sera donc transféré onze domaines de compétence relatifs entre autres à l’aménagement du territoire, la gestion du domaine foncier et l’urbanisme. A ce titre, les collectivités locales sont compétentes pour : avis sur le schéma d’aménagement urbain avant son approbation par l’Etat conformément aux procédures prévues par les textes en vigueur ; établissement et exécution de plans de lotissement, après approbation de l’autorité de tutelle conformément aux textes en vigueur ; attribution des parcelles et délivrance des titres d’occupation se rapportant à leur domaine foncier propre ou aux parties du domaine foncier national ayant fait l’objet d’un transfert de gestion à leur profit ; réglementation et police de la circulation ; création, réhabilitation et entretien des rues et des signalisations ; initiative et soutien en matière de transport en commun. Forte de ces prérogatives, la commune de Ouagadougou s’est lancée dans des opérations de lotissement massives dont le bilan se solde de nos jours par une dynamique spatiale interrompue et non maitrisée ainsi que le développement des quartiers précaires dits d’habitat spontané. Une des conséquences de cette situation est incontestablement la spéculacion foncière autour des noyaux urbains, pratiquée par les propriétaires terriens : les champs situés dans la périphérie ont été transformés progressivement en lots d’habitations précaires dans l’attente d’opérations d’aménagement ultérieures. De 13 000 hectares de superficie aménagée en 1999 (Compaoéré, 2003), Ouagadougou s’étendait en 2011 sur 36 000 hectares, les quartiers d’habitat spontané occupant près du tiers de cette superficie. La méthode progressive d’aménagement adoptée n’a pas été concluante en termes de réalisation de voiries et réseaux divers (VRD). La quantité de parcelles dégagées a favorisé un étalement urbain et engendré des besoins en VRD au-delà de la capacité des services compétents. La grande insuffisance de cette période est sans conteste le manque de maîtrise de la gestion urbaine avec des retombées négatives sur le transport urbain. S’agissant du transport urbain, la dynamique spatiale a logiquement engendré un allongement des distances à parcourir, dans un contexte de concentration des activités et des services dans les quartiers centraux. Le transport collectif formel, apparu en 1984 et assuré aujourd’hui par la société de transport en commun de Ouagadougou (Sotraco), peine à opérer un transfert modal en sa faveur. Le système de transport à Ouagadougou est caractérisé par une part importante des deux roues dans la répartition modale. L’usage de ces moyens de déplacement s’est développé en réponse aux besoins de la population avec des retombées négatives sur le transport urbain. S’agissant du transport urbain, la dynamique spatiale a logiquement engendré un allongement des distances à parcourir, dans un contexte de concentration des activités et des services dans les quartiers centraux. Le transport collectif formel, apparu en 1984 et assuré aujourd’hui par la société de transport en commun de Ouagadougou (Sotraco), peine à opérer un transfert modal en sa faveur. Le système de transport à Ouagadougou est caractérisé par une part importante des deux roues dans la répartition modale. L’usage de ces moyens de déplacement s’est développé en réponse aux besoins de la population (insuffisamment desservie par les sociétés de transport en commun successives), dans un contexte où le transport collectif artisanal, ne s’impose pas non plus comme moyen de transport. D’après les données d’une enquête-ménages réalisée à Ouagadougou en 2008, trois-quarts des déplacements se font avec des engins à deux roues (bicyclette, mobylette). Un déplacement sur deux se fait au moyen d’un deux-roues motorisé. La marche à pied qui correspond en majorité à des déplacements courts représente le dixième des déplacements. L’usage de l’automobile représente 11,51% des déplacements tandis que les transports collectifs (bus et taxis) n’en représentent que seulement 2,26%. Le trafic qui en résulte génère des externalités négatives telles que la congestion, les accidents de la voie publique et la pollution.

Au regard de ce tableau, on peut s’interroger sur l’existence d’une articulation entre transport et urbanisme depuis la mise en œuvre de la décentralisation. Ce processus, à travers les prérogatives accordées aux collectivités locales, n’a-t-il pas été un facteur aggravant des dysfonctionnements du système de transport ouagalais ?

Nous ambitionnons donc, après analyse du processus d’urbanisation et du système de transport en place, faire des recommandations pour une articulation entre la planification des transports et la planification urbaine.

Jean yves
KIETTYETTA
UNIVERSITE PARIS VIII - SAINT DENIS / LADYSS
DOCTORANT
kiettyetta@gmail.com

THE IMPORTANCE OF INSTITUTIONAL ISSUES FOR TRANSPORT AND URBAN PLANNING:
INTERNATIONAL EXPERIENCE TO BE APPLIED IN AFRICAN CITIES

Bus Rapid Transit projects (BRT) are being developed worldwide. ALG has got a broad international experience in this domain, mostly in Centre and South America, but also in Africa and Asia. This has allowed our consultants to analyse and compare very different cities, each one of them requiring specific solutions. An essential conclusion has been drawn from it: for a public transport project’s success an adequate institutional framework is as important as the technical design.

Bus Rapid Transit (BRT), which represents a much-lower investment than other mass transit systems, has led to a revolution in the field of urban mobility, improving the public transport conditions in many cities worldwide.

Specific design features and operational and technological solutions must be applied for each city’s BRT in order to address their local urban and transport needs. Technical considerations constitute an essential part of all this decision-making process, but they are just one part of the whole answer. Equally important are the institutional issues.

This situation can be compared to the hardware and software within a computer system. Political arrangements need to be taken into account, as they are the software that will complete and allow for the operation of the whole system to work.

The presentation will deal with, amongst others, essential matters in this domain such us: the definition of institutional roles and responsibilities, the coordination of planning organizations with focus beyond transportation, such as land use and public services, the coordination of duties and authority lines between organizations, defining the jurisdiction and/or ownership of the infrastructure and equipment, which are key elements that different successful cases worldwide have carefully considered.

During the presentation five interesting cases will be analysed: Bogota and Guatemala City in America; Lagos and Tshwane in Africa; and Dhaka in Asia. The fact that they are geographically spread provides a global vision of the institutional approach, which will lead to conclusions which will apply to other African cities as well.

The different models applied in these cities have been generally based on the separation of Policy, Regulatory and Operational functions. In all cases the responsibilities of the different institutions involved have been clearly defined, assigning all the duties without causing problematic overlaps.

Leaving the institutional issues unaddressed in the urban and transport planning in African cities might result in unresolved constraints and obstacles to project implementation, thus reducing the effectiveness of the envisaged solutions to improve the urban mobility.

José Enrique Pérez

Advanced Logistics Group (ALG) - Europraxis
Director of the International Area

Barcelona, Spain
jeperez@alg-global.com

Born in 1965, Ph. D. Civil Engineering, Master in Transportation, Urban Planner.
Languages: Spanish, Catalan, English. Knowledge in French.
His experience has focused on project management and specialized consultancy services for urban and interurban transport studies and freight logistics, in Spain as well as other European countries (Croatia, Cyprus, Czech Republic, France, Sweden, Turkey, United Kingdom), Latin America and the Caribbean (Argentina, Bahamas, Brazil, Chile, Colombia, Dominican Republic, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Uruguay, Venezuela), Asia (Armenia, Bangladesh, China, Georgia, India, Thailand) and Africa (Angola, Botswana, Ethiopia, Rwanda and South Africa). He has in depth experience in supervising logistics projects for coastal and port areas, participating in relevant projects such as the implementation of a logistics park (ZAL) in Algeciras (first 30,2 million ton Spanish port) and coordinating the research on the Alternatives and Traffic Projections on the Panama Canal in 1997.
Furthermore, he has overseen the design of operational processes and planning methodologies for mass public transport systems in some of the largest cities in the world, including Delhi, India (11.9 million), Bangkok, Thailand (8.5 million habitants), Lima, Peru (7.5 million), Santiago, Chile (5.5 million), Xi’an, China (3.2 million), Buenos Aires, Argentina (3 million), Caracas, Venezuela (3 million), Panama City, Panama (1.9 million), Barcelona, Spain (1.6 million), Montevideo, Uruguay (1.3 million) and Guatemala City, Guatemala (1.3 million), to name but a few.
Indian cities contribute to over 60% of the country’s GDP and are today facing the brunt of ever-increasing travel demand and personal motorization. Policies favoring the use of the personal automobile, urban sprawl and mismatch of transport demand with reliable, good quality and accessible public transport supply have resulted in problems like traffic congestion, public health, air pollution and inequity in travel. These are further exacerbated by the fact that institutionally, there is hardly any impetus at planning or managing urban transport at the city level.

In India interestingly, urban transport by itself is not the primary function/responsibility of most city governments unlike many western countries where transport services are mandatorily provided by law by the city authorities (like any other basic urban services-water, sanitation, housing and energy). Historically, there has been unclear division and high fragmentation of responsibility of urban transport functions between city, state (provincial) and national governments, and hence, its planning and provision is weak, inefficient and to a large extent ineffective. The regulatory environment governing urban transport in India is defined in multiple legislations and rules, and there is a lack of technical capacity to understand and plan for this sector in city governments.

As Indian cities continue to modernize and the government continues to provide stimulus packages to give urban mobility the necessary ‘facelift’ on the lines of cities like Singapore, Hong Kong, Bogota and London, the core of the problem very much remains with the forms of governance that Indian cities are choosing to manage and sustain these changes. There is now a considerable discussion at the policy level to revamp the present institutional structures and look at newer models especially ones supporting sustainable mobility, as well as augment human capacity. The Indian Government together with international development aid has already earmarked 10 million USD towards institutional and individual capacity building for urban transport over the coming years. However, capacity building can only be effective once the enabling institutional structure is in place.

How are some of the Indian cities responding to the national government’s recommendations of revamping their governance structures for urban transport provisioning? How successful have attempts at creating single integrated urban transport governing bodies in cities like Bangalore, Hyderabad, Delhi and Mumbai been? What module should the smaller cities adopt? What could Indian cities learn from cities like Singapore and London, which offer successful examples of integrated planning and governance of urban transport services? This paper will address some of these questions and make recommendations on developing institutional frameworks that enable sustainable mobility and transport choices in cities. It will comment on the kinds of policy, regulatory, monetary, legislative and capacity related reforms that would be necessary to bring about governance systems that help achieve sustainable mobility conditions.

Chhavi is a civil engineer with a Masters degree in Transportation Engineering. For the last seven years, she has been researching actively on sustainability issues related to urban transport, particularly in the context of cities in developing countries. Chhavi led TERI’s research on ‘Sustainable Cities’ which amongst other things looked at a host of quality and performance measurement issues in basic service provision (including transport services) in urban areas in India and mechanisms to institutionalize these at a city level. Her work in the past includes research projects on sustainable mobility in urban areas, review of local, regional and national level transport policies, analysing clean energy and transport access for the urban poor, doing a training needs assessment for personnel working in urban transport in Indian cities and suggesting framework for performance measurement of public transport services. In the last couple of years, Chhavi worked with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH’s Sustainable Urban Transport Project (SUTP) in the area of augmenting training and capacity building activities on urban transport for a variety of government and non-government stakeholders in developing cities. Chhavi recently joined EMBARQ India’s team as Project Manager, Capacity Building and continues to work on translating research into knowledge and capacity building products along with contributing to in-house research on sustainable urban mobility. She is also currently authoring a training cum learning module on institutional development for urban transport in India, for the Ministry of Urban Development.
Several years ago exist a large problem in the Urban Public Transport systems in most Latin American cities. Common problems are oversupply, poor planning, inefficient control systems, the inefficiency in the operation of equipment, failure times and frequencies, overlapping routes, unintegration service, cost overruns, gaps infrastructure, to name just some of the most common topics.

Some countries are undertaking actions to reduce this problem. Usually by implementing new policies and strategies. Countries like Colombia have had some good experiences with the implementation of mass transit systems. Massive systems are applied to cities with populations greater than 600,000 inhabitants. For medium-sized cities (300,000 to 600,000 inhabitants) are being developed so-called Strategic Public Transport Systems. They propose the transformation of current Urban Public Transport to a structure which integrates the different transport modes.

There is also a strong global trend towards concentration of population in urban areas. In the world more than 50% of the population lives in urban areas and for Latin America, the value is greater than 75%. This involves the continued growth of cities. It is common to find populations exceeding 10 million. In particular, in some intermediate cities population doubled in the last 25 years.

Colombia is a country located in the north region of South America. It has a population of about 44 million people. It is divided into 32 departments that have four cities of more than 1.5 million people. It also has about 10 metropolitan areas with more than 600 thousand inhabitants. Also has 10 cities with populations between 300 thousand and 600 thousand inhabitants who have similar problems. In all cases each solution should be different.

This document describes the efforts in Colombia to implement the Strategic Public Transport System. Also, the document is a tour of the most significant events of the past 20 years. We present the results obtained by projects already in operation.

Francisco GARCIA
NATIONAL UNIVERSITY OF COLOMBIA
MANIZALES, Colombia
Coordinator of specialization in Roads and Transport
fjgarciaor@unal.edu.co

Civil Engineer and Doctor of Engineering of National University of Colombia, where he is professor and researcher since 1992. Currently is the Coordinator of specialization in Roads and Transport and is part of the Academic Working Group on Roads, Transport and Geotechnics. He has participated in several outreach projects developed by the National University of Colombia. Professor at various universities, and speaker at various events both nationally and internationally.

DIEGO_ALEJANDERO ESCOBAR
NATIONAL UNIVERSITY OF COLOMBIA
VILLAMARIA, Colombia
DIRECTOR OF CIVIL ENGINEERING PROGRAM
daescobarga@unal.edu.co

Civil Engineer and Doctor of Land Management and Transport Infrastructure (2008, UPC- Spain). He has been professor and researcher at the National University of Colombia since 2001, currently is the Director of the Academic Working Group on Roads, Transport and Geotechnics. He has spoken at various events both nationally and internationally and has served as a consultant and advisor on issues related to transport infrastructure.
THE LAGOS METROPOLITAN AREA TRANSPORT AUTHORITY (LAMATA): GENESIS, DESIGN AND PERFORMANCE AND FUTURE PROSPECTS.

LAMATA was conceived in the mid-1990 as one of the key instruments for addressing the transport problems of Metropolitan Lagos. It is one of the few such agencies in the developing world with a mandate to address metropolitan wide transport issues. Many expert observers have often held it up as a ‘good practice’ with regard to its organizational design and performance given its context and the challenges it face. It is now ten years since LAMATA’s establishment and its commencement of operation. The objective in this paper is to review its performance against its initial objective(s) with a view to identifying key successes and failures and to examine options for consolidating and further deepening its organizational framework and improving its performance. The review is detailed in nature.

The paper begins with a brief presentation of the transport situation in Metropolitan Lagos that gave rise to the creation of LAMATA. It then goes on to discuss key elements of LAMATA’s organizational design – their purpose and intent - and how they have facilitated or constrained its performance. The paper also contains an analysis of the emerging urban development trends in Metropolitan Lagos and the impact of these on the characteristics of transport demand and supply. These trends are contrasted with the situation before the creation of LAMATA and then used to identify the emerging challenges for LAMATA as a metropolitan transport agency. The paper is concluded with an exploration of the needed policy and institutional reforms within the transport sector and the organizational changes that LAMATA may need to make if these challenges are to be met in a sustainable manner. It is hoped that the paper will provide valuable lessons to other cities wishing to embark upon the reform of their institutional arrangements for the delivery of urban transport services at the metropolitan scale.

George Banjo is a Senior Transport Specialist with the World Bank during which he has been involved in Bank operational and policy advisory activities in about 20 countries in Africa, Europe and Central Asia. Prior to joining the World Bank he was in academia at the University of Lagos, Nigeria, advisor to the Government of Nigeria on transport and in private consultancy. In the latter capacity, he was responsible for conceiving the idea of LAMATA and designing its detailed institutional framework and, upon joining the Bank, involved in its establishment. He has at various times being a member of the Scientific Committee of the World Conference on Transport Research Society and of CODATU and is presently a Board member of the African Center for Excellence in Public Transport at the University of Cape Town. He has a doctorate in Transport Studies from the University of Liverpool.

Dayo Mobereola is the Managing Director of LAMATA since its inception, responsible for directing its institutional establishment and the implementation of its investment program which has grown from US$13.6m per year in 2004 to over US$200m in 2010. Prior to joining LAMATA, he was a Senior Transport Analyst at British Petroleum PLC UK. He has a doctorate in Transport Economics from the University of Wales, Cardiff, England.
THE DAKAR EXECUTIVE COUNCIL FOR URBAN TRANSPORT (CETUD): LEARNINGS AND PROSPECTS AFTER FIFTEEN YEARS OF ACTIVITIES (in french)


Parmi les principales missions assumées par le CETUD à l’échelle de la région du Grand Dakar (env. 3 millions d’habitants) : la planification et la coordination des différents modes de transport, la détermination des lignes et des modalités d’exploitation, le contrôle, l’appui à la réalisation d’investissements pour l’amélioration des circulations, etc.

Depuis sa création, le CETUD a enregistré plusieurs succès notoires, notamment en ce qui concerne l’organisation des transporteurs et le renouvellement du matériel roulant. Les différentes démarches et projets engagés ont également révélé certaines difficultés inhérentes à l’action d’une AOTU dans le contexte d’une grande métropole africaine (forte croissance démographique, étalement urbain, réalité socio-économique, complexité institutionnelle, processus de décentralisation, etc.).

Quinze ans après sa création, le CETUD a entrepris de dresser un bilan de son activité et engagé, à l’aube de nouveaux grands projets, une réflexion quant aux voies et moyens qui doivent permettre de renforcer l’efficacité de la gouvernance de la mobilité dans l’agglomération dakaroise.

A cette fin, le CETUD a notamment initié un dialogue ouvert avec ses principaux partenaires (ministères, collectivités territoriales, agences, bailleurs, opérateurs, etc.) et différents ajustements sont aujourd’hui en discussion. Les améliorations envisagées concernent par exemple le portage politique des décisions stratégiques, l’intégration plus forte des différents modes de transport (publics et privés), la coordination renforcée entre les nombreux intervenants ou les modes de financement du transport.

L’expérience accumulée sur une durée significative permet, d’une part, de mesurer le chemin parcouru et, d’autre part, d’aborder les évolutions souhaitées avec un certain pragmatisme, dans une logique d’évolution progressive. Les enseignements tirés aujourd’hui par le CETUD intéresseront sans doute les représentants d’autres grandes villes et les auteurs espèrent qu’ils permettront des échanges fructueux.

Soudou DIAGNE
CETUD - Conseil Exécutif des Transports Urbains de Dakar
Dakar, Senegal
sdiagnes@yahoo.fr

M. Soudou DIAGNE est Directeur Général du CETUD (Conseil Exécutif des Transports Urbains de Dakar).

Martin STUCKI
TRANSITEC Ingénieurs-Conseils
Lausanne, Switzerland
martin.stucki@transitec.net

M. Martin STUCKI est directeur des activités internationales du cabinet Transitec. Il est co-responsable de l’audit engagé par le CETUD.
La question de la mobilité urbaine de Nouakchott se pose avec acuité, car une ville conçue pour abriter 50 000 habitants durant les années 60 se trouve en l’an 2012 avec une population qui avoisine 1 million d’individus.


Nouakchott se situe sur la limite extrême d’une surface fortement inclinée par rapport au niveau de la mer dont le littoral fait l’objet d’une dégradation pouvant causer éventuellement des risques incontrôlables d’inondations.

Par ailleurs, les modes des transports et de déplacements additionnels sont peu efficaces. S’agissant du Transport en commun, le plus important est le taxi collectif emportant six personnes suivant des axes en majorité (tout droit); les bus de faible capacité (15 à 20 places), sans arrêts précis et empruntant certains axes goudronnés les mieux fréquentés donc plus rentables. Concernant les équipements de transports, ils sont défaillants : absence des infrastructures de transports (gares, garages, arrêts, lignes de bus, etc.). Et à cela s’ajoute un grand déficit de voiries, d’aires de stationnement, de trottoirs et d’espaces publics; vétusté des moyens de transport utilisés (bus et taxis amortis…);

En outre, le bilan de la mise en œuvre du Plan de développement de la ville est faible. Cela est dû essentiellement aux faits suivants: manque de volonté politique des décideurs et le peu d’intérêt qu’ils accordent aux études sur la mobilité urbaine ; minime coordination des efforts des différents acteurs intervenants; la quasi inexistence de l’autonomie des collectivités locales ; insuffisances des moyens financiers, humains et techniques permettant à la Communauté Urbaine de Nouakchott de réagir face aux problèmes posés.

En effet, la présente communication met l’accent sur les aspects de la gouvernance locale comme étant une solution à la mobilité urbaine. Elle s’inscrit dans le cadre d’une analyse critique du processus de la décentralisation et ses répercussions sur le programme de développement urbain de Nouakchott.

Mohamed fouad BARRADA
Communauté Urbaine de Nouakchott
Mauritania
m_barrada@yahoo.fr


Compétences académiques et professionnelles : Coopération décentralisée et développement local, communication, gestion des projets, pilotage décisionnel des organisations, le management des organisations, l’ économie générale, finances des structures organisées, statistiques, mathématique financière, etc.
In developing, and emerging, economies, there can be the perception that vehicle fuel economy should not be a priority owing to their relatively low total fuel consumption. However, the per capita consumption of fossil fuels in the transport sectors of non-OECD countries is rapidly increasing. Energy use in the transport sector is estimated to increase by nearly 50% by 2030 and 80% by 2050, but could increase by up to 130% by 2050. Around 95% of energy in the transport sector is derived from oil and the demand for carbon-based fuels in the transport sector is projected to grow more rapidly than in any other sector over the next 25 years, accounting for 97% of the world’s primary oil use between 2007 and 2030.

It is expected that the total fuel consumption of the international vehicle fleet will increase by more than 5% per year until 2030; more than half of the increasing vehicle fuel consumption will occur within developing countries. The global vehicle fleet is predicted to triple by 2050 with over 80% of the growth occurring in the developing world. It is therefore necessary that any strategies to reduce dependence on fossil fuel target vehicle fuel economy in developing countries. There is evidence to suggest that demand for vehicle fuel economy measures is increasing, but that it can be challenging for developing countries to obtain finance to support these measures. TRL therefore developed a guidance document that informs national governments in developing, and emerging, economies about some of the current sources of international funding that are available that could be used to support efforts to improve vehicle fuel efficiency. This paper would introduce this guidance document.

The guidance provides a practical and concise ‘reference of first resort’ for all those engaged in securing funding to promote vehicle fuel economy. In doing so it aims to increase awareness, and understanding, of the support that is available. The paper will highlight the rationale for improving vehicle fuel economy, which includes: reducing dependency on expensive (generally imported) oil; improving economic performance; safeguarding quality of life; safeguarding the natural environment.

It will also describe the ways in which vehicle fuel economy improvements can be financed, highlighting potential funding sources for measures including: maintenance and inspection policies; driver behaviour; fuel quality; emissions control technologies; advanced vehicles and fuel; future vehicles and fuel.

Derek PALMER
TRL Ltd
Head of Sustainable Transport Planning
Wokingham, United Kingdom
dpalmer@trl.co.uk

Derek is a qualified transport planner and economist with nearly 40 years experience. He has a thorough appreciation of the public policy issues confronting both local and national government. Having an holistic understanding of transport means that he is able to view issues within the wider context. As a consultant he has led a wide variety of transport projects; clients have included both central and local governments in the UK and overseas. He has appeared as an expert witness before Select Committees of both UK Houses of Parliament. In addition to having a very good knowledge of the technical aspects of sustainable transport, a particular strength is his understanding of the political environment in which decisions are undertaken and the ability to develop appropriate solutions and strategies. Derek is a member of the Technical Committee of CODATU and is currently working on projects in Ethiopia, Nigeria and Tanzania.

Anne Binsted
TRL Ltd
Senior Consultant
Wokingham, United Kingdom
abinsted@trl.co.uk

Anne works as a senior consultant in the field of transport and environmental policy although during her time at TRL she has worked on a broad range of research and consultancy projects relating to all forms of sustainable transport. Anne has conducted research and managed contracts for a wide range of public and private sector clients on all levels from the local to the international. She is primarily involved in projects relating to transport and climate change and is also working on numerous projects exploring the financing of sustainable urban transport measures. Anne holds a BSc in Human Geography (specialising in transport), and is currently working towards an MSc in transport policy. Between graduating and joining TRL she developed her knowledge of transport planning at the Steer Davies Gleave consultancy and undertook an intensive course on Transport Planning at ITS Leeds.
The United Nations’ Convention on Climate Change sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases.

The Convention’s Clean Development Mechanism (CDM) finances emission-reduction projects by allowing developing countries to earn saleable certified emission reduction credits that can be used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol. As a policy to promote global sustainability the program aims to stimulate sustainable development and emission reductions, while giving industrialized nations some flexibility in how they meet their emission reduction limitation targets.

After 10 years of operation the program lists 4,210 active projects and claims 750 million tonnes of annual carbon emission reductions (CERs) making it the world’s largest generator of carbon offset credits. A wide range of programs qualify under more than 150 methodologies approved to quantify the carbon reductions. Of these 4,210 projects, 11 projects are identified in the transport sector generating 1.1 million tonnes of annual carbon credits, an estimated 11 million euros of funding for the project development.

This paper provides some background on the CDM program then reviews the 11 accredited transport projects that include Bus Rapid Transit investments, Metros, freight initiatives and alternative fuels projects with a focus on the quantified CER and mobility impacts to report the range of outcomes that have been, and can be, financed with carbon credits. The authors then discuss factors that may be contributing to the relatively thin participation of the transport sector in CDM finance and suggest strategies to possibly enhance transport participation in the program.

Nels Nelson is an Urban Ecologist and CDM practitioner at the Horn of Africa Regional Environment Centre and Network in Addis Ababa. He was formerly a planner, researcher and instructor with a variety of firms and academic institutions in the Netherlands. He has also served as an Instructor at the Network for Democracy and Development in Thailand. Mr. Nelson studied Green Building Innovation at Technische Universiteit Delft, earned an MSc in Urban Environmental Technology and Management from Wageningen Universiteit en Researchcentrum, and a BA in Visual Culture and Economics from Bates College.

David Nelson is a Director of Transit Planning for Jacobs Engineering Group in Boston, Massachusetts and the Professeur Invit&eacute; des Transport et Logistique au Conservatoire National Des Arts et Métier in Paris France. He has 35 years’ experience in the planning and management of public transportation systems across the United States. He is the author of several dozen scholarly articles on public transport planning and administration. He holds an MCRP from Harvard University Graduate School of Design and a BA from Bates College.
Africa is the world’s fastest growing region and its projected growth is forecast to be even greater relative to the rest of the world in future decades. The overwhelming share of this growth will be in the urban areas.

At the same time, developing Africa’s poverty is more intense than elsewhere in the world. There is a need for substantial economic growth. Urban access is a crucial prerequisite to this. There has been considerable research on the urban transportation situation in developing Africa.

The largest urban areas in developing Africa (south of the Mediterranean tier and Magreb countries and excluding the middle income nations of southern Africa) would be briefly described both with current data and with projected data.

Much of the research looks with considerable disfavor on the generally informal nature of much of public transport in African urban areas. Often reforms are proposed that have failed in some locations in the past or that would require amounts of public expenditure that are unlikely to be committed by national or local governments or to be sustainably available from international sources. Moreover, for all of the difficulties with the existing systems, there are paradoxes, such as the fact that in some urban areas, people have chosen informal transport over formal transport and that for all of the customer service difficulties, the systems that exist today are effective enough that they are strongly patronized. Paradoxes such as these would be examined.

This paper would seek to synthesize the research on urban transport in these urban areas. The focus would be on the consumer preferences, needs, and indicators of consumer access. There would be emphasis on minimizing travel times, which economic research indicates is important to urban economic growth.

Based upon this research a research agenda would be proposed, including specific indicators of consumer benefit that could be used by policy makers seeking to improve urban transport. The indicators would be output related, rather than input related.

Finally, a series of propositions would be posited, suggesting factors that should drive urban transport system reform toward the objective of improving access for residents. Important considerations would be the imperative that any reforms improve access throughout the metropolitan area and that they be economically sustainable.
UNE PRÉVISION

Mon propos s'appuie sur la prévision suivante : la demande de déplacements dans les métropoles émergentes va continuer d'augmenter avec la croissance économique et l'exode rural. Et donc, en l'absence de mesures préventives, ces métropoles sont condamnées :

- D'une part à une congestion automobile chronique,
- D'autre part à des investissements très lourds en infrastructures routières et en parkings.

Face à cela on peut faire 3 constats :

- Au-delà d’un certain tarif pour stationner à l’arrivée, les usagers renoncent à l’usage de la voiture, et donc à circuler.
- A flux égal transporté, la voiture particulière est plusieurs fois moins performante que les transports en commun, en termes de coût d’investissement et de qualité d’environnement. L’économie financière peut atteindre le milliard de dollars par million d’habitants d’agglomération.
- Dans une métropole faiblement motorisée, la majorité de la population reste au stade du désir de possession d’une voiture mais n’a pas encore d’habitude d’usage. Cette population non motorisée sera insensible au niveau du tarif du stationnement.

UNE SOLUTION

A ce stade, une solution s’impose : dès aujourd’hui, avant l’explosion prévisible de la motorisation dans les villes émergentes, il s’agit de démarrer une tarification du stationnement dissuadant de l’usage de la voiture, et de développer en parallèle les transports en commun.

Cette solution a l’intérêt majeur d’être politiquement acceptable par la population. En effet :

- Tout d’abord, on ne touche pas du tout au désir de possession d’une voiture : son coût d’achat n’est pas modifié.
- Ensuite on peut communiquer très facilement sur les avantages de cette solution :
  - Les gains en investissement évoqués précédemment pourront être affectés à d’autres équipements plus porteurs : universités, hôpitaux,...
  - Ce sont seulement les possesseurs de voitures et donc les plus riches, qui ressentiront une contrainte.
  - Il y aura une création importante d’emplois,
  - Une meilleure qualité d’environnement sera obtenue.

En résumé : « Face à l’explosion à venir de la motorisation, l’optimisation économique et écologique des déplacements dans une métropole émergente, implique une tarification volontariste du stationnement dans les centralités, en accompagnement d’un développement des transports collectifs. On évite ainsi de gros gaspillages et des nuisances importantes »

Patrick CARLES  SARECO
Directeur Général - Fondateur  PARIS 10ème
pcarles@sareco.fr

FORMATION : Ingénieur Civil des Ponts et Chaussées 1967 - Maîtrise de Sciences Economiques 1968
ENSEIGNEMENT : Outre de nombreuses conférences, animation de cours de stationnement dans des organismes tels que : l’ENPC, Paris 12 (IUP), Ponts Formation Edition, ENTP, IEP Paris, CNFPT...
ETUDES ET EXPERTISES: Belém, Beyrouth, Bratislava, Dakar, Fès, Hangzhou, Kiev, Le Caire, Marrakech, Shanghai, Tunis, St-Petersbourg
VOYAGES D’ETUDES : Beijing, Hanoi, Hô Chi Minh-Ville, Rio de Janeiro, Singapour
2 - HOW DO YOU PLAN THE CITIES OF THE FUTURE? WHAT IS THE LINK BETWEEN TRANSPORT AND TOWN PLANNING? WHAT KIND OF TRANSPORT INFRASTRUCTURE CAN LEAD TO SUSTAINABLE CITIES?

2A - TRANSPORT AND LAND USE PLANNING

2B - PUBLIC TRANSPORT NETWORK PLANNING

2C - URBAN MOBILITY: THE LINK WITH URBAN RENEWAL AND URBAN DESIGN

2D - PUBLIC TRANSPORT SYSTEMS: DESIGN AND MODELS
Promotion of Public Transport Walking and Cycling: Lessons from Johannesburg

The paper will look at the promotion of public transport, walking and cycling in the City of Joburg. It will:

- Describe the current challenges facing the City including in respect of migration, congestion, ongoing need to address apartheid’s spatial form, high levels of carbon emissions, aging infrastructure, limited resources and responding to climate change
- Set out the key political imperatives and policies that shape city’s transport policy and projects
- Describe the key City transport initiatives including in respect of:
  - Promotion of and enablement of mass transit: Introduction of Bus Rapid Transit, restructuring of other bus and mini bus taxis services,
  - Enablement and promotion of walking and cycling including through engineering interventions and behavioural change
  - Responding to climate change: How we as a developing city are respond to challenges of climate change such as increased rainfall/dryness, need to reduce Green House Gas emissions
- Provide cross cutting observations and evaluative comments in respect of:
  - Systems and planning: How planning and systems development has to happen in an iterative way with delivery especially in face of limited resources
  - Being smart: How Joburg is using new technologies as well as the risks and unintended consequences of new technology
  - Institution building: Issues of intra City and intergovernmental relations and what has been the approach of the City
  - Behavioural change: The importance of integrating and balancing behavioural change interventions with engineering ones
  - Partnership: The critical role of partnerships within government and with stakeholders for sustainability.
- Conclude on some of the key imperatives for successful transport delivery in large cities, especially in the developing world.

Lisa Seftel
City of Joburg
Executive Director: Transport
Johannesburg, South Africa
lisas@joburg.org.za

Lisa Seftel is the Executive Director for Transportation in the City of Johannesburg, South Africa. There she is responsible for the planning, leadership and management including the introduction of the Rea Vaya Bus Rapid Transit System and the successful provision of spectator transport for the 2010 FIFA Soccer World Cup.

She previously was a municipal manager of a district municipality south of Joburg and before that held government posts in the Gauteng Department of Public Transport, Roads and Works, Office of the Premier in Gauteng Provincial Government and the national Department of Labour. Before that she was a political and trade union activist.

She has an Honour’s Degree in Industrial Sociology and a Diploma in Public and Development Management.
**LA MULTIPOLARITE (FAVORABLE AUX TRANSPORTS EN COMMUN) COMME MODELE DE DEVELOPPEMENT DES METROPOLES AFRICAINES : UNE REPONSE A LA CONGESTION CROISSANTE DE LEURS CENTRES? LES CAS D’ADDIS ABEBA, BAMAKO, RABAT, ET OUAGA DOUGOU**

(in french)

Le rythme de croissance démographique des villes d’Afrique (3 à 4% par an en moyenne) est aujourd’hui le plus élevé du monde et continuera de l’être dans le futur. Cette forte croissance de l’urbanisation des villes africaines s’accompagne de mutations profondes sur les plans spatiaux et sociétaux, et donne l’opportunité d’une organisation urbaine plus structurée. Le thème de la mobilité urbaine est devenu de plus en plus prégnant pour les responsables publics des villes africaines. A la forte croissance démographique se corrèle une augmentation conséquente du taux de motorisation, une multiplication des transports artisanaux peu régulés, et une faiblesses des transports publics de masse. Les centres villes, où se concentrent les fonctions métropolitaines et les emplois, souffrent de plus en plus de congestion.

Deux catégories d’actions peuvent être envisagées pour y faire face :

Une première catégorie concerne les politiques de transports urbains et de circulation : régulation du trafic, développement d’une offre efficace de transports en commun de masse, amélioration des infrastructures, exploitation et partage de la voirie…etc. Cet arsenal de mesures a fait ses preuves, mais comporte certaines limites.

Une deuxième catégorie, plus complexe à maîtriser, touche aux questions d’organisation urbaine. Les objectifs de ces actions sont de rapprocher les services, les commerces, et les emplois des habitants, pour ne pas multiplier les déplacements massifs vers les centres historiques. On peut ainsi envisager dans ce but la création ou le renforcement de centres secondaires, bien reliés au centre principal par des corridors de transports en commun.

Comment amorcer la création ou le renforcement de centres secondaires, en dehors des grandes opérations d’urbanisme de prestige ? Quelle localisation, quels équipements majeurs (marchés, gares routières…), quels processus de développement pour attirer de l’investissement public et privé?

L’agence d’urbanisme de Lyon propose une analyse comparée de ces questions sur 4 villes aux configurations différentes : Addis Abeba (Ethiopie), Bamako (Mali), Ouagadougou (Burkina Faso), et Rabat (Maroc), sur la base de son implication auprès de ces villes principalement dans un cadre de coopération décentralisée.

---

**Patrice BERGER**  
Agence d’urbanisme pour le développement de l’agglomération lyonnaise  
Directeur des activités internationales  
Lyon  
FRANCE  
p.berger@urbalyon.org

Graduated in architecture and « Sciences Po » in Paris, he has been working as a planner during 35 years, in cities in Africa, in Greater Lyon (manager of a big urban development project) in Lyon Town Planning Agency (notably as deputy general manager). For the last 12 years, he has been managing the international activities of the Lyon Town Planning Agency, composed of : benchmarking of best practices of urban policies of European cities ;-consultance on planning and transport issues for donors or public local authorities ;-capacity building , expertises , studies , in 15 big cities in Mediterranean , Africa , Asia , South America , in the frame of Lyon city to city cooperation ; in this scop , the last 12 years, he has been notably providing support on planning and transportation issues to Addis Abeba city government.

---

**Gautier Rouhet**  
Agence d’urbanisme pour le développement de l’agglomération lyonnaise  
Chargé d’études activités internationales  
Lyon  
FRANCE  
g.rouhet@urbalyon.org

Après une formation initiale d’ingénieur en Génie Civil et Urbanisme et une 1ère expérience aux Philippines dans le domaine de l’eau, j’ai piloté pendant plusieurs années des projets d’espaces publics et de renouvellement urbain pour le compte de la communauté urbaine de Lyon (Grand Lyon). J’ai en particulier travaillé sur le Grand Projet de Ville de Vaulx en Velin, commune du Grand Lyon où une transformation urbaine profonde des grands ensembles de logements sociaux construits dans les années 60 et 70 a été entreprise depuis les années 90. Depuis 3 ans, je travaille pour les activités internationales de l’agence d’urbanisme de Lyon : missions d’expertises ou d’assistance à maîtrise d’ouvrage sur des questions de planification urbaine et des transports à Rabat (Maroc), Alep (Syrie), Addis Abeba (Ethiopie), Ho Chi Minh Ville (Vietnam), et Ouagadougou (Burkina Faso).
Dans le champ du développement urbain, chaque bailleur de fonds, chaque projet de développement a ses propres méthodes, ses propres thèmes et ses villes d’étude. The Millennium Development Goals (MDGs) prône le sustainable development, alors que Cities Alliance développe les City Development Strategies (CDS) qui vont dans le sens d’un développement équitable des villes améliorant ainsi la qualité de vie de l’ensemble des habitants. La Banque Mondiale de son côté continue les Projet de Développement Urbain (PDU) en soutenant en même temps Cities Alliance. Malgré les différentes approches que les organismes internationaux proposent, on reste cependant globalement toujours sur les mêmes outils de planification, c’est-à-dire en fin de compte les mêmes Plans Directeurs et les mêmes Plans de Déplacements Urbain. Que l’on passe depuis quelques années d’une vision « classique » de la planification à une vision « stratégique » ne change finalement rien sur le fond. La planification en Afrique reste un échec tant celle-ci n’arrive pas à organiser le territoire et ne fait qu’entériner à posteriori des décisions prises hors du cadre légal.

Afin de proposer des pistes pour dépasser ces blocages, nous pensons que seule une connaissance fine des processus nous permettra de comprendre à quels enjeux il faut faire face. Il s’agit à la fois de décrire les pratiques des habitants et à la fois comprendre les processus de mise en œuvre des planifications. C’est bien en travaillant sur ces deux niveaux dans un même temps que la planification urbaine se fera durable : comment insuffler de l’innovation dans des processus figés et quelles innovations insuffisées ? Or, aujourd’hui, ce que proposent les bailleurs de fonds et les instances internationales est justement de se situer à un niveau de compréhension qui ne permet pas de changer de paradigme.

Notre communication a ainsi une triple ambition. La première est de faire un rapide historique de la planification urbaine en Afrique et voir comment elle est devenue thématique, séparant transport et urbanisme. La deuxième ambition est de mettre en avant, sur les outils en vigueur aujourd’hui, les principaux blocages : ils laissent peu de place à l’innovation, ils manquent de pragmatisme, ils sont faits partout par les mêmes structures, souvent des bureaux privés. Plus grave encore est que quelles que soient les méthodes utilisées dans les processus de fabrication des plans, elles ne prennent jamais en compte les contextes démocratiques, administratifs ou sociaux, ni de la situation géographique des villes. Enfin, troisième ambition est donner l’esquisse de solutions et de montrer comment dépasser les blocages identifiés précédemment.

Pour cela, nous baserons notre communication sur deux documents de planification que sont le Schéma Directeur d’Aménagement et d’Urbanisme de la ville de Nouakchott et le Plan de Déplacement urbain de la ville de Nouakchott.
INTEGRATED LAND USE AND TRANSPORT PLANNING IN A RAPIDLY GROWING CITY: CASE OF JEDDAH CITY, SAUDI ARABIA

During the past decades the city of Jeddah in Saudi Arabia, has witnessed a remarkable rapid urban growth. As a result of poor planning, management and policies, Jeddah is experiencing various haphazard and interrelated land use and transportation issues. Jeddah’s transportation infrastructure expansion has stimulated urban spatial expansion and residential area growth; however the expansion in infrastructure has not been able to accommodate increases in travel demand, hence causing high levels of congestion. Moreover, Jeddah’s enormous spatial expansion has caused large changes in the daily share of travel modes. Understanding these issues, their interaction and the future impact of different urban development strategies, plans and urban policies on the urban environment is critical for Jeddah’s urban planning as much as it is for transport planning. To understand and solve these issues, Jeddah’s urban planners require a methods of land use-transport analysis that can cope with rapid urban growth. Dynamic land use and transport interaction models provide a rich method to deal with this. This paper attempts to demonstrate how such method can be developed and tested to derive appropriate future land use and transportation policies for Jeddah city, anticipating the urban dynamics. A Cellular Automata based Land Use Transport Interaction model was firstly implemented to simulate Jeddah’s historical land use and transportation interaction between 1980 to 2011, while the future land use and transportation changes and interactions from 2011 to 2031 were predicted subsequently. Different land use and transportation intervention policies were examined and evaluated accordingly. Finally appropriate Jeddah’s future land use and transportation interventions policies are recommended.

Mohammed Aljoufie
Department of Urban and Regional Planning, Faculty of Environmental Design, King Abdulaziz University
Lecturer

Mohammed Aljoufie (Corresponding author) is an urban planner by training. Currently he is lecturer at Department of Urban and Regional Planning, College of environmental Design, King Abdulaziz University, Jeddah, Saudi Arabia; and PhD candidate at Department of urban planning and Management, Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente in the Netherlands. In 2008 he earned his MSc form the Department of urban planning and Management at International Institute for Geo-Information Science and Earth Observation in the Netherlands. His main focus involves the use of urban dynamic modelling, Geographical Information Systems (GIS) and Remote Sensing (RS) in urban transport planning. Currently in his PhD research he attempts to understand the reciprocal relationship between transport and urban growth in by utilizing Remote Sensing, GIS and urban dynamic modeling (cellular automat approach in particular).

Mark Zuidgeest
Department of Urban and Regional Planning and Geo-information Management, Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, The Netherlands
Assistant Professor

Mark Zuidgeest is Assistant Professor Urban Transport in the Faculty of Geo-Information Science and Earth Observation of the University of Twente in The Netherlands. He has 15 years' experience in the transport sector, both as an academic and as a consultant. He is specialized in sustainable urban transport development and geo-information. He is a member of the UN partnership on Sustainable, Low Carbon Transport (SLoCaT), an international think tank on transport and climate change, as well as of The Netherlands expert group on non-motorized transport (Cycling.nl). He has written a PhD dissertation on Sustainable Urban Transport Development and published several articles on this theme. He has worked extensively overseas in urban transport and infrastructure related projects in several countries in Africa, Asia, Latin America and Caribbean. Dr. Zuidgeest is secretary of the international Cycling Academic Network (CAN), a collaboration between universities studying the role of cycling in sustainable urban development.
The strong link between urban development and mobility is a fact. Public transport prioritization has a catalyst effect for both the restructuring of the public transport network and urban development. Three examples of Bus Rapid Transit (BRT) project experiences in South and Central America and Africa will show how.

In order to fix the existing mobility problems, City Authorities must not only try to foresee and prevent the commuting problem, but also try to facilitate the integration between mobility and urban development.

A basic tool for this is public transport prioritization. And a very good example in this domain are BRT systems, which do not only allow emerging and developing countries to access to efficient public systems of transportation at affordable prices, but also create the opportunity of a totally new urban dynamic: they lead to rethinking land use patterns, urban planning, spatial distribution, pedestrian friendly streets, squares, bicycle path; in brief, to make more inclusive cities, in a more sustainable framework.

The presentation will deal with relevant examples of how BRT systems imply a commitment for a better quality of life, an urban development tool and also a reason for technological pride: Transmetro in Guatemala City, the BRT in Rustenburg (South Africa), Transmilenio in Bogotá (Colombia).

BRT systems have had a catalyst effect for both the restructuring of the public transport network and urban development, making the city public transport into a more efficient, safe, and reliable asset, to set some examples: universal access to public transport, adequate road and sidewalk space for both pedestrians and vehicles, construction and successful implementation of bicycle lanes, allocation of new residential developments and commercial areas along the transport corridors, integration of rail and bus stations in the city centres, traffic calming measures, etc.

The three selected cases will show different approaches considered when combining urban and transport planning. All of them have been conceptualized to provide tailored solutions to each particular context, however always aimed to the same objective: the improvement of the quality of life in growing and densely populated urban areas.

These examples will provide good practices for the urban planners of many African cities which are currently following the global trend in terms of urbanization: rapid concentration of population in the urban areas, urban sprawl and their perverse effects on the cost of land and infrastructure, time consumption, pollution and the quality and quantity of transport offer.

Sergi TIO
Advanced Logistics Group (ALG) - Barcelona
Europraxis - Spain
Public Transport Division Manager

Born in 1971, Civil Engineer. Master of Business Management, Polytechnic University of Catalonia (UPC).
Languages: Spanish, English, Italian, Catalan.
Consultant with 13 years of experience in passenger and cargo transport networks and projects. He has participated in all aspects of transport studies (including route reorganization, operations and functions of new proposals, collection schemes, transport economy, bus technology, etc.); transit studies (particularly urban and interurban toll concessions and the implementation of control centres); and macro and micro simulation software applications (TransCAD, Transmodeler and Vissim).
His professional experience has been geared towards developing transportation projects in the international arena, in which, most recently, he has taken part in innovative project development in Delhi, Johannesburg, Gaborone, Lima, Montevideo, Buenos Aires, Panama City, Arequipa, Caracas, Xi’an, Bangkok, Guatemala, Mexico City, as well as various European cities. Most of these studies have been carried out for public, private and multilateral institutions, such as IADB, ADB, World Bank, EBRD and CAF. He has been responsible for the ALG technical coordination of the projects in Central America and Andean countries between 2005 and 2009.
Pune, the second largest city of Maharashtra state, India has been experiencing continuous growth and change over the last decade. The total number of trips is drastically increasing due to rapid growth in population and employment. In the recent past, affordability and convenience have driven most of the working group of Pune towards two wheeler usage. The comfort and extra mileage provided by these vehicles had triggered a revolution in this area. But, if the situation is viewed from the transportation planning angle, it is not sustainable. The introduction of shared autos and the hike in public transport fares added further impetus to the unsustainable growth of private vehicles.

The observed modal shares during the study indicate that the share of trips by public transport is only 13% whereas the share of private transport and intermediate public transport respectively is 44.9% and 8.3% (Walk and Non-motorized transport – 33.8%). With increase in private vehicle ownership the situation is becoming worse and hence there is an urgent need to augment the current transportation system with modern high capacity transit systems like the Metro, BRTS/Light Rail systems with access being promoted by walk, bicycle, bus and Intermediate Public Transport (in that order).

Considering the accelerated growth in population that has been observed in the recent past and the potential of future growth of Pune Metropolitan Region as evident from the population projections, implementation of land use and transport policies for moving towards a more sustainable modal share is of paramount importance. In this regard, Pune Municipal Corporation has proposed development plans for the implementation of high capacity transit systems in a phased manner with appropriate last mile connections (preferably with walk, bicycle, bus and IPT, in that order) and appropriate transit oriented development schemes considering the concept of sustainable urban transportation. The concept of mixed land use minimizing commuter trips in the large IT and ITES employment centres and other employment and growth centres which are being currently implemented and the ones planned in the future is considered in the present study.

The study analyses the impacts of mixed land use and transit oriented development scenarios like increased FSI along the metro corridors for future years using the transportation planning model developed by IIT Bombay. Some of the hypothetical scenarios like an increased public transport share and an increased work participation ratio are also considered for the study.

Dr. K V Krishna Rao is a Professor of Civil Engineering at Indian Institute of Technology Bombay. He completed PhD in Urban Transportation Planning in 1996 and Masters in Transportation Engineering in 1986, both from Indian Institute of Technology Madras, India. His research interests include Travel Demand Modelling and Forecasting, Behavioural Travel Modelling, Urban Land Use Transport Modelling, Traffic Design and Analysis, Pavement Analysis, Design and Management, and GIS, GPS and Micro-simulation in Urban Transportation Planning. He has completed several sponsored research and consultancy studies in his areas of research. He has several publications in refereed international journals and conferences.

Mr. Chetan Kumar H is pursuing Masters in Transportation Systems Engineering at Indian Institute of Technology Bombay. He completed B.Tech. in Civil Engineering in 2008 from Visvesvaraya Technological University. His research interests include Travel Demand Modeling and Behavioural Travel Modelling.

Other authors: Bhargav Venil P
La ville de Yaoundé comme la plupart des capitales africaines fait face à une importante crise de mobilité due aux effets conjugués de l’étalement spatial, de l’insuffisance de l’offre publique et privée et de la croissance rapide de la demande. La ville avec l’aide des partenaires au développement s’est orientée vers l’élaboration d’un plan de déplacements urbains, instrument de planification par excellence pour améliorer l’articulation entre l’organisation spatiale du territoire et la gestion de la mobilité. La phase d’étude de ce plan dénommé “Transports Capitale” ayant été complètement réalisée, le prochain challenge des autorités municipales est celui de la mise en œuvre de ses orientations avant que la dynamique de la ville ne les rende désuètes. D’où l’intérêt de la question des enjeux, méthodes et contraintes de cette mise en œuvre. Il s’agit dans cette communication d’identifier la démarche stratégique à adopter par les autorités municipales. Nous voulons montrer que la phase de mise en œuvre est aussi importante que celle de l’étude pour l’atteinte de l’objectif principal du plan de déplacements urbains.

Arnauld philippe NDZANA
Communauté Urbaine de Yaoundé- Cameroun
Directeur des Services Techniques
arnauldndzana@yahoo.fr

Ingénieur de Conception Génie Civil. Ingénieur Urbaniste

Valérie Ongolo Zogo
Université de Yaoundé II - Soa
Econmiste des Transports
ongoloval@yahoo.fr

Economiste des transports. Membre de la commission de suivi et de recette techniques du Plan de Déplacements Urbains de Yaoundé à la Communauté urbaine
UGANDA’S URBAN DEVELOPMENT: A SCRUTINY OF TRANSPORT PLANNING AND MOBILITY IN TOWNS AND CITIES.

Uganda like most African countries is experiencing exponential urban growth and expansion at a very alarming rate. According to the Uganda Bureau of Statistics (UBOS), rural-urban migration has more than tripled in the last decade. The capital city Kampala receives the highest number of people who migrate from rural areas to the city in search of jobs and better social and economic services. Whereas cities and towns are expanding, transport and urban mobility within these metropolitans have not been expanded to match the population increase. Roads are narrow which leads to congestion and traffic jams. Urban planning is not yet up to the required standard with poor coordination among government agencies responsible for the same and other stakeholders. Cities are not zoned to allow organized human settlement, economic centers and industrial areas to grow in an orderly fashion. The size of Kampala has for instance grown from the original scope covering the historical “seven hills” with a radius of less than 5 Kms to now over 20Kms. Most of the new areas are not planned. An inefficient public transport system using 14-seater mini buses exists in all towns. Although there have been efforts by government to introduce larger buses for public transport, this is yet to be achieved due to various reasons including political interference.

This paper looks at development trends Uganda’s cities and towns are taking in recent times. It forecasts on the likely futuristic tendencies and explores the possibilities that need to be harnessed and embraced to turn urban areas into modern cosmopolitan areas. It looks at the historical perspective but also borrows experiences from relevant literature from published works about urban mobility and transport planning. It enumerates the challenges faced by Uganda’s towns and cities which are closely linked to lack of urban mobility planning and draws learning experiences from well known examples of cities both in developed countries and in Africa that have been transformed to embrace modern urban transport planning strategies.

Sam Stewart MUTABAZI
Uganda Road Sector Support Initiative (URSSI)
Kampala Uganda
Executive Director mutasamste@yahoo.com

Mutabazi Sam Stewart is the current executive Director Uganda Road Sector Support Initiative (URSSI), a local Not-for-Profit Non Governmental Organization. URSSI facilitates and advocates for coherent and timely development and planning of road transport and urban development in Uganda with particular emphasis on roads, municipal planning and sustainable transport management both in rural and urban areas. URSSI champions and promotes best practices in international urban development and management. It is at the forefront of supporting Uganda’s towns to grow into well planned urban centers and cities that are pleasant to both the citizens and visitors. Mutabazi is passionate about urban planning and housing and has facilitated and participated in meetings, conferences, workshops and trainings about the same at both local and international levels. He is well versed with policy formulation and analysis, international, regional and domestic treaties, regulations laws and guidelines that relate to Housing and shelter. He is fervent about housing rights and urban planning and management.
Transport infrastructure plays a big role in mobility. Many cities in developing countries are rapidly urbanizing, roads are expanding and the majority of the people rely on public transportation. However, this public transport system is not safe, efficient and poorly serves Metro Manila’s 11 million population, over a third of which are in poverty. Seventy percent (70%) of the population are highly reliant on public transportation. This segment of the population belongs to the urban poor and middle class.

As in any other city in developing countries, informal public transport modes play a major role in mobility especially of the urban poor and the vulnerable sector of the society. Metro Manila has a peculiar mix of different public transportation services including buses, GT/FX Express, jeepneys, tricycles (motorcycle with sidecars), and “pedicabs” (bicycles with sidecars). These modes are predominantly privately owned and operated and are poorly regulated by government. Tricycles alone are estimated to be at 104,166 units.

The complex and diverse modes of transport in Metro Manila has spawned informal transport terminals and hubs – public or privately owned terminals for motorized and non-motorized public transport that have no clear government legal authority to operate.

The Philippines continues to rely on road network expansion to accommodate the demand for better mobility. There has been a growing demand to improve urban public transportation and mobility by making this more efficient, dependable and sustainable. Effective management of public transportation is seen as a factor for economic growth and development. Effective management however begins with the identification and inventory of the existing public transportation facilities especially terminals and hubs (both formal and informal). Locating and mapping these public transport terminals and hubs, and modes are crucial in understanding transport challenges and uncovering opportunities for greater connectivity in Metro Manila. However, while maps are considered important, Filipinos are unaccustomed to their use. Not many understand that mapping transport features and sharing them widely is a crucial step in enabling development actors and the people to plan and implement mobility initiatives.

This study explores the mapping of informal transport terminals and hubs in Brgy. 176, Bagong Silang, Caloocan City. The results of the study are the trigger for participatory transport planning in a particular local community. The study will demonstrate the use of map-oriented studies in triggering community transport initiatives by barangay leaders, transport managers, and the underserved poor segments of the population.

Marie Danielle V. Guillen is the manager for the Rockefeller Foundation supported project entitled “Catalyzing New Mobility in Cities: the Case of Metro Manila” in the Ateneo School of Government and a part-time Faculty at Ateneo de Manila University. Prior to joining this project, she was associate consultant of the Transport and Traffic Planners Inc. She worked in the Asian Development Bank Institute (ADBI) in Tokyo, Japan, the Southeast Asia Ministry of Education Organization-Southeast Asia’s Regional Centre for Agriculture (SEAMEO-SEARCA), and the Philippine Business for Social Progress. She is a member of the Transportation Science Society of the Philippines, the Eastern Asia Society for Transportation Studies and the World Conference on Transport Research Society. She received her Ph.D. and M.S. in Policy and Planning Sciences both from the University of Tsukuba, Japan and M.A in Urban and Regional Planning and B.A. in Sociology degrees from the University of the Philippines.

Lorenzo V. Cordova, Jr., a Forester and Environmental Planner by profession, is an innovations and sustainable development advocate with functional experience in planning, program management, project development, grants management, technical review, assessment, research, project monitoring and evaluation, ecological and economic modeling, and governance. He has extensive experience working with local government units, national government agencies, academe, civil society organizations, funding institutions, social enterprises, and private companies in the Philippines and other Southeast Asian countries. He is currently the Research Associate of the Ateneo School of Government’s Innovations at the Base of the Pyramid in Asia Program – Catalyzing New Mobility in Cities Project. Mr. Cordova is a MA candidate in Urban and Regional Planning at the University of the Philippines Diliman. He earned his Bachelor of Science degree in Forestry major in Forest Biological Sciences at the University of the Philippines Los Baños.
GOVERNMENT STRATEGIES FOR RESHAPING URBAN TRANSPORT NETWORKS AND MOBILITY IN THE DEVELOPING WORLD: THE CASE OF PORT HARCOURT, NIGERIA.

In recent times, successive governments in Rivers State, Nigeria has made attempts at increasing and enhancing the mobility of human and vehicular traffic within and around the metropolitan and one-city capital of the state. Such transport/mobility projects as the construction of the first ultra modern monorail project in Nigeria, the setting up of the Rivers State Traffic Management Agency (TIMA–RIV) to complement the efforts of the Federal Government Traffic Police and the and the construction of more access roads in the urban suburbs which have been vigorously pursued. This paper seeks to highlight the pros and cons of these policies and strategies of the state government in relation to cost and benefit to the people of the state now and in the nearest future. The paper discusses the various management strategies and policy thrust of the government in achieving the mobility question in Port Harcourt. Such policy thrust as the public-private initiatives (PPI) in the construction of the first monorail project in Nigeria and the development of the Greater Port Harcourt City to reduce traffic congestion and increase intra city mobility is discussed. The paper also discusses the numerous barriers faced by the state government in reshaping the urban status of the city, increasing road networks and mobility of the ever populating investor friendly state. The paper holds that the achievement of an enhanced urban mobility of the city of Port Harcourt is based not only on the achievement of these policies but also on the institutional frameworks/bases for the observance of traffic regulations and urban extension policies by the citizenry. It concludes that the state government should as a matter of necessity continues to develop adequate transport infrastructure that will link transport and town planning practices together.

Basil POLLYN

Ignatius Ajuru University of Education, St. John Campus, Port Harcourt, Nigeria

Basil POLLYN

Ignatius Ajuru University of Education, St. John Campus, Port Harcourt, Nigeria

Lecturer

Basil POLLYN

Ignatius Ajuru University of Education, St. John Campus, Port Harcourt, Nigeria

Lecturer

Born 39 years ago, Mr. Pollyn is a lecturer in the Department of Management, Rivers State University of Education, Port Harcourt. He is currently at the seminal level of his Ph.D programme with the Ebonyi State University, Abakaliki, Nigeria. Mr. Pollyn is the Chief Research Officer of the Academic and Human Resources Development Centre (ACAHRDDEC) Port Harcourt; an NGO involved in research, publication and development of human capital in Nigeria. He is a management and administrative consultant and has published in reputable local and international journals. He belongs to several professional bodies including studentship of the Association of Certified Chartered Accountant (ACCA) of London.

Nwakaego Chukuigwe

Ignatius Ajuru University of Education, St. John Campus, Port Harcourt, Nigeria

Nwakaego Chukuigwe

Ignatius Ajuru University of Education, St. John Campus, Port Harcourt, Nigeria

Head of Department

Dr Mrs. Chukuigwe holds Ph.D in Management specializing in Organization Behaviour. She is currently, Head, Department of Management, Rivers State University of Education, Port Harcourt, Nigeria. She has written extensively in the field of management and business administration. She has attended and presented papers in local and international conferences and has also published in reputable local and international journals.
SUSTAINABLE URBAN MOBILITY PLANNING FOR COPING CHALLENGES OF URBAN TRANSPORTATION IN THE FAST URBANIZING ETHIOPIA: THE CASE OF ADDIS ABABA

Urban transportation has been one of the major ingredients in the formation of cities and their morphological setup. It is a critical element of urban life in the dynamically growing and urbanizing World.

One of the major urban problems the African cities facing today is related to urban mobility with high congestion, high traffic accident and air pollution increasing at alarming rate. These problems emanate at planning and urban management levels of cities. The issue of urban mobility is today a cross-cutting issue which affects socio-economic development, the environment and the climatic conditions of not only cities but the world especially due to the carbon emission and the effect on climate change.

Urbanization in Ethiopia has been characterized by low level of planning. However, the country currently knows high urban growth rate. Ethiopia, still being one of the least urbanized countries in the world (18%), has one of the fastest rates of urbanization (4.34%) higher than the average growth rates of the Sub-Saharan Africa (3.95%). Planning as a tool and processes of anticipating, predicting, ameliorating and guiding future development has critical role in the future development of the country and the living condition of the population. One of the major areas that appeals for improvement is urban transportation.

In light of this fast urbanization, the demand for well planned urban transportation is becoming tremendous. Given the rapid growth of towns, the complexity of urban problems and the limited capacity, due and rapid consideration should be given for efficient urban mobility planning.

The main focus of this paper is to analyze the consideration of urban transportation and its evolution in the urban planning of Ethiopia cities with particular emphasis on Addis Ababa. In line with this, the paper will analyze the major urban mobility problems, the applied planning philosophies and approaches in comparison with the state of the art in urban mobility planning. The paper will also strive to identify the approaches and tools which allow an efficient urban mobility planning and development of growing cities like Addis Ababa. The paper will conclude on the elements for sustainable urban mobility planning which are urgently required for coping the growing challenges of urban transport in Ethiopia.

Key words: Urban planning, mobility, Urban transportation, urbanization and Ethiopia, Addis Ababa

Wondimu ABEJE

WONDIMU CONSULT, CONSULTING PLANNERS

MANAGING DIRECTOR

Addis Ababa
Ethiopia
wondimuabeje@yahoo.com

Dr Wondimu Abeje is a senior urban planner in Ethiopia with extensive academic and practical experiences in urban planning and urban mobility. He has been the dean of Institute of Urban Development Studies (2001-2005). As a head of Ethio-French Urban Development Project office (2006-2009), he has worked on modes of urban transportation. Currently, he is a consultant in urban planning and development as well as a part-time assistant professor in Addis Ababa University, Center of Urban Development and Management.
The City of São Paulo has a legal instrument called Urban Operation (UO) which allows a developer to build above the statutory limit within the Master Plan in exchange for buying municipal bonds. This revenue is then allocated towards infrastructure improvements in the UO area. The Batata Square Urban Renewal Project is classified as a UO and its main goal is to revamp an extremely deteriorated area previously occupied by a disorganized and unsafe bus terminal and a busy but illegal street market. The project main objectives are the creation of large open space areas, the strengthening of the activity center through intermodal transport integration and to encourage private investment in both residential and commercial buildings. Due to the construction of a new metro station (Faria Lima Station) and the need to relocate the existing Bus Terminal, the project area was extended resulting in a new Bus Terminal adjacent to the metro and the commuter train station called Pinheiros Station.

Further to the above, the project was divided in 3 distinct areas:
- The Batata Square Area, which is both an Urban Renewal Project and a Local Street Network Redesign;
- The Pinheiros Bus Terminal Area which is an important node of the public transport network and is intended to cater for multimodal integration (metro, suburban trains, city and metropolitan buses, bicycles and vehicles);
- The third area connects the 2 areas above through a series of interventions in the local street network.

The total area of the project is 51ha with 17,2ha located at the Batata Square, 6,1ha at the Pinheiros Bus Terminal and 27,7ha in the connecting area.

The main proposals for each area are:
- **Batata Square** (new Public Space Areas - parks, expositions and performances by artists, new public lighting and pedestrian areas - and street improvements; to encourage private investments in the area);
- **Pinheiros Bus Terminal** (Bus Terminal for municipal and metropolitan buses with an area of 20,000 square meters. An estimated 74 buses/ hour are expected during the commuter AM peak; Integration with the metro station (110.000 pax/day) and the commuter train station (100.000 pax/day); Integration with vehicles (underground carpark with 350 spaces) and ‘kiss & ride’ area).
- **Connecting Area** (Increase local street capacity (1,0 km); Footpath renewal and landscaping).

The Planning Stages are completed and construction is underway. The works are expected to be completed by the end of 2012.

---

**Jaime WAISMAN**
Sistran Engenharia Ltda
São Paulo
Brazil

**Sisteran Engenharia Ltda**

**Tito Frascino**
TLF Arquitetos e Associados Ltda
São Paulo
Brazil

---

**Gabriel Feriancic**
Civil engineer, MSc, PhD (University of Sao Paulo, 2001, 2005, 2010). His professional experience includes transportation planning studies and projects for cargo, LRT, bus corridors and highway concession. Presently, Mr. Feriancic is a director at SISTRAN
Ideally the transport and land use plans of cities should be integrated to ensure that transport systems are sustainable and follow a low carbon path. However, even where this is not done or done satisfactorily, it is necessary to draw up the future mobility plans which recognise the existing urban settlement’s structure, integrate the transport system with it and provide for sustainable transport systems. In addition to integration with existing city structure, city mobility plans should also provide for equitable transport systems that meet mobility needs of all. Plans that address the mobility needs of all traveller categories provide equal opportunities to all. Such plans can foster economic growth and poverty alleviation. It is hence important that the plans are integrated with city’s structure and are inclusive and equitable. Several cities in developing countries are involved in formulating their mobility plans. It is important to evaluate whether these plans are integrated with city development and promote sustainability and equity. This paper would focus on evaluating mobility plans in the Indian context. As part of the National Urban Renewal Mission, Indian cities have been formulating mobility plans to guide the future growth of transport sector. The paper will focus on evaluating mobility plans of a few select Indian cities to see as to what extent the mobility plans facilitate the integration of transport and town planning, building of transport infrastructure that promotes sustainability and policies that make transport system equitable and sustainable. The paper will identify good practices, processes and strategies as also gaps and inadequacies in the plans and recommend measures to address these gaps and improve the quality of the mobility plans. The paper will also suggest a framework that could be used by other cities in India or in other developing countries to formulate and implement sustainable and equitable transport systems.

Sanjivi SUNDAR
The Energy and Resources Institute (TERI), New Delhi
Distinguished Fellow
ssundar@teri.res.in

Mr Sundar is a Distinguished Fellow at The Energy and Resources Institute (TERI), New Delhi, NTPC Professor in Regulatory Studies in TERI University, New Delhi and Honorary Professor at CEPT University, Ahmedabad. Mr Sundar was a career civil servant and has held senior positions in Gujarat state, in the Government of India and the Commonwealth Secretariat, London. He retired as Secretary in the Ministry of Surface Transport, Government of India, where he initiated major policy changes in the ports and roads sectors. He has since led TERI’s work in the area of transport focusing on promoting sustainable low carbon transport. Mr Sundar chaired the AITD study on “Trucking Operations in India”, the Expert Committee on Road Safety and Traffic Management and the Expert Committee set up to review the Motor Vehicle Act. He has written extensively on transport issues and has co-edited a book “Clearing the air: better vehicles, better fuels”.

Akshima Tejas Ghate
The Energy and Resources Institute (TERI), New Delhi
Fellow
akshima@teri.res.in

Ms Ghate is an urban environmental planner and has been academically trained to carry out urban, transportation and environmental planning. She is currently working as a Fellow at the Centre for Research on Sustainable Urban Development and Transport Systems, The Energy and Resources Institute (TERI), New Delhi. She graduated as a Development Planner, and has a Master in Planning with specialization in Environmental Planning from the School of Planning and Architecture, New Delhi. At TERI, she is involved in research projects related to sustainable urban and transport development. Her recent research work focuses on issues related to sustainability of current trends of urban transport growth in Indian cities; analyzing transport sector’s energy consumption and climate change impacts; research related to railways sector in India; estimating carbon footprint/life cycle impact of transport projects and urban energy consumption; sustainable planning of large urban developments and issues related to urban energy access.
LINE 4 OF BRT (METROBÚS) OF MÉXICO, TECHNOLOGY AND URBAN ACTION: AN EXAMPLE OF CITY REMODELATION, RECOVERY AND CREATION OF PUBLIC SPACES.

To the scarcity of economic resources of cities, for several years there has been a growing presence of solutions or BRT BRT / BHLS virtually anywhere in the world, whether in rich countries where those in less fortunate.

The case of European BRT differ significantly from their Latin American counterparts (BRT’s, with different local names), not only in their technological solutions but infrastructure, strategies and philosophy. Recent focus on speed, therefore the capacity politician driven by the need to deliver new modes of transportation in the shortest possible time, while the former would prefer the level of service, comfort, urban integration and reduction in car traffic, among others.

Fortunately, a change begins booting into how to design the BRT’s Latin America in order to attract motorists beyond captive users, and enjoy the infrastructure works for (re) shaping the city recover public spaces and create others.

In Mexico, the network of BRT (Metrobús), inaugurated in June 2005 was a very significant expansion, from 30 km to 95 km in 2012. The aim is to achieve in the medium term a network of 200 km, equivalent to the existing subway in 1969.

The most important in this context is that the last line commissioning, Line 4, which connects with 28 km, International Airport with the center of the capital, with many connections to other lines BRT bus classic, underground and suburban trains, led for the first time beyond the "work involved" significant actions to shape or reshape urban neighborhoods it serves and to facilitate the transformation of "sensitive" neighborhoods and thus the recovery of public spaces, long lost, and the creation of new ones.

Somehow built on a hybrid model European and Mexican, both from technological point of view that the operating line is now a showcase that is an essential reference for any future online, local, or another Mexican city or elsewhere that would equip it, lifting scheme uncritical "copy-paste" models Curitiba to Bogota with saturation levels are widely disseminated and their impact areas poses many questions.

Fernando LOZADA
ISLAS
MEXICO

ingytransporte@gmail.com

Doctor and Master of Transport by the National School of Bridges and Roads. Master in Civil Engineering and Public Works Management in Mexico. Over 27 years of experience at national and international level, in transport and urban mobility, the public and private sectors and academia. He has provided leadership responsibilities in the areas of production, operation and studies, planning and strategy, leadership, managerial and operational, as well as in teaching and scientific research. He is a member of many national and international scientific organizations. Since 2004, he is devoted to teaching and research in transport and urban mobility planning and the right to the city.
La « modélisation » de l’urbanisation tient compte des forces d’attraction qui s’appliquent aux individus et aux groupes, liées à la localisation et à l’abondance ou la rareté des moyens disponibles pour satisfaire leurs besoins vitaux de logement, de nourriture, de travail, d’échange, d’éducation, de loisir... et des modes de déplacement et de transport utilisables. Ces aspects sont conditionnés par des facteurs technologiques, économiques, financiers, environnementaux, sociaux et culturels dont l’évolution constante, difficilement maîtrisable par le pouvoir politique, explique l’alternance de tendances à l’exode rural ou à l’étalement urbain, ainsi que les effets de ségrégation.

Face à l’épuisement des ressources, à la raréfaction des espaces, à l’accroissement des pollutions, les Métropoles ont engagé des processus de « reconquête » des centres villes et de densification urbaine, qui engendrent des réaménagements urbains considérables.

Pourtant, l’accélération des progrès technologiques et des changements sociétaux engendrés par les TIC (démétalisation du travail et de nombreux services), ainsi que l’évolution de la mobilité et des contraintes socio économiques, pourraient rapidement frapper d’obsolescence ce modèle de « reconstruction de la ville sur la ville » qui semble aujourd’hui inéluctable.

Déjà, le « covoiturage dynamique », expérimenté à Marseille, est susceptible de transformer au terme de quelques années l’ensemble des véhicules en circulation en un fabuleux moyen de transport collectif à la demande, en temps réel, sécurisé, et apte à desservir des secteurs diffus ou éloignés que les transports en commun classiques ont renoncé à desservir.

En imaginant un ensemble de solutions de mobilité, dont celui-là, Marseille doit envisager dès maintenant plusieurs scénarios pour son futur, jusqu’à celui, extrême, où la seule proximité recherchée serait celle de la ressource alimentaire qui ne sera jamais « démétalisable ».

C’est l’état actuel des recherches prospectives à caractère opérationnel qu’elle conduit sur ces scénarios alternatifs et sur les différentes formes urbaines imaginables et souhaitables qui en résultent dans le contexte méditerranéen, que la Ville de Marseille se propose de présenter.

---

Jean-claude GONDARD
Ville de Marseille - Direction Générale des Services
Marseille

Directeur Général des Services
jcgondard@mairie-marseille.fr

Diplômé de Droit Public et de Sciences Politiques, Jean-Claude GONDARD a commencé sa carrière au Ministère des Finances. Après avoir dirigé les Services de la Région Provence Alpes Côte d’Azur pendant 5 ans, il est, depuis 1995, à la tête d’une administration de 11 500 agents en qualité de Directeur Général des Services de la Ville de Marseille. Fervent défenseur des nouvelles technologies, il s’emploie à moderniser les infrastructures de Marseille et à développer la performance, la créativité et l’attractivité du territoire pour favoriser son renouveau économique, social et culturel.

Jean-Charles LARDIC
Ville de Marseille - Direction de la Prospective
Marseille

Adjoint au Directeur Général des Services - Directeur de la Prospective
jclardic@mairie-marseille.fr

Après avoir créé et animé la Direction du Développement Durable, Jean-Charles LARDIC, Ingénieur Général des Ponts, Adjoint au Directeur Général des Services de la Ville de Marseille, anime la Direction de la Prospective. En liaison avec les chercheurs, il contribue au pilotage stratégique et à l’innovation pour préparer la ville aux évolutions de la société et aux grands défis du futur.
IMPLEMENTATION OF A HIERARCHICAL STRUCTURING PUBLIC TRANSPORT NETWORK IN AN EMERGING CITY (in french)

Dans les villes émergentes, souvent très peuplées et en développement rapide, les réseaux de bus traditionnels et les modes de transports artisanaux (taxis, mini-bus) ne parviennent pas à offrir des conditions de transport satisfaisantes à l’ensemble des habitants. De plus, ces villes souffrent pour la plupart de problèmes chroniques de congestion et de pollution. L’une des réponses que la collectivité peut apporter à ces problématiques est la réalisation d’un réseau de transports collectifs structurant permettant à la population de disposer d’une offre de transport efficace et intégrée avec les autres mobilités existantes. La présente contribution vise à présenter, à l’aide d’exemples, la méthodologie permettant d’aboutir à la définition d’un réseau structurant servant d’armature à l’ensemble des transport collectifs, puis à présenter et comparer les différents modes de transport pouvant constituer ce réseau armature.

Jérémie SIMON
Egis RAIL
FRANCE
Jeremie.simon@egis.fr

Pierre MARX
Egis RAIL
Directeur de Projet
FRANCE
Pierre.marx@egis.fr

THE ROLE OF URBAN MOBILITY IN (RE)SHAPING CITIES: URBAN ROPEWAY AS PART OF SUSTAINABLE URBAN TRANSPORT NETWORKS IN DEVELOPING COUNTRIES

Ropeways have been associated with mountain resorts and leisure parks. Technology and operational concepts, however, have evolved to make them a reasonable and attractive proposition for mainstream urban public transport, too. From the capacity point of view, ropeways with 5000+ pphpd, can compare to busways and tramways as links in a primary public transport network of large and growing cities. From the customer service point of view, modern systems work smoothly and access barrier free, at a very competitive price.

This presentation shows details of working and expanding urban ropeways from South America and North Africa. It analyses the success factors of these implementations and discusses the specific advantages and transferability of the urban ropeway concept to a variety of settings in developing countries.

Transferability, in particular to developing cities

• Urban planning: The physical circumstances where urban ropeways may prove to be the ideal transport system solution are particularly numerous in fast growing cities that are often characterized by high densities, unequally distributed transport infrastructure and difficult natural terrain.

• Economics: Ropeways probably are the mass transit system with the lowest possible Life Cycle Cost, thanks to limited infrastructure costs, high energy efficiency and the provision of a unique service, 100% safety and 99% availability can be achieved at a cost that is affordable and worthwhile for even the least affluent urban economies

• Governance

Conclusions
Ropeways are an old technology reinvented, with a new future. Just like the BRT and Light Rail in recent decades. Their specific domains of excellence make it a very potent team player for the other modes, rather than a competitor. Their manageability in terms of urban planning, economics and governance make them a low risk, high yield proposition for public agencies and private investors alike.
Dr. Jürgen Perschon has professional working experience in the transport sector of both developed and developing countries since 1995, predominantly on transport planning, road safety, low-cost public and non-motorized transport as well as gender-related transport in rural and urban Africa and in the European and Eastern European context. Since 1995 Jürgen Perschon has consulted for GTZ, the German Agency for Technical Cooperation. His work focuses on the relation between transport and CO2 emission reduction, transport and the Millennium Development Goals, Poverty Alleviation, Environmental Protection, Road Safety and Freight. In the European region he has worked for the cities of Bratislava (with UNDP), Mitrovica, Peja (with UNHABITAT), Rome and Hamburg. He is currently working on establishing a data base on Best Transport Practice in Europe. He has also assisted in the proposal development for the EU funded “EcoMobility Label Project”, which has commenced 2009 and is run by the Global Alliance for EcoMobility (GAEM) and is currently involved in the EU funded QUEST Project on Quality management for urban energy efficient sustainable transport in 50 European cities. In 2009 he worked with the United Nations Environmental Program (UNEP) in developing a guidance document on Road Safety UNEP Share the Road Campaign Guidance Document on Road Safety. Since 2010 and together with the Stockholm Environmental Institute (SEI) he is working on improving transport indicator research and data quality with 6 African Countries as well as networking in the Transport and Environment Science Technology Network (TEST). In 2011 he started to advise the German government on transport issues in the UN CSD process. Moreover he is giving lectures and trainings on sustainable transport to ministries, municipalities, NGOs but also at universities in Germany and China. Since 2003 he has been working with the Institute for Transportation and Development Policy (ITDP USA), based in New York and was the Executive Director of ITDP Europe for 7 years. Dr. Jürgen Perschon is now the Managing Director of the European Institute for Sustainable Transport (EURIST), a non-profit NGO, based in Hamburg, Germany.

Joachim Bergerhoff earned his Master degree in political sciences with a thesis on Local Government facing the Challenge of Mobility in 1992. Since that time, he has been active on all fronts of sustainable mobility as secretary of the bicycle advocacy GRACQ and founding member of ProVélo (Brussels). He continued his career in a regional consultancy working for the EU THERMIE programme, dealing with energy efficiency and land use planning. He then joined the general secretariat of the International Association of Public Transport (UITP), where he focussed on public transport organisation, statistics, marketing and product innovation, until he was nominated Deputy Head of Staff of the Minister of Transport of the Walloon Region (Belgium), from 1999 to 2002. In that position, he was involved in the supervision of the regional public transport company, the national railways policy, in the elaboration of numerous municipal mobility plans, the support to mobility NGOs and the launch of the first Car Sharing scheme in Belgium. He then gained hands-on experience in as manager of the Geneva transborder region public transport fare consortium. From 2007 to 2011, Joachim was the transport & mobility expert of the UN-HABITAT Municipal Spatial Planning Support Program in Kosovo, where he advised several municipalities and the central institutions on transport planning issues, the organisation of public transport and the promotion of “active mobility”, i.e. walking and cycling. He now is Senior Strategic Analyst with STIB-MIVB, the public transport operator of Brussels, where he lives with his wife and three children. Joachim also takes special interest in West African urban transport and mobility issues, which he has studied during several visits over recent years.
USING AN AREA-WIDE ANALYSIS OF CONTEXTUAL DATA TO PRIORITIZE NMT INFRASTRUCTURE PROJECTS: CASE-STUDY CAPE TOWN, SOUTH AFRICA.

Improving mobility is seen as key to facilitating the economic uplift of the urban poor. In South Africa, the majority of urban poor live in the periphery of cities. They travel long distances at high cost to go to work and school and are dependent on public transport and non-motorized transport (NMT) (walking and cycling) for their travel needs. Prioritizing NMT infrastructure projects, especially in view of the extent of the need and limited budgets, poses a great challenge to local decision makers.

This paper describes the application of a statistical clustering method to the results of a GIS-based Spatial Multiple Criteria Assessment (SMCA) of contextual data in a city or town to identify areas that are most suited for walking and cycling infrastructure. The method allows for a large amount of land use, socio-economic, environmental and transport data to be included into the assessment in a logical manner, and for statistically robust outputs. The method is demonstrated through the use of a case study in the city of Cape Town, South Africa. The results are analysed in relation to the current NMT planning being done in the city. It is able to identify infrastructure that should be prioritized, or may benefit from a possible realignment, and is able to give credible, data driven reasons for selecting a suitable quality of service for links in the network.

The research demonstrates that contextual information should play a role in infrastructure provision decision-making processes, and shows how the sustainability concerns underlying integrated land use and transport planning can be put into effect within the traditional transport planning environment.

Eddie BEUKES
Ero Engineers (Pty) Ltd
Transportation Engineer and Planner
Durbanville
South Africa
ebeukes@ero-engineers.co.za

Dr Edward Beukes is a practicing civil engineer specializing in transportation planning and the design of roads and related infrastructure, and is based in Cape Town, South Africa. His research interests include transportation planning, NMT planning, road safety and the use of spatial analysis in transport planning.

Marianne Vanderschuren
University of Cape Town
Associate Professor
Rondebosch
South Africa
marianne.vanderschuren@uct.ac.za

Dr Marianne Vanderschuren has a Bachelor’s degree in Transport. She worked as a researcher in the Civil Engineering section at the University of Technology Delft and was a researcher at the Netherlands Organisation for Applied Scientific Research (TNO). She was the project leader of various large national (Dutch) and international (European Union) projects from 1995. In 1999, she obtained her Master degree in System Engineering, Policy Analysis and Management from the Technical University of Delft, and in 2006 her PhD from the University of Twente. She was appointed a Senior Lecturer, with responsibility for developing the teaching of transport studies, in the Department of Civil Engineering at UCT in 2000. She is the African contact person for the Cycling Academia Network. Her current research interests include road safety, non-motorised transport promotion, transport modelling, dynamic traffic management and sustainable evaluation studies.

Other authors: Mark Zuidgeest
The relationships between transportation, land-use, and the environment are critical for developing a sustainable city. No question that this basic understanding should lead our future planning. In addition, frequently planning is general and does not address a specific population, and we claim that planning for a relevant population is another fundamental step for creating a sustainable plan. As of that, the essential question is: How can planners reach equilibrium between transportation/mobility, land-use, environment and population so that an attractive sustainable built environment is developed, travelling is minimized and environmental quality is reached?

In this study a hybrid approach of a multi-agent numerical model and planner “fine tuning” is utilized to develop and assess combinations of fundamental urban forms and planning ideas, in terms of sustainability measures. The aim of this model is to create a tool which enables planners to develop a tailor-made city scenario, which is a sustainable city for a target population, based on the population criteria, as well as planning for a specific city size. Hence, we aim at obtaining a complete hybrid frame of work, based on numerical simulations and planner heuristics in order to reach a “relevant” plan, reflecting a sustainable mobility-environmental built environment.

Different planning scenarios are developed. These scenarios can differ in two aspects: road structure, such as “multi-nuclear city” or “compact city”, and planning ideas such as “green city” or “mixed-use city”. The model is based on collected data regarding people preferences of the built environment (a conjoint study), mobility, and data concerning peoples activities (comprehensive Israeli time-use survey), as well as planner’s heuristics. Using the described data the model creates a city plan in a few stages. These stages include a development of a land use map as the first one, and facility distribution in the second one. The outcome is various city plan scenarios. These scenarios are evaluated based on different transportation/mobility key performance indicators which enable decision makers as well as planners to choose the most sustainable city scenario. The various stages of the planning algorithm will be elucidated together with case studies of urban/transport planning scenarios which are compared in terms of environmental-sustainability indicators, in order to suggest a new planning tool, for a sustainable built environment.

Rachel KATOSHEVSKI–CAVARI
Israeli Ministry of Interior
head of the infrastructure development
krachel@bgu.ac.il

Rachel Katoshevski-Cavari, Ph.D.- an urban planner. Rachel is working at the Israeli Ministry of Interior as the head of the infrastructure development. As of that she is responsible for the development of all infrastructures in the southern part of Israel including roads, trains, power plants, and more. In her research Rachel deals with different aspects of city and transportation development. She is involved in studies concerning the development of an optimized city form, the influence of long term decisions on people’s activity patterns, the influence of the neighborhood-form on children walking to school and more. She wrote several papers on these subjects. In addition Rachel is the vice chairman of the Israeli planning association. In that position, among other things, she has organized several Israeli conferences on urban planning. Rachel is involved also in teaching in several institutes in Israel, for example, the Technion and the Ben-Gurion University.

Theo Arentze
Technical University Eindhoven
Ph.D in Decision Support Systems for urban planning
T.A.Arentze@tue.nl

Theo Arentze received his Ph.D in Decision Support Systems for urban planning from the Eindhoven University of Technology. He is now an Associate Professor at the Urban Planning Group at the same university. His research interests include activity-based modelling, discrete choice modelling, agent-based modelling, knowledge discovery and learning-based systems, and decision support systems for applications in transportation research, urban planning and consumer research.

Other authors:
Harry Timmermans

Harry Timmermans holds a PhD degree in Geography/Urban and Regional Planning. He studied at the Catholic University of Nijmegen, The Netherlands. Since 1976 he is affiliated with the Faculty of Architecture, Building and Planning of the Eindhoven University.
In this paper we propose a clear methodology for assessing the impact that would produce the introduction of a new transport infrastructure in an urban road network. This, with the idea to prioritize its construction against other infrastructure proposals. Impact assessment is based on weighted analysis of the following variables: Global Media Accessibility, Average displacement time, Vehicle volumes, Volume/Capacity ratio, Accident rates, Surrounding land uses and Construction budget. The proposed methodology was applied in the formulation of the mobility plan of the city of Manizales (Colombia) in 2011.

Initially, we perform a diagnosis of urban mobility from the physical and operational point of view. Establishing in this way a starting point for comparison of impacts. Subsequently, we sectorize and classify the road infrastructure projects proposed by the Municipality. Finally, after applying the weighted multi-criteria assessment, we get the order from highest to lowest impact for each project package. Hence, allowing programs to prioritize infrastructure works essential for the city with respect to mentioned variables.

Manizales have 620 Kilometers of street networks 50% of which have parameter inclination exceeding 8%. The current mobility plan considers an intervention of 122 kilometers for streets, 107 kilometers for bicycles and 180 kilometers for pedestrians. Likewise it outlines 18 acting schemes, driver values, mobility laboratories and public transport proactive restructuring. An analysis of projected 122 kilometers projects for seven street infrastructures, 20% of the existing street structure, is presented to show the estimated impact in terms of the average time of trip reduction comparing them with demographic variables (area, population and number of households covered by the isochronous curves).

The proposed methodology is applicable to other cities, whatever their size, provided that they have the most updated geo-referenced street network data, operating speed records, social and accident statistics. Geostatistical techniques are employed for territorial accessibility analysis.

The outcomes demonstrate that not always major works should have the highest priority, from the point of view that this depends not only the impact on operational variables, but also the impact on social and public health variables (which are typically not taken into account in the plans implemented in Colombian cities) are crucial.

**Diego alexander ESCOBAR**
NATIONAL UNIVERSITY OF COLOMBIA
Villamaria Colombia
DIRECTOR OF CIVIL ENGINEERING PROGRAM
daescobarga@unal.edu.co

Civil Engineer and Doctor of Land Management and Transport Infrastructure (2008, UPC- Spain). He has been professor and researcher at the National University of Colombia since 2001, currently is the Director of the Academic Working Group on Roads, Transport and Geotechnics. He has spoken at various events both nationally and internationally and has served as a consultant and advisor on issues related to transport infrastructure.

**FRANCISCO GARCIA**
NATIONAL UNIVERSITY OF COLOMBIA
Manizales Colombia
Coordinator of specialization in Roads and Transport
fjgarciaor@unal.edu.co

Civil Engineer and Doctor of Engineering of National University of Colombia, where he is professor and researcher since 1992. Currently is the Coordinator of specialization in Roads and Transport and is part of the Academic Working Group on Roads, Transport and Geotechnics. He has participated in several outreach projects developed by the National University of Colombia . Professor at various universities, and speaker at various events both nationally and internationally.
3 - THE CHOICE OF MODE OF TRANSPORT TO BE DEPLOYED AND THE MANAGEMENT OF INTER-MODALITY

3A - MASS RAPID TRANSIT SYSTEMS: LESSONS STILL TO BE LEARNT

3B - TRANSPORT POLICY: DEALING WITH PRACTICAL IMPLICATIONS

3C - THE PLACE AND THE ROLE OF THE PARA-TRANSIT SECTOR IN MOBILITY STRATEGIES

3D - INTEGRATION OF PARA-TRANSIT SECTOR IN MOBILITY STRATEGIES
La réforme des transports urbains à Abidjan intervenue en 2000, avec la création de l’AGETU en qualité d’Autorité Organisatrice des Transports Urbains, était une réponse à un certain nombre de dysfonctionnements majeurs qui plombaient le développement durable du secteur, notamment :

- une fragmentation institutionnelle qui ne permettait pas d’avoir une vision cohérente dans les prises de décision et dans la formulation des politiques en matière de transports urbains ;
- une désorganisation du secteur, facteur d’une faible productivité et d’une qualité ou d’un niveau de service médiocre des transports urbains et des coûts externes importants (insécurité routière, embouteillages, pollution de l’air, etc.)

La présente communication se veut un regard critique, 10 ans après la mise en place de la réforme, sur les résultats atteints avec la mise en puissance en 2005 de l’AGETU qui avait notamment pour missions d’assurer la régulation du marché des transports urbains.

En effet, les activités de régulation du marché des transports urbains dans l’agglomération abidjanaise sont assurées depuis 2005 par l’AGETU avec des résultats mitigés. Ses missions sont régulièrement contestées par les collectivités territoriales de son périmètre de compétences et ses difficultés financières limitent sa marge de manœuvre sur le terrain.

Ainsi, notre communication vise à faire un bilan diagnostic de la réforme des transports urbains dans l’agglomération abidjanaise et à proposer des pistes de solutions aux dysfonctionnements constatés. Cette analyse s’appuie sur l’analyse des documents produits sur le sujet et l’observation des situations existantes par des enquêtes sur le terrain.

Nous terminons la communication par des propositions qui seront faites au plan institutionnel, réglementaire, opérationnel, économique et financier.

Yaoodefroy Konan
AGENTU
Directeur des Etudes et de la Prospective
Cote d’Ivoire
godefroykonan@yahoo.fr


Il est, depuis 2002, le Directeur des Etudes et de la Prospective de l’AGETU chargé notamment de la conduite des études et projets de développement de la mobilité urbaine à Abidjan.


Il a produit des publications sur les indicateurs des transports urbains et, a régulièrement participé à des séminaires organisés par l’ENPC et le Collège de Polytechnique de Paris ainsi qu’aux rencontres de l’UATP et de l’UITP. Depuis 2004, il est donneur de sang bénévole avec 32 dons de poche de sang total à son actif.
3A - MASS RAPID TRANSIT SYSTEMS: LESSONS STILL TO BE LEARNT

URBAN MOBILITY: ISSUES AND CHALLENGES OF BRT IN LAGOS METROPOLIS

Access to efficient public transport is one of the major mobility challenges currently being experienced by commuters and residents in Lagos metropolis. Consequently, commuters face challenges of commuting between homes and places of work, schools, markets, social gathering, and recreational centres among others. Movements are characterized by loss of valuable man-hour, due to traffic congestion, resulting from friction or conflict of vehicular movement with its attendant socio-economic and environmental externalities. To address these shortcomings, the Lagos State government in line with other developed and developing countries launched the Lagos Bus Rapid Transit (BRT)-Lite operation on 17th March, 2008; as a pragmatic step towards meeting public transport provision needs in Lagos metropolis along different corridors fig. 1.1 refers. This is in line with other notable cities of the world that have embraced the same system, such as Curitiba, Brazil; Bogota, Columbia; Mexico city, Mexico; Istanbul, Turkey; Ahmedabad, India; just to mention a few. These cities have key-in into the benefits provided by BRTs systems, which includes low cost of operation, high operational speed advantage, attractive system for cash-trapped city budgets, rapid implementation and high performance BRTs with significant positive externalities, majorly in the area of high carrying capacity, reduction in environmental pollution and travel time among others. In spite of these aforementioned advantages, the Lagos Bus Rapid Transit (BRT)-Lite operation is critically bisected by a number of problems as revealed by an empirical study conducted based on simple random sampling techniques of data collection, which cut across the bus operation system, passengers’ socio-economic characteristics, including conduct of opinion poll of stakeholders. Research findings revealed that Lagos Bus Rapid Transit operation is not without its own deficiencies, which includes lopsided operational nature of BRT-Lite services, use of low capacity and unattractive buses, single lane operational arrangement, lack of operational time-table or schedule, congestion and queue-up of BRT buses and passengers alike at bus shelters, among others. The paper considers the need for BRT-Lite operation in Lagos to be extended to other corridors and coordinated with other modes of transport, essentially the rail and water transport systems, for a meaningful holistic approach to public transport operation in Lagos metropolis. Besides, the bus-time scheduling, ticketing and routing should equally be harmonized for efficiency; while training and retraining of staffers should be considered as key to the success of Lagos BRT-Lite operation activities among other recommendations.

Abubakar Mobolaji OLASENI
Yaba College of Technology
lagn
New York
juwonjimba2001@yahoo.c

Dr. Olaseni, town planner and transport expert holds PhD in Transport Systems Planning and Management. Fellow of Erasmus University (IHS) Rotterdam, Netherlands, Graduate of Technology Management, Galilee International Management Institute-(GIMI) Israel and Harvard Extension School on Management of Higher Education Institution. Participant in World Urban Forum, a member of the Nigerian Institute of Town Planners and Chartered Institute of Logistics and Transport. Co-founder Vistaplan consulting (a planning firm) and participant in SAPI conference, 2010

Kola Oladele Olayiwola
Yaba College of Technology
urban planner, transportation expert
lagos
Nigeria
kolakemiolayiwola1@yahoo.com

Kola Oladele Olayiwola, urban planner, transportation expert and a doctoral candidate (University of KwaZulu-Natal, Durban, South Africa) lectures at the Department of Urban and Regional Planning, Yaba College of Technology. A member of Nigerian Institute of Town Planners, and a registered Town Planner, and founder Kola Olayiwola & Company (a planning firm).

Other authors: Mr. Oladij pupo Fashuna FASHINA
Addis Ababa, capital city of Ethiopia, is currently facing rapid urbanization and high population growth. Overall population is expected to grow from 3.2 million to 5.5 million inhabitants by 2020 and reach double figures within the next two decades. Car ownership is still significantly low in Addis Ababa, though rapidly increasing mainly due to economic growth and the introduction of low cost private vehicles into the local market. Non-motorised transport, and particularly walking, still dominates the modal split for daily trips in Addis Ababa with an approximate 62% of total trips, whereas public transport service is not adequate to accommodate the respective demand.

As a response, the city government of Addis Ababa has recently adopted a city-wide transport plan in order to modernize public transport, support the use of non motorized transport and tackle the congestion that is generated from the increasing use of private vehicles. The current transport plan includes the construction of seven BRT (Bus Rapid Transit) and two LRT (Light Rail Transport) corridors, as well as improvements in pedestrian facilities, non motorized transport and parking management. This paper analyses the institutional, technical and performance improvements towards the implementation of the respective transport plan in Addis Ababa and also attempts an evaluation of the BRT demonstration corridor (Meskel square to Kaliti) in order to provide examples of full BRT implementation. The evaluation takes into consideration aspects such as BRT infrastructure, accessibility, road safety, operational efficiency, traffic and parking management, and integration of non-motorized transport features.

Taking as an example the BRT demonstration corridor, the paper results in a series of recommendations to improve and upgrade the BRT demonstration corridor to a full BRT, aiming to tailor BRT concepts according to the particular characteristics of Addis Ababa and provide adequate references for future BRT implementations. The recommendations highlight improvements that are applicable not only to Addis but also to other BRT systems being developed in Africa and elsewhere.

Yorgos Voukas is a senior consultant at TRL. He is an economist with post-graduate studies in Environmental Science and he has 10 years of experience in sustainable transportation and mobility. He has worked the past 5 ½ years in Mexico and Latin America for the World Resources Institute, focusing on the development of Bus Rapid Transit projects, capacity building for public transport authorities and development of sustainable transportation policies at national and local level. Since September 2011, he is responsible for the technical work of TRL in respect to mass rapid transit projects, such as the GEF-SUSTRAN programme for sustainable transportation in East Africa. In previous work Yorgos Voukas was involved to the Athens 2004 Olympic Games, developing the transport operational plans and Olympic transport infrastructure of the games. He has worked as a consultant in various projects, developing an expertise at the fields of public transport, road safety, public transport infrastructure, transport demand management, as well as mobility indicators and public policy for sustainable transportation. As a consultant, Yorgos has been leading or coordinating sustainable transportation programmes, and successfully implemented several projects, promoting collaborations among diverse teams of professionals and international institutions. He has participated in business assignments and international congresses at Mexico, USA, Canada, Panama, Colombia, Venezuela, Brazil, Chile, Argentina, France, South Africa and Ethiopia and he has been a member of the executive committee of the first Mobility Observatory for Latin America (Andean Financial Corporation) and the technical committee for Road Safety in Mexico (Pan-American Health Organization).

Derek Palmer is a qualified transport planner and economist with nearly 40 years experience. He has a thorough appreciation of the public policy issues confronting both local and national government. Having an holistic understanding of transport means that he is able to view issues within the wider context. As a consultant he has led a wide variety of transport projects; clients have included both central and local governments in the UK and overseas. He has appeared as an expert witness before Select Committees of both UK Houses of Parliament. In addition to having a very good knowledge of the technical aspects of sustainable transport, a particular strength is his understanding of the political environment in which decisions are undertaken and the ability to develop appropriate solutions and strategies. Derek is a member of the Technical Committee of CODATU and is currently working on projects in Ethiopia, Nigeria and Tanzania.
THE INTERFACE BETWEEN TRUNK AND FEEDER SERVICES: LESSONS FROM SOUTH AMERICAN CITIES

Many cities in the developing world are engaged in efforts to reconfigure their public transport systems and improve qualities of service. With notable South American exceptions, a characteristic shared by these cities is heavy reliance on paratransit services, which are often poorly regulated and operated as informal businesses. Current projects and initiatives aimed at transforming public transport systems, more often than not, ignore or downplay the role of paratransit services. While clearly beset by a variety of problems associated poor regulatory frameworks and destructive competition, it has been argued that the intrinsic characteristics of paratransit operations offer important advantages in terms of adaptability to the changing urban structures of contemporary developing world cities and of service innovation, and that attempts to eradicate them may be neither pragmatic nor strategic.

This paper will report upon an analysis of selected contemporary bus rapid transit projects in South American cities that include a trunk and feeder scheme involving large and small vehicles, some of which have continued to operate as paratransit services. Its main focus will be on the role of the feeder element in this scheme. Case analysis will consist of two main parts. First, descriptions of the areas served by feeder buses (strictly residential, mixed land use, main activity inner zones, etc.) and of the typology of feeder routes (loop, single road, etc.) will be presented. This will be complemented by an investigation of observable change, if any, in the urban structure of areas served by feeder buses and how services have reacted to them. Second, with regard to the choice of a trunk and feeder scheme, a study of the prevailing regulatory frameworks leading to this option, and its outcome, will be carried out. It will be argued that local conditions and constraints can help explain the choice of trunk and feeder arrangement.

The paper will draw lessons from the selected cases with regard to the strengths and weaknesses of alternative trunk and feeder arrangements, and to possible roles for paratransit services. With regard to the latter, three alternatives for the inclusion of paratransit services in a trunk and feeder scheme will be identified: (1) area licensing; (2) reward mechanisms; and (3) concessions. It will be argued that the acknowledgement and inclusion of paratransit services under any one of the three alternatives can, if appropriately implemented, lead to a complementary planned – paratransit service relationship that takes account of path dependencies in developing world cities.

Pablo Salazar Ferro is a PhD Candidate in the Centre for Transport Studies (CfTS) of the University of Cape Town (UCT). He has a Master Degree in Urbanism from the Universidad Nacional (UNAL), in Colombia, and a Master Degree in City and Mobility from the Institut d’Urbanisme de Paris (IUP) and the Ecole Nationale de Ponts et Chaussées (ENPC), in France. His research interests are the role of transport networks in the development and in the structure of cities and the historical evolution of the relationship between urban form and transport. His current research is focused on the interface between planned and paratransit modes in developing world cities.

Juan Carlos Muñoz is Associate Professor of Transport Engineering and Logistics at the Pontificia Universidad Catolica de Chile and director of the Across Latitudes and Cultures Bus Rapid Transit Centre of Excellence (www.brt.cl). He received his Ph.D. in Civil and Environmental Engineering University of California at Berkeley in 2002 and MSc in Industrial Engineering and Operations Research from the same university in 2001. His research areas include transportation networks, traffic, logistics and public transport. He also focuses on the design of flexible work shifts for drivers of public transport and retail workers. From 2003 and 2004, Juan Carlos served as advisor to the Minister of Transport and Telecommunications for the Transantiago plan. For three years he acted as a member of the Board of the Valparaiso Metro. He is currently a member of the Editorial Advisory Board of the journal Transportation Research Part B.
BRT IN METRO DHAKA: TOWARDS ACHIEVING A SUSTAINABLE URBAN PUBLIC TRANSPORT SYSTEM

Dhaka the capital city of Bangladesh and the centre of its administrative, cultural and commercial activities has been growing at astonishing levels since the independence of the country in 1971. This capital city, having an area of 1528 square kilometer (approximate) has a present population of 15 million, which is expected to become around 30 million by 2030.

Dhaka has a rudimentary public transport system comprising cycle rickshaws, para-transit, taxis and buses. The rapid rise in population along with increased and versatile urban land use patterns have generated considerable travel demand as well as numerous transport problems in the city. Moreover the capacity of the road is significantly reduced by poor operating conditions, inadequate traffic management and efficient road use. On the other hand, the number of privately owned cars increases day by day because of undeveloped public transport system and lack of door to door service within public transport network. As a result major share of road space remains occupied by small capacity vehicles. Buses being the only mode of mass transit available in Dhaka they carry about 1.9 million passengers per day. It is also observed that the share of mass transit is very low which is only 27 percent of vehicular trips where walking and other non-motorized travels still remain as the dominant travel mode.

Existing transport system of Dhaka city is almost unable to meet the increasing travel demand mostly because of unplanned urbanization, poor transportation planning and lack of public transport. Considering the worsening congestion and deterioration in accessibility, level of service, comfort, safety and operational efficiency, it is high time to introduce Bus Rapid Transit (BRT). For achieving sustainable urban transport in Dhaka, Strategic Transport Plan (STP, 2005) suggested the development of six major corridors as mass transit routes. Among them BRT as well as BRT line-3 is thought to be potentially suitable. It will start from Uttara and end to Sadarghat covering about 21.7 Kilometer road. In this paper an attempt has been made to envisage the present scenario of public transportation system in terms of the key issues, characteristics and improvement options. In particular the paper discusses the potential of introducing BRT in Dhaka metro city and restructuring of existing bus network to cater for ever increasing public transport demand towards alleviation of congestion level and achieving a sustainable urban public transport system.

Md. Mazharul HOQUE
Bangladesh University of Engineering and Technology (BUET)
Professor, Department of Civil Engineering
Dhaka
Bangladesh
dirarc@gmail.com

Dr. Mohammed Mazharul Hoque is a Professor of the Department of Civil Engineering and Founding Director, Accident Research Institute, Bangladesh University of Engineering and Technology (BUET), Dhaka. He graduated from the same university in 1975 with a degree of B.Sc Eng (Civil) and subsequently obtained the degrees of M. Eng and Ph.D. from the Asian Institute of Technology and Monash University, respectively. He authored over 200 papers internationally in the road safety and traffic engineering areas. Professor Hoque played a pioneering role in road traffic safety research in Bangladesh, Australia and Thailand.

In 1994 he was an invited faculty at the Indian Institute of technology, New Delhi. During 1996-1997 Professor Hoque spent his sabbatical leave at the Transportation Research Group, Department of Civil and Environmental Engineering, University of Southampton, UK under the Commonwealth Fellowship program. He was a member of the International Steering Committee for the ADB/UN-ESCAP initiated road safety project. He was also the Chair of Organising and Scientific committees of Internation Conference on Road Safety in Developing Countries-2006 in Dhaka.

Professor Hoque had acted as Head of the Department of civil Engineering, BUET and as a member of the National Road Safety Council in Bangladesh. He is playing central role towards promoting UN endorsed Decade of Action for Road Safety in Bangladesh with active collaboration of FIA Foundation and International Road Assessment Program (IRAP) UK.
Dr. Hasib Mohammed Ahsan at present is the Director of the Accident Research Institute at Bangladesh University of Engineering and Technology (BUET), Dhaka. He is also a Professor in the Department of Civil Engineering, BUET. After graduating from this university in 1987 with a degree of B.Sc.Engg (Civil), he joined the department of Civil Engineering in the university as a lecturer. He obtained the degree of M.Sc.Engg in Transportation Engineering from the same university in 1990 and within a short time became Assistant Professor. Dr. Ahsan then went to Japan with a Japanese government scholarship and subsequently obtained his D.Eng degree from the University of Tokyo in 1994 for studied on integrated systems for evaluation of transportation projects. He became Associate Professor in 1997 and joined as Professor in June 2003. He spent six months in the University of Leeds, UK for post doctoral research. His interests cover a range of traffic and transport areas, such as integrated transport planning and economics, public transport, traffic safety and management, and application of remote sensing and GIS in these areas. He authored several papers in related areas. He also worked as consultant/expert in various national projects through BUET.

Other authors:  
Mr. Sudip Barua  
Mr. Dhrubo Alam
Efficient public transport is important for meeting mobility needs in a rapidly growing economy in India. A higher share of public transport would also reduce emissions and energy demand. Hence, it is important to identify policy variables that could significantly influence public transport demand. This influence can be characterized using the demand elasticity. This research has estimated static and dynamic log linear demand functions for public transport using a panel of Indian cities over 1990-2011. Transit fare is significant and inelastic with respect to transit demand. Service quality, approximated by the density of the coverage of the transport service, is the most important policy variable that affects demand, and can be a key lever for increasing the share of public transport, even more so than bus fares. Finally, social and demographic variables highlight the complex nature of public bus transit demand in India.

Trained as an applied economist, Kaushik Deb has undertaken several assignments covering a variety of infrastructure sectors, focusing on the policy interventions to correct market failures in the overall context of liberalization of the economy. His experience includes sector restructuring studies in the transport and water sector, energy-environment-economy modeling, the use of green fiscal measures to meet environmental goals, and pricing reforms in basic service provisioning. He has worked closely with several municipal, state, and national level agencies in this sector advising them on policy and operational issues related to organizational and sector restructuring, both as a consultant as well as while serving on subject specific committees set up by various government departments. With as a Doctor of Sciences from the ETH, Zurich, he guided and implemented research in applied economics in TERI University. He also was the Programme Director of the MBA Programmes in the University. His current portfolio includes policy research and advocacy on infrastructure and environmental economics issues at IDFC.

Massimo Filippini is a Professor of Economics at the Department of Management, Technology, and Economics, ETH, Zurich, Switzerland and at the Università della Svizera Italiana, Lugano, Switzerland. He has trained in economics at the University of Zürich and at Harvard University, and has an extensive research and publication record in energy, transport, health, and environmental economics. He is on the editorial panels of several journals and on a number of scientific committees.
Public transport systems in contemporary African cities are heavily reliant upon paratransit services, which are often poorly regulated and operated as informal businesses. Some African cities have initiated public transport transformation projects which ultimately envisage the, albeit phased, comprehensive replacement of paratransit operations with formalised bus rapid transport systems. The prospect of achieving the ambitious objective of comprehensive paratransit replacement in the short- to medium-term appears remote however. More likely outcomes are hybrid systems that include both planned and paratransit services. Policies that recognise paratransit operators, and seek complementarity with formalised planned services, will arguably produce greater benefits than policies that ignore their continued existence.

One way of integrating paratransit services with formalised planned services in public transport system transformation projects is through trunk-and-feeder service arrangements. In such arrangements the transport authority concentrates on providing or contracting a high capacity trunk service using large vehicles on corridors with the requisite passenger demand, while paratransit operators provide feeder and distribution services using smaller vehicles in adjacent areas. Anecdotal evidence suggests that some paratransit operators at least may resist such system restructuring on the basis of a perception that operating feeder and distribution services is less lucrative than operating line-haul services.

Following a review of similar published studies, this paper will explore the veracity of this perception, through a public transport cost model. The modelling procedure will use operating and cost parameters, currently applicable in Cape Town (many of which may be transferable to similar contexts elsewhere), to investigate the consequences of changing line-haul paratransit services to services where paratransit feeds and distributes passengers transferring to and from large bus trunk services. Consequences with respect to costs and revenues for both paratransit operators and the transport authority will be explored. Operating parameters will include operating speeds, vehicle capacity, way capacity, passenger volume and distribution over the day. Cost parameters will include the capital cost of vehicles, ways, stops, termini and depots, and the operating costs of vehicles including labour and fuel. The analysis will be applied to a range of route lengths, vehicle capacities and passenger densities to identify circumstances where trunk-and-feeder arrangements could be more favourable than conventional uncoordinated line-haul paratransit operations. The modelling results and their limitations will be presented, and their implications discussed.

Romano Del Mistro is an Associate Professor in the Department of Civil Engineering (University of Cape Town), convenor of a postgraduate programme in Urban Infrastructure Design and Management and the Manager of the Southern Transport Centre of Development. He obtained a BSc Civil Engineering from UCT in 1969, a postgraduate diploma in Transport Engineering from the IHT (London) and a PhD in town and regional planning from the University of Pretoria in 1989. His current research activities relate to the potential to restructure urban areas to reduce motorised travel and modelling public transport costs.

Roger Behrens is an Associate Professor in the Department of Civil Engineering (University of Cape Town), Director of the Centre for Transport Studies (CTS), and Director of the African Centre of Excellence for Studies in Public and Non-motorised Transport (ACE). He graduated with a Master Degree in City and Regional Planning (with distinction) from UCT in 1991 and with a PhD degree in 2002. His current research activities relate to three fields. The first is the regulation and improvement of paratransit, and its interface with integrated, planned public transport systems. The second is the analysis of the dynamics of changing travel behaviour, and the implications this has for the management of travel demand. A third is the analysis of the use of transport systems by pedestrians and the quality of pedestrian infrastructure and environments, and the identification of frameworks through which improvements can be made.
In an effort to reduce many of the adverse impacts of the car and promote sustainable transport alternatives in Latin America, a number of local and regional governments have either implemented travel demand management policies or have considered ways of directly reducing the number of private vehicles in congested areas. Governments have found that while it is necessary to provide some urban road infrastructure for the movement of goods and services, it is also important to make efficient use of existing infrastructure when designing mobility programmes and promoting alternative modes to the private vehicle, especially in lower density communities. While a limited set of demand management measures have been introduced and promoted in Latin America, no congestion pricing programmes have been implemented there. Thus far, demand management measures in Latin America have primarily focused on the integration and promotion of public transport modes, the provision and/or enhancement of bicycle paths and exclusive lanes, such as those of Bogotá and Buenos Aires; and the widespread application of vehicular restrictions in major cities of the region (e.g., Bogota’s “Pico y Placa” programme).

This paper begins with a brief overview of travel demand management, including its principal aims and its primary objectives within the Latin American context. It reviews past governmental efforts to promote traffic restraint in four major Latina American cities, and based on road pricing experiences in London and Stockholm, discusses prospects for developing congestion pricing schemes in both São Paulo and Santiago, i.e., cities that have focused efforts on developing sustainable transport strategies that can effectively achieve the broader objective of greater access for all. Next, it examines the potential role of congestion pricing as a demand management tool for controlling the ingress and egress of private vehicles into central areas, and reducing corresponding congestion and pollution levels. While congestion pricing is often cited as one of the most effective demand management measures in the industrialised world, a number of barriers currently prevent it from being widely adopted in Latin America and other regions of the developing world. This paper concludes that it is essential that local governments and programme planners coordinate with public sector agencies, transport experts and the general public to ensure that local issues are taken into account. This process can inform planners as they explore the various alternatives for implementing a programme within an established set of constraints.

Charles R. Rivasplata, Ph.D. is a Lecturer in the Urban and Regional Planning Department at San Jose State University, where he teaches transport planning courses. He also teaches a course on comparative topics in international transport at the University of California (UC) - Berkeley, and in the past, has taught courses on transport policy at Cambridge University; and mobility management at the Central University of Venezuela. At the San Francisco Municipal Transportation Agency (SFMTA), he is employed as a Senior Transport Planner, charged with promoting the use of alternative travel modes. Dr. Rivasplata has written on numerous topics, including public transport privatization/deregulation, minibus competition in South Africa, mobility management strategies and transport system integration. He received dual master’s degrees in Civil Engineering and City Planning at UC-Berkeley, and a Ph.D. at UC-Davis. His dissertation focused on the impacts of Labour Party reforms on transport in the U.K.
DEVELOPMENT OF A LOCALISED SUSTAINABILITY SCORE FOR SCREENING URBAN TRANSPORTATION PROJECTS IN DEVELOPING COUNTRIES: A CASE STUDY OF ACCRA, GHANA

A framework is proposed for screening urban transport projects in developing countries to reflect local qualitative sustainable transport criteria. The framework is developed via a case study in Accra, Ghana. Relevant criteria are identified via interaction with local transport system providers/experts. Individual transport system users were interviewed to ascertain their perceptions regarding sixteen urban transport-related criteria. Local system providers/experts were interviewed about the potential impact local transport projects might have on the sixteen criteria. The system user and system provider/input was evaluated through a Multi-criteria Analysis to produce a term defined as the Localised Sustainability Score (LSS). The LSS can then be used to produce a relative ranking of potential projects, for use as a decision support for project screening and selection.

The LSS was determined for five projects in Accra. Two of the projects were proposed roadway projects, two were proposed Bus Rapid Transit (BRT) projects and the fifth was a recently completed Non-motorized Transport (NMT) project. The relative LSS for each project was compared with relative rankings the projects received in separate previous evaluation studies conducted using conventional, quantitative data intensive methods. The LSS framework reflected the relative project ranking/priorities from the previous studies but allowed for a qualitative comparison among the different modes represented. In addition to project screening, the framework provides a means of documenting system user input. The framework can be used to document how urban transport projects address the needs and concerns of different demographic groups (age, gender, income, etc.) of system users.

The framework is presented as a participatory process by which indigenous knowledge from local system users can be integrated with the scientific knowledge of the system providers/experts. In addition to the case study, a conceptual argument for the applicability of such knowledge integration for transport planning in developing countries is presented.

Steven JONES
University of Alabama
Associate Professor
Tuscaloosa, United States
sjones@eng.ua.edu

Steven Jones is an Associate Professor of civil engineering at the University of Alabama where he is the Study Abroad advisor and is interested in developing international collaborations. He has some nineteen years experience in transport engineering and planning, spanning public service, private consulting and academic teaching/research. He has conducted numerous traffic operational analyses, traffic signal designs, transport impact assessments and corridor studies. He has been involved with transport projects in the U.S., Europe, Africa and Asia. He holds B.S. and M.S. degrees in civil engineering from Auburn University and a PhD in civil engineering from the University of Virginia. He is active in the Transportation Research Board, the Transportation and Development Institute and the Institute of Transportation Engineers.

Moses Tefe
University of Alabama
PhD Candidate
Tuscaloosa, United States
mktefe@crimson.ua.edu

Moses Tefe is pursuing his PhD in civil engineering at the University of Alabama. He is a native of Ghana. He has extensive experience working on a range of transport projects in Africa. He has a Masters degree in Urban Infrastructure Engineering and Management from the UNESCO-IHE, Delft, the Netherlands and a Bachelor of Science in Civil Engineering from the University of Science and Technology, Kumasi, Ghana. He is a past president of the University of Alabama student chapter of the Institute of Transportation Engineers and a recipient of a National Science Foundation fellowship in sustainability education and research.
Les mobilités urbaines dans les pays du sud présentent des caractères difficiles à appréhender avec les référentiels d’analyse des pays du nord. Au-delà de la complexité propre à tout système de mobilités d’individus, les métropoles du sud présentent des logiques de fonctionnement qui leur sont propres. [Godard, 2002]

Nous analysons ici les organisations spécifiques et les principes d’émergence des systèmes de transports en commun d’une ville du sud à travers une approche spatiale. Cette étude porte plus spécifiquement sur les transports collectifs à Brazzaville à différentes échelles.

Le système de transports en commun brazzavilois présente la spécificité de ne connaître ni régulation centralisée ni coordination partielle. Quand on arrive pour la première fois à Brazzaville, on est frappé par la profusion des moyens de transport collectif ; bus, minibus, taxis collectifs... tous ces véhicules semblent évoluter sans la moindre indication pour l’usager.

Cependant, à l’étude, différentes stratégies de déplacement ont pu être mises en avant. On montre ainsi que les mobilités liées aux transports collectifs s’effectuent selon trois modes spécifiques :
- Les bus (coaster) traversent littéralement la ville de part en part, et utilisent les mêmes infrastructures que les minibus.
- Les minibus (hiace) évoluent en fonction de la demande des usagers sans posséder de destination prédéfinie. À l’arrivée d’un véhicule, son contrôleur annonce une destination éloignée de 3 ou 4 quartiers pouvant changer en fonction de la demande immédiate.
- Les taxis collectifs (100-100), quant à eux, évoluent en boucles fermées autour d’un quartier ou servent de raccord entre deux axes importants.

Une enquête a été menée pour décrire les pérégrinations de chaque type de véhicule, en fonction des lieux et horaires de passage. L’analyse de ces données nous a permis de comprendre les stratégies globales et individuelles des acteurs de ce système de transport. Nous avons ainsi mis au jour de véritables organisations spatiales, spécifiques à chaque échelle considérée.

On observe donc que les différents modes de transport en commun, au lieu de se concurrencer, ont réussi à faire émerger un équilibre, voire une certaine complémentarité. Ici, la défaillance institutionnelle [Ngodi, 2008], en laissant le champ libre à l’initiative individuelle, a permis la création d’un système auto organisé très efficace, bien que présentant des carences parfois fortes du point de vue spatial.

Frédéric Audard est Maître de Conférences au sein de l’UFR des Sciences Géographiques et de l’aménagement de l’Université d’Aix-Marseille dont il a été directeur. Il dirige le aujourd’hui le master Structures et Dynamiques Spatiales de l’Université d’Aix-Marseille. Spécialiste des transports et des questions de mobilité, il a travaillé au cours de son doctorat sur les questions de prévisions de trafic et les modèles spatiaux de mobilité. Il s’est par la suite intéressé aux systèmes de transport urbain auto-organisés dans les métropoles du sud (Bangkok, Lima, Brazzaville...). L’objectif global de ces travaux est de cerner au mieux les principes d’émergences de systèmes de transport en commun auto-organisés et issus d’initiatives individuelles. Ainsi, des principes d’optimisation d’organisation des mobilités peuvent émerger et fournir une aide à la décision concernant les politiques publiques.

Joan Perez est doctorant au sein de l’UMR 6012 ESPACE et réalise une thèse intitulée "Les nouveaux enjeux de la mobilité dans les villes de second rang des pays émergents". Other authors : Mr. Alexandre Grondeau
The ways of craft production Paratransit or Urban Public Transportation remain the preponderant world. In Asia, Africa and Latin America are the rule rather than the exception. Two great movements of expansion took place in the world this way: in former socialist republics of Asia, state enterprises have been replaced by craft Paratransit and Brazil, where they were meaningless, which emerged strongly in the 90s.

Different authors described the existence of this kind of transport system in different continents. This service model is marked by a world-wide technological diversity, diversity of service delivery and operation, different regulations in each region or country and even different shapes within the same region.

The loss of productivity of incumbents and the globalization process have been highlighted as the main factors to explain the increased present in this segment of the public transportation sector. But not only the inefficiencies of the traditional and new market conjunctures take advantage of these new operators to consolidate and expand their services.

Under the cloak of informal or in a craft way, lies Just one way of organizing production. However, these operators have different ways of organizing production.

The unique and functional aspects of its operation also explain its insertion in the urban transport market in the world. The strong relationships with regional geographical and social-economic aspects are interfering in the process of choice for users and bringing new Standards of operation and production in the sector of urban transport. Regardless of these reasons, craft Paratransit operators and local government are challenged to propose and build new ones.

The aim in this research is not to examine the actions from the public government, but try to understand the different ways of producing and extracting lessons learned from the comparison of different forms of production organization of urban public transport services by individuals owners of small vehicles size.

The study focusses on two structures of productive organization: the Brazilian cooperatives of craft operators, with emphasis on a cooperative of Rio de Janeiro and GIE - Groupement d’Intérêts Économiques, a Darou Salam Transport of Dakar in Senegal. Through the study we can conclude that the increased productivity and improved service offered to the user is not related solely to the action of the operators building up organizations to support the production, there are also other factors and models that determine the effectiveness and quality of service offered.
INTEGRATING BUS RAPID TRANSIT (BRT) SYSTEMS WITH RICKSHAWS IN DEVELOPING CITIES: A CASE STUDY ON DHAKA CITY, BANGLADESH

Rickshaws are ‘green’ (fuel free) vehicle and playing a crucial role of transport in many developing cities by providing accessible mode for many people or in the narrow streets. However, many cities (i.e. Delhi, Manila, Jakarta) have tried to restrain rickshaws either for reducing congestion (smooth flow of motorized traffic) or enhance the city image. Instead of restricting, if planned properly rickshaws could play an important role as feeder service to formal public transport. Many cities both in the global North and South have implemented BRT systems, while others are planning to do so. Proper feeder services and convenient modal interchanges are crucial to maximize the benefits of BRT systems. Several modern BRT systems (i.e. Bogota, Guangzhou) have modal integration with bicycles; however, there is no BRT system which yet demonstrates integration with rickshaws.

Objectives of the research are: understand the cities if the rickshaws can serve as a feeder service of BRT systems and what type of design of BRT station could assist for such; study the understanding of stakeholders’ view and policymakers’ opinion about the design of BRT station for accommodating rickshaws and fare integration; and determine whether the design of BRT station would be transferable to other cities.

Empirical approach was followed with the case study on Dhaka City (Bangladesh) to fulfil the research purpose. A total of 11 focus group discussion (FGD) of different stakeholders in a form of participatory action research (PAR) and interviews of 25 key informants had been conducted during August 2011 to February 2012.

The paper will present the plan of BRT station prepared for integrating with rickshaws based on existing literature and good practices of BRT as well as local traffic and spatial context. Then it will discuss on understanding of the stakeholder’s view about the initial plan. Lastly, considering the stakeholder’s opinion the paper will provide final plan of BRT station and it’s transferability in other cities.

The research outcome could be helpful for other cities having rickshaws that have (or planning for) BRT systems. Moreover, the research provides learning for public involvement and stakeholder’s opinion in transport decision-making process. The methodology developed for this research is transferable to other cities having rickshaws. However, transferability of design may include consideration of issue like cultural aspects, availability of motorcycles or bicycles, policy towards NMT or public transport, etc.

M. Shafiq-ur RAHMAN
PhD Student
University of Leeds
Leeds
United Kingdom
shafiq_urp@yahoo.com

M. Shafiq-Ur Rahman is an Urban Planner specialized in Transport Planning. He is a Commonwealth Scholar from Bangladesh and now pursuing his PhD in the Institute for Transport Studies (ITS), University of Leeds, UK. Mr. Rahman achieved his Master of Transport Management (MTM) from the Sydney University, Australia and another MSc (Regional Development Management) jointly offered by the University of Dortmund, Germany and University of the Philippines. He received Bachelor of Urban & Rural Planning from Khulana University, Bangladesh. Mr. Rahman had been teaching in the Department of Urban & Regional Planning, Jahangirnagar University, Bangladesh from 2001. He is professional member of many national and international organizations. He had published more than 20 research papers in journals and international conference proceedings. His research interest is on urban public transport, traffic management, NMT, sustainable transport, and governance.

Paul Timms
Senior Research Fellow
University of Leeds
Leeds
United Kingdom
pmtimms@yahoo.co.uk

Paul Timms had been working as a Senior Research Fellow at ITS. He had wide experience of teaching and research on transport field.

Other authors:
Mr. Francis MONTGOMERY
The public transport services in Dar es Salaam city, which is the capital of Tanzania, is currently provided by about 5,000 licensed small capacity privately owned commuter minibuses (commonly known as ‘Daladalas’) and by about 27 minibuses owned by a public company. The service offered is generally poor and unsafe, lacking professionalism, efficiency, quality and safety for the commuters. Daladalas have also largely contributed to the increasing congestion in the city. These factors compelled the City Council to consider the introduction of a Bus Rapid Transit (BRT) system in the city named DART system, which is being implemented by Dar Rapid Transit Agency (DART). Due to the fast population growth in the city, the mass transit was considered to be the efficient and effective mode of transport that could provide a comprehensive transport system that ensures sustainable accessibility to socio-economic activities with minimum possible traffic congestion. The DART system is planned in six phases to cover the six major corridors/arterial roads in Dar es Salaam City. Phase 1 of the DART System, which is currently under construction, will cover about 21 km of the trunk route.

However, there is a need to plan on what to do with the Daladalas that will be affected by the implementation of the DART system and as much as possible facilitate for their integration into the system. The City is giving priority to the participation of existing operators in the system. The aim of this paper is to identify the challenges and opportunities for the Daladala operators to participate in the provision and operation of DART buses, which will form the basis on how best the existing Daladala owners can be integrated in the new system. The study is based on a review of the current financial, technical, managerial and organizational situation of the Daladalas.

David MFINANGA

University of Dar es Salaam

Dar es Salaam

Tanzania

mfinanga@udsm.ac.tz

David Mfinanga is an Associate Professor in the Department of Transportation and Geotechnical Engineering of the University of Dar es Salaam, and he is the University (of Dar es Salaam) Leader of the African Centre of Excellence for Studies in Public and Non-motorised Transport (ACET). He graduated with a B.Sc. in Engineering Degree (honours) from the University of Dar es Salaam in 1991, Master Degree in Civil Engineering from Miyazaki University in Japan in 1995 and a PhD degree from Kyushu University in Japan in 1998. His current research activities with regard to public transport are on the development of a model for the choice of appropriate/context based public transport systems for developing countries including BRT system.
## 3D - INTEGRATION OF PARA-TRANSIT SECTOR IN MOBILITY STRATEGIES

### RESPECTFULLY FORMALIZING THE INFORMAL: HOLISTIC STRATEGIES FOR INTEGRATED AND INTEGRATIVE URBAN MOBILITY SYSTEM FOR CITIES OF THE GLOBAL SOUTH

Insufficient or unadapted transportation offers are increasingly being recognized as a key issue affecting the future development of cities, threatening economic success and negatively influencing factors of social stability. This phenomenon, albeit globally observable, is of a particular relevance for rapidly emerging countries in the southern hemisphere, since underdeveloped mass transit infrastructure and a high degree of fragmentation in transportation offers have strong negative effects on both livability and productivity of metropolitan areas, a positive future development of which being critical for the welfare of entire nations. In the past, most approaches to the threat of urban gridlock have focused on the creation and expansion of mass transit, introducing BRT, Light and Heavy Rail lines and feeder buses. Despite their good standalone performance, a real breakthrough for efficient and sustainable urban mobility can only be obtained through coordinated interventions on micro-transportation issues: It is crucial to get away from the idea of phasing out informal transportation systems, rather focusing on measures for smartly upgrading them: Recognizing their essential value for daily operations of a city, understanding their organization and translating these insights into step-by-step upgrades. Analyzing the way current transportation offers work helps understand their underlying mechanisms, reflecting a social dimension. This is a step often bypassed in negligence, which frequently proves to turn into a strong handicap when designing solutions that are not understood or accepted by the market. Wellenhanced forms of informal mobility are ideally suited for helping provide attractive door-to-door transportation offers throughout urban areas: While making them both compatible with and complementary to mass transit, the progressive upgrading will result in social acceptance and cohesion, keeping successful structures in place, reflecting and mirroring cultural strengths and diversity while leveraging efficiency and safety, in a truly holistic approach to transportation reflecting technical and social feasibilities at the age of ubiquitous accessibility to low-cost smartphones.

From successfully legalized van transportation in Rio de Janeiro to CNG-operated auto rickshaws in India, from cable cars extending heavy rail access into hilly informal settlements in Medellín to shared-vehicle schemes in Switzerland, from lunchbox logistics in India to high-tech real-time flexibility in delivery van operations, from dynamic road pricing in Singapore to by-the-second coordinated rail operations in Japan, successful elements for solutions from around the world are presented, and suggestions for combining and truly integrating them developed. The novelty and strength of this approach is three-fold: In a highly user-centered approach, it combines high-tech approaches with non-conventional, yet efficient low-key solutions, it combines urban passenger and small cargo logistics wherever reasonable, and it suggests cost-efficient step-by-step upgrades instead of expensive, radical turnkey solutions. Ultimately, a toolbox for achieving integrated and systemic urban mobility is presented, recognizing that transportation and the lack of it, for most citizens, is directly related to and must not be disconnected form aspects of living in dignity, with the current practice of externalizing most of the social and economic costs to society no longer acceptable.

### Arnd N. BÄETZNER

**University of St.Gallen**

Zurich, Switzerland

*Cand. Ph.D.*, arnd@baetzner.ch

---

Arnd N. Bätzner has an educational background in piano, physics and railway engineering, holding a master's degree from ETH Zurich. In parallel to academic studies, he worked on optimization projects in the field of Swiss public transportation and in economic research for the investment banking division of Credit Suisse. Following a management traineeship in corporate strategy at Swiss International Air Lines and several years of consulting work for small and medium enterprises, he started a Ph.D. in International Business at the University of St.Gallen in 2011, focusing on the social and economic aspects of the way transportation systems affect the development of urban areas. In summer 2011, Arnd was a guest researcher at the SEC Future Cities Laboratory in Singapore. He is a non-executive director of the nationwide Swiss car-sharing operator Mobility and member of several committees of the Transportation Research Board of the National Academies (TRB).
À Dakar, au Sénégal, les taxis clandestins (appelés communément clandos) font partie intégrale de l’offre de transport. En banlieue, leur part de clients est importante, car le taux de motorisation y est plus faible, la densité de population est relativement élevée, tandis que l’offre de transport est moins dense (malgré le développement récent du réseau de minibus de l’AFTU) (cf. figure 1). En ville, ces taxis circulent soit sur les grands axes (ils se placent en concurrence); soit sur des trajets mal desservis par les autres modes (ils se placent alors en complémentarité). Le taxi clandestos se démarque par son bas prix (comparé à un taxi légal), son confort relatif (comparé aux bus), et sa rapidité de déplacement. Ce sont des taxis collectifs (fonctionnant souvent avec des taux de remplissage à 100 %) ce qui en fait leur particularité comparée aux autres taxis et aux taxis clandestins français.

En France, le transport à la demande (TAD) a connu un réel développement depuis 10 ans, et il est aujourd’hui reconnu comme une offre de transport alternative. Un transport à la demande est organisé par une autorité de transport, c’est un transport collectif (voiture ou minibus), qui circule seulement sur demande. Il existe plusieurs formes de TAD et certains d’entre eux sont optimisés en fonction de divers critères (coûts, temps de trajet, etc.) pour mieux s’adapter aux besoins de mobilité.

Cette contribution s’insère dans un projet de thèse. L’idée pressentie de la recherche est qu’il existe certaines similitudes fonctionnelles entre les transports artisanaux dakarois et les TAD français. L’objectif est de confronter à l’aide de simulations basées sur l’agent les principes de fonctionnement observés et d’évaluer leur efficacité en fonction de différents contextes de mobilité théoriques (cf. figure 2). Cet article se focalise sur les taxis clandestos, l’enjeu étant de révéler les points forts (taux de remplissage, adaptation aux besoins de mobilité, etc.), mais aussi les points faibles (sécurité, fiabilité, etc.). Grâce à cette analyse fonctionnelle, nous montrons qu’il est intéressant de confronter leur fonctionnement auto-organisé avec les TAD français. L’objectif étant d’améliorer l’efficacité des deux modes en fonction des contraintes sociétales. Nous proposons aussi des pistes de réflexion quant à la gestion de ces taxis par les autorités locales et à l’avenir de ce type de transport au sein du système de mobilité dakarois. La place des taxis clandestins étant aujourd’hui une question sensible pour les politiques de transport, notre contribution s’insère dans le troisième sous thème de l’appel à communication de CODATU XV.

Adrien LAMMOGLIA
UMR ESPACE 7300 CNRS
PhD Student
Please Select
adrien.lammoglia@etd.univ-avignon.fr

Roger FAYE
Ecole Supérieure Polytechnique de Dakar
Maitre de conférence
Please Select
roger.faye@ucad.edu.sn

Maitre de Conférences, École Supérieure Polytechnique (ESP), BP 5085 Dakar-Fann, SENEGAL
Directeur du Centre Universitaire de Recherche et d’Etude de la Mobilité (CUREM) de l’ESP
Co-directeur de Thèse

Other authors : Mr. Didier JOSSELIN
AN EVALUATION OF POLICY APPROACHES TO UPGRADING AND INTEGRATING PARATRANSIT IN AFRICAN URBAN PUBLIC TRANSPORT SYSTEMS: RESULTS OF A DELPHI SURVEY

Public transport systems in contemporary African cities are heavily reliant upon paratransit services. These services are typically poorly regulated by government agencies (although often subjected to relatively strong systems of self-regulation) and operated as informal businesses in which owners receive a fixed daily target revenue from drivers who keep the variable balance as income. The common result of weak public sector regulation and a ‘target system’ fare strategy is destructive competition and poor quality of service. There is an unanswerable case for improving the quality, reliability and coverage of public transport systems for the inhabitants of African cities.

In this paper it will be argued that there are, however, path dependencies and constraints that limit the extent of possible public transport system transformations, and that paratransit operations indeed have some inherent advantages with respect to demand responsiveness and service innovation that should not be discarded. Two outcomes of contemporary plans to improve public transport systems are likely: upgraded paratransit service systems; and hybrid planned and paratransit service systems. A review of international experience yields a variety of possible policy approaches to pursue these two scenarios. Examples of alternative policy approaches to upgrading paratransit services include: re-regulation; vehicle renewal incentives; road space prioritisation; business training; and franchising. Examples of alternative policy approaches to integrating paratransit and planned services include: interlining; peak-lopping; feeder reward schemes; and feeder area licensing or concessioning.

The paper will report upon the results of an evaluation of these alternative policy approaches, involving a two-round Delphi survey of a (n=24) panel of experts selected on the basis of their experience in designing and preparing paratransit upgrade and integration projects in African cities, particularly in the cases of Cape Town, Dar es Salaam and Nairobi. The first round of the Delphi survey will test the cogency of a series of nested policy propositions and their potential problems in implementation, and will solicit additional policy alternatives for inclusion in a second round. The second round will add to and refine the first round of policy propositions, and seek a narrowing of expert consensus on appropriate policy. The paper will conclude with a critical discussion on the problems facing, and prospects of, public transport reform in the case cities.

CODATU XV

LES TAXIS BROUSSES TOGOLAIS : UNE READAPTATION DES TAXIS COLLECTIFS IMPOSEE PAR LA CONCURRENCE DES TAXIS -MOTOS DANS LES VILLES SECONDAIRES (in french)

Dans cet article, nous nous proposons d’étudier le rapport entre taxis collectifs et taxis-motos dans l’espace urbain et périphérique des villes de Sokodé et de Kara. Dans ces villes où la puissance publique n’intervient guère pour réguler le secteur du transport, les taxis-motos se sont révélé les plus efficaces et les plus pratiques à la mobilité quotidienne alors qu’ils ne respectent pas la réglementation en vigueur. Il sera question également de montrer comment les conducteurs des taxis collectifs ont été obligés de se reconvertir totalement en taxis brousses, sous la domination des réseaux de taxis-motos, pour s’adapter à la desserte des petites villes et des villages environnants. En nous basant sur les résultats de nos enquêtes, nous feront ressortir l’organisation et la logique de fonctionnement des réseaux de taxis-brousses qui sont une illustration de l’importance des relations entre les villes secondaires et leur arrière-pays. Nous montrerons aussi comment la marche et surtout la moto en double usage sont les principaux modes de transport que les citadins des villes moyennes ont choisi parce que leur utilisation est mieux adaptée à la situation économique du pays dans un contexte de pauvreté. A partir de la description des espaces urbains, nous dirons enfin comment les taxis-motos se sont appropriés tout l’espace urbain et sont devenus les seuls maîtres du terrain.

Assogba
GUEZERE

Université de Kara, Togo
Kara
Togo
Enseignant-chercheur (Maitre-assistant)
guezere1970@yahoo.fr

Maître-assistant, Université de Kara - Département de Géographie,
Spécialité transport urbain et dynamique urbaine,
Lauréat du prix de la francophonie de PREDIT 2011 à Bordeaux

Addis Ababa - Ethiopia
Roger Behrens is an Associate Professor in the Department of Civil Engineering (University of Cape Town), Director of the Centre for Transport Studies (CfTS), and Director of the African Centre of Excellence for Studies in Public and Non-motorised Transport (ACET). He graduated with a Master Degree in City and Regional Planning (with distinction) from UCT in 1991 and with a PhD degree in 2002. His current research activities relate to three fields. The first is the regulation and improvement of paratransit, and its interface with integrated, planned public transport systems. The second is the analysis of the dynamics of changing travel behaviour, and the implications this has for the management of travel demand. A third is the analysis of the use of transport systems by pedestrians and the quality of pedestrian infrastructure and environments, and the identification of frameworks through which improvements can be made.

Dorothy McCormick is a Research Professor at the Institute for Development Studies, University of Nairobi, where she has been a member of staff since 1988. From 2001 until 2007, she was the Institute's Director. She has a long history of research and teaching in the area of industrialisation and enterprise development in Africa. Her work has dealt with institutions and enterprise development, enterprise clusters, and value chains. She has recently extended her work into the field of transport, with a project that looks at Nairobi’s matatus (paratransit vehicles) as businesses. Prof. McCormick holds MA and PhD degrees in International Studies from The Johns Hopkins University, an MBA from the Wharton School of the University of Pennsylvania, and a BA from Trinity University, Washington, DC.

Other authors:
Pr. David Mfinanga
Department of Transportation and Geotechnical Engineering, University of Dar es Salaam
4 : HOW DO WE DEAL WITH THE NEEDS OF PEOPLE IN TRANSPORT POLICY? HOW TO MAKE TRANSPORT SYSTEMS EQUITABLE?

4A - INTERMODAL PASSENGER TRANSPORT TO IMPROVE ACCESS TO URBAN SOCIAL AND ECONOMIC OPPORTUNITIES

4B - LEARNING TO CONSIDER THE SOCIO-ECONOMIC IMPLICATIONS OF MOBILITY STRATEGIES

4C - LOW COST MOBILITY OPTIONS FOR ORDINARY PEOPLE

4D - ROAD SAFETY ISSUES
ACCESSIBILITY, PLANNING AND URBAN POVERTY: TOOLS FOR EQUITABLE TRANSPORT PLANNING IN DEVELOPING CITIES.

One of the key objectives of equitable transport planning is the delivery of accessibility, that is affordable, available and acceptable (Carruthers et al, 2005). Yet the accessibility needs specific to the urban poor are rarely incorporated in transport planning, a gap that has wider implications in the renewed planning focus that is occurring in cities of Africa, Asia and Latin America. Furthermore where approaches are made the planning practices often rely on expensive data gathering methodologies that are rarely repeated if undertaken at all. This paper will build on work undertaken for UN-HABITAT on developing an Urban Poor Accessibility Assessment Tool that seeks to improve the tools available to key stakeholders, including governments, donors and civil society. The paper will identify the specific accessibility needs of the urban poor that would improve the equity of planning outcomes and enhance the ability the urban transport sector to contribute to poverty reduction and social sustainability. It will draw on work undertaken in Nampula, Mozambique, Kigali, Rwanda and Manila, Philippines to explore the development of a package of methodological approaches to undertake rapid appraisals of accessibility within urban low-income communities for cities across the global South. The paper will examine the scope of new technologies and participatory approaches to deliver user group planning practices and protocols within such communities. Finally, it will highlight examples of innovative practice in user group planning and in delivering accessibility for low-income communities and it will recommend future steps for work in this area.

Jeff TURNER
Institute for Transport Studies, University of Leeds
Visiting Lecturer and Independent Consultant
Leeds United Kingdom
jeffreymturner@hotmail.com

Jeff Turner has over 20 years experience of undertaking research and consultancy on transport policy and planning. In particular he has focused on the interaction between urban and rural mobility and social development, poverty reduction and equity. He has worked across the global North and global South, particularly in Africa. He has published widely in both academic and non-academic literature.

Mensah ADZIGBEY
Independent Consultant
mensah.adzigbey@park.edu

Mensah has trained as an economist and transport planner. He has undertaken research related to mobility and poverty reduction in both rural and urban context and is involved in a UN HABITAT developing accessibility tools for the urban poor.
4A - INTERMODAL PASSENGER TRANSPORT TO IMPROVE ACCESS TO URBAN SOCIAL AND ECONOMIC OPPORTUNITIES

SPATIAL DISTRIBUTION OF INTERCITY PASSENGERS' TERMINALS IN LAGOS: IMPLICATIONS FOR TRANSPORT POLICY

The study investigated the relationship between distribution of intercity road passenger terminals and transport needs of all socio-economic groups in the city. An understanding of this relationship is vital to the terminal location policies and programmes that provide for equity, access and economic benefit. The primacy of the city, its economic status and the high level of regional interaction placed high demand on its transport system, particularly the terminals. This has implication on terminal distribution, patronage and economic activities. The specific objectives examined include the factors influencing the spatial distribution of passenger terminals and their impact on people’s transport demand and public and private sector response to terminal provisions.

The paper adopted a cross sectional survey approach using structured questionnaires administered on the terminal operators in each of the one hundred and fifty nine (159) terminals which are distributed across three activity zones namely CBD, Transition and Residential. Information collected includes terminal characteristics and other factors influencing choice of location. The nearest neighbour analysis was used to determine the pattern of terminal location while analysis of variance technique was used to test the variation in terminal distribution across three activity zones. Data were also collected on the socio economic characteristics of passengers. One thousand three hundred and fifty eight (1358) passengers were randomly selected and interviewed to determine their level of patronage of the terminals and how accessible are the terminals to their residential locations within the city.

Findings from the study revealed that terminal distribution is clustered and their operational characteristics vary significantly across the three different activity zones. The knowledge of operational problems, locational advantage of petrol retail outlet and government intervention significantly influences the choice of terminal location. The clustered locational pattern of the terminals is at variance to some existing theories of equidistance spatial distribution of such higher order services implying several passengers had to travel longer distance and time that is inconsistency with objectives of national transport policy. The study concluded that an understanding of the pattern and factors that influence terminal location and patronage is crucial to the transport needs of socio economic groups in the city. The overall transport policy implications to the city development in the country are discussed.

Kayode OYESIKU
Olabisi Onabanjo University
Professor of Urban and Regional Planning
Ago-Iwoye
Nigeria
kayodeoyesiku@yahoo.com

Professor Oyesiku, a Professor of Urban and Regional Planning, former Vice Chancellor, town planner, transport expert holds PhD in Transport Systems Planning. A graduate of Institute of Social Studies, The Hague, Harvard Business School Executive Education programme, has over 200 publications, attended and presented papers in many international conferences. A member of the Nigerian Town Planners Institute and a Fellow of Chartered Institute of Logistics and Transport.

Bolaji OLASENI
Yaba College of Technology
Deputy Rector Academic
Yaba
Nigeria
Juwonjimba2001@yahoo.com

Dr. Olaseni, town planner and transport expert holds PhD in Transport Systems Planning and Management. Fellow of Erasmus University (IHS) Rotterdam, Netherlands, Graduate of Technology Management, Galilee International Management Institute-(GIMI) Israel and Harvard Extension School on Management of Higher Education Institution. Has over 15 publications attended several academic conferences and presented over 36 papers. Participant in World Urban Forum, a member of the Nigerian Institute of Town Planners and Chartered Institute of Logistics and Transport.
Systemic thinking, allied to the concept of the integrated management of mobility within the municipality of Belo Horizonte, led to the view that school transport is a public service and, as such, should only be provided subject to official permission.

The state establishes rules governing public services to ensure economic development and adjust market imbalances, with the aim of deriving maximum efficiency in the provision of such services and promoting social well-being. This renders the users a more efficient and effective service, while the operators gain economic and financial stability. For this reason, BHTRANS (Belo Horizonte Public Transport Corporation) defined the rules and regulations governing their operations in 1999 and 2004.

Specialists and public administrators in the transport field have sought, through the auction model, an instrument that introduces a competitive element and increases the productivity of the operators. The social argument for such measures is that the most productive operators will generate gains in scale that will be passed on to society.

The auction process presumes the existence of a market, consisting of structured companies that are able to submit technical and financial bids in a public tendering process. These companies are able to assess the behavior of the market, as well as the technical requirements and the attendant costs of meeting them. They are also capable of estimating future revenues, even in an inflationary environment.

However, the reality of the school transport market in Brazil, or of many transportation services in Latin America, is comprised largely of lone operators, owners of a single vehicle, who sometimes organize themselves into associations or cooperatives in order to guarantee the operability of the service, increase their clout in dealing with the state and reduce their operating and administrative costs.

The BHTRANS auction model was developed following the perception that the traditional tendering processes are not really applicable to the commissioning of urban transport services provided by smaller vehicles, owned by private individuals and operating on a small scale. The auction model utilized in 1999 and 2004 contains a mechanism for awarding points to bidders for time they are prepared to devote to providing free transport for activities that have a social purpose, thereby transferring to society the gains in scale of these services.

All candidates approved in the two processes offered the ceiling of hours of social work defined in the Call to Tender. The first call to provide such services came in 2001, making it possible to carry out various social programs organized by the local government and partnering entities and thus ensuring the transfer to the needier segment of the population of part of the gains realized from the provision of school transportation.
MANAGEMENT OF RICKSHAW IN DHAKA CITY FOR ENSURING DESIRABLE MOBILITY AND SUSTAINABILITY: THE PROBLEMS AND OPTIONS

Dhaka, the capital of Bangladesh has facing enormous transport as well as mobility problem due to the huge deficiencies in different fields including colossal operation of massive number of rickshaws non-motorized vehicle (three wheeler rickshaws) and excessive dependency on that of the city dwellers. Dhaka City Corporation (DCC) officially limits the number of license issued to rickshaw owners to some 87,000. However, unofficial estimate claimed that the number of rickshaw playing in Dhaka is about 500,000. In addition, around 800,000 rickshaw pullers employed in the Dhaka city area, plus another 50-70,000 people employed in ancillary occupations.

The latest surveys of person’s movement in metropolitan Dhaka under the Dhaka Urban Transport Project showed walking as the predominant mode with a share of 62 percent of total person trips. This is followed by rickshaw (13.3%), bus (10.3%), auto rickshaw (5.8%), and car (4%). In consideration of person trips by vehicle, rickshaw takes the highest share, accounting for 35 percent followed by bus (21%), auto rickshaw (1.5%), and car (10.5%). Indeed, among the transportation modes, rickshaws dominate the traffic stream particularly in the inner areas of the city. Road space occupied by rickshaws is 73%, and by cars, buses and tempo is 19.7%, 4.4%, and 0.4% respectively.

Now it is a burning issue to proper manage these huge numbers of rickshaw and a brief study has been conducted to evaluate the current profile and level of understanding of traffic rules and regulation to way out the options for better management of those NMVs on Dhaka’s road. The study revealed that at present condition, the elimination or proper management of these massive number of rickshaws would be a very challenging task because of fully ignorance of traffic rules and regulations of the rickshaw pullers (92%), lack of basic minimum education and training (90%), huge number of families’ economically dependency on rickshaws (0.8 millions), lack of alternative sufficient job facilities in the local market (around 0.9 millions are employed in providing rickshaw services) as well as inaccessible road in the local area (around 52%), poor public transport and mixed landuse pattern in all over the city. This paper will form from the part of that broader study. Prevailing transport system, traffic management and operational condition and some major inherent weaknesses of the city development will be discussed at the very outset of the paper.

S. M. Sohel Mahmud graduated with a Degree of B. Sc Eng. (Civil) from the Khulna University of Engineering and Technology (KUET) in 2004 and M. Sc. Engineering (Transportation) from Bangladesh University of Engineering and Technology (BUET) in 2009. He is working as an Assistant Professor at the Accident Research Institute (ARI) of Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh. He authored around 60 papers internationally and nationally in the field road safety and traffic engineering areas and attended many international and national seminars, workshops and conferences. He is an active member of Institute of Engineers, Bangladesh (IEB), Bangladesh Regional Science Association (BRSA) and Institute of Transport Engineers (ITE).

Md. Shamsul Hoque obtained his B.Sc. Engg. Degree (Civil) in 1984 from Bangladesh University of Engineering and Technology, M. Sc. Engg. Degree in Transportation Engg. from the same university in 1987 and PhD in 1995 from University of Southampton, UK. Now he is the Professor at the department of Civil Engineering, BUET. His research interest includes: Non-lane based mixed traffic operation, Traffic signals, Behavior of pedestrian, Environmental impact of transportation, Application of micro simulation, Artificial Intelligence (AI), Neural Network, and Genetic Algorithm (GA) in mixed traffic operation, Accident Investigation, Road Safety and Traffic Management. He is also a former Director of Accident Research Institute (ARI), and Test-in-Charge, Bureau of Research, Testing and Consultation (BRTC) of Department of Civil Engineering, BUET. Dr. Shamsul Hoque has been extensively involved in wide variety of civil engineering consultancy and construction projects in Bangladesh including road, flyover, interchange, inland container depot (ICD) etc.

S. M. Sohel Mahmud
MAHMUD
Assistant Professor
smsohelmahmud@gmail.com

Md. Shamsul Hoque
Department of Civil Engineering, Bangladesh University of Engineering & Technology (BUET),
shoque@ce.buet.ac.bd

Addis Ababa - Ethiopia
MOBILITES QUOTIDIENNES ET ACCES A LA VILLE EN AFRIQUE SUBSAHARIENNE : ENJEUX ET DYNAMIQUES (in french)

The conditions of effective access to daily activities and urban spaces in African cities remain badly known because of the scarcity of empirical data on daily travel and spatial behaviour. This paper aims to analyse the access to urban spaces by approaching it by the travel behaviour of populations. The secondary statistical analyses presented in this paper are based on data gathered in seven household travel surveys undertaken in West and Central African cities (Bamako, Conakry, Dakar, Douala, Niamey, Ouagadougou) between 1992 and 2003. All modes of transport included, the daily number of trips varies from 3.0 to 4.6, depending on the city. The mechanised modes of transport are used for 26% to 43% of trips and walking remains the main mode of transport. Therefore, between one third and a half of inhabitants travelled solely by foot during the surveyed day and the places near their home are the space of life for the great majority. In spite of the fact that the central districts concentrate a number of activities and public services and facilities, they are not a frequent destination for the non-residents of the city centre and only between 5% and 29% of their trips have at least one end in these districts. The unequal spatial distribution of 2 activities and public services and facilities, on the one hand, and the restricted and selective access to the means of transport, on the other hand, raise the issue of the long term consequences of confined spaces of life for the search of economic and social resources and the development of human capital.

Lourdes DIAZ OLVERA
LET
Vaulx-en-Velin
France
lourdes.diaz-olvera@entpe.fr

Didier Plat
LET
Vaulx-en-Velin
France
didier.plat@entpe.fr

Other authors:

Dr. Pascal Pochet

L. Diaz Olvera, D. Plat et P. Pochet sont chercheurs au Laboratoire d’Economie des Transports (Lyon, France). Ils conduisent des recherches et des expertises dans les villes africaines depuis vingt ans. Elles ont donné lieu à la publication de nombreux articles scientifiques, dont récemment :


Travel demand management (TDM) strategies have received much attention in recent years as means of curbing congestion in cities and introducing more sustainable transport systems. Most TDM measures focus on effecting travel behaviour change amongst commuters. Clearly such measures are likely to have the greatest impact when targeted at commuters most receptive to changing their travel behaviour. The study of commuters in order to understand their travel behaviour patterns, when they are most open to change and what causes them to change, is therefore imperative in drawing up effective TDM strategies.

Many studies have been conducted, in various contexts, to understand the dynamics of travel behaviour change. Some studies have revealed that travel behaviour is habitual in nature and characterised by non-deliberative repetition of travel decisions, and that deliberate reappraisal of travel choices generally only occurs when triggered by ‘key events’ or ‘life shocks’. Such habitual behaviour would suggest fairly stable travel patterns in a city’s transport network, punctuated by occasional disaggregate change stimulated by infrequent events or shocks that alter individual trip decision-making processes. Other studies have revealed that personal travel decisions can be variable, and not as routine as studies revealing habit might suggest. These studies suggest that underlying travel patterns observed in a city’s transport network, that may in aggregated observations appear fairly stable (in terms of system utilisation), are ‘churning’ reciprocal individual changes in travel decisions.

This paper will explore the tension between habit and variability, by developing and testing a theoretical proposition that attempts to reconcile these two empirically observed phenomena. The proposition, in essence, posits that habitual patterns of behaviour apply more to mode choice and switching, and that intra-personal variability applies more to changes of timing and routing behaviour within a particular mode use domain.

In the absence of panel or repeated cross-section data on commuting behaviour in Cape Town, a (n=±100) qualitative retrospective survey is being administered to examine behavioural dynamics over extended periods of time. The reliability of this survey depends on the ability of respondents to accurately recollect past events. Recall aids in the form of ‘life and commuting history calendars’ are being used for enhancing the reliability of data. A two week self-completion commuting diary is also being employed to gain insight into the day-to-day variability of personal travel decisions.

The paper will conclude with a discussion on the implications of the mobility biography findings for TDM strategy formulation.

Eric ADJEI
University of Cape Town
PhD Candidate
eric.adjei@uct.ac.za

Eric Adjei is a PhD candidate at the Centre for Transport Studies (CfTS) at the University of Cape Town (UCT). He obtained his Bachelor of Science (honours) degree in Civil engineering from the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi-Ghana in 2007 and a Master of Science degree (with distinction) in GIS for Urban Planning and Management from the University of Twente, Enschede – Netherlands in 2010. His research interest are into travel demand, behavioural and behavioural change modelling. Also of interest is the field of GIS application in these models. He is currently doing a research on travel behaviour dynamics and how to effect modal changes in the City of Cape Town.

Roger BEHRENS
Centre for Transport Studies, University of Cape Town
Associate Professor
roger.behrens@uct.ac.za

Roger Behrens is an Associate Professor in the Department of Civil Engineering (University of Cape Town), Director of the Centre for Transport Studies (CfTS), and Director of the African Centre of Excellence for Studies in Public and Non-motorised Transport (ACET). He graduated with a Master Degree in City and Regional Planning (with distinction) from UCT in 1991 and with a PhD degree in 2002. His current research activities relate to three fields. The first is the regulation and improvement of paratransit, and its interface with integrated, planned public transport systems. The second is the analysis of the dynamics of changing travel behaviour, and the implications this has for the management of travel demand. A third is the analysis of the use of transport systems by pedestrians and the quality of pedestrian infrastructure and environments, and the identification of frameworks through which improvements can be made.
This paper investigates life course events and their effect on the stages of change of bicycle commuting in the city of Dar-es-Salaam, Tanzania. The objective of the study is to identify specific life course events which significantly influence on change of travel behaviour towards bicycle commuting. Using the theory of stages of behaviour change, which defines behavioural readiness (intentions and actions) into six distinct successive categories and the mobility biography approach, which assumes that travel behaviour is mainly habitual, the paper attempts to provide an empirical basis for better understanding of key events while giving an insight into the potential policy intervention measures to change travel behaviour towards a more sustainable mobility, in this case bicycle commuting. By analysing survey data from 450 daily commuters in the city of Dar-es-Salaam using exploratory factor analysis and logistic regression models, it is possible to explore life course events that significantly influence transitioning from one stage of cycling behaviour to the other. The survey samples were categorized in different stages of change of cycling behaviour (i.e. pre-contemplation, contemplation, prepared for action, action, maintenance and relapse). The findings of the relationship between life-course events and the stages of change of cycling behaviour are useful for developing specific policy measures and promotional strategies to influence progressing stages of cycling behaviour towards regular bicycle commuting behaviour. The study contributes to providing an empirical basis for developing targeted policies and programs aimed at promoting and increasing levels of bicycle commuting.

Alphonse Nkurunziza is a PhD candidate in the department of urban and regional planning and Geo-information management at the faculty of ITC, University of Twente in the Netherlands. He is also an assistant lecturer of Transportation Planning and Management in the department of civil engineering at Kigali Institute of Science and Technology (KIST), Rwanda. He holds a Bachelor of Science degree in civil engineering and environmental technology from KIST and a Master of Science degree in urban planning and management with emphasis in transportation planning from ITC, University of Twente. His areas of research interest are in transportation planning, travel demand analysis, travel behaviour, urban planning, cycling.

Mark Zuidgeest is Assistant Professor Urban Transport in the Faculty of Geo-Information Science and Earth Observation of the University of Twente in The Netherlands. He has 15 years' experience in the transport sector, both as an academic and as a consultant. He is specialized in sustainable urban transport development and geo-information. He is a member of the UN partnership on Sustainable, Low Carbon Transport (SLoCaT), an international think tank on transport and climate change, as well as of The Netherlands expert group on non-motorized transport (Cycling.nl). He has written a PhD dissertation on Sustainable Urban Transport Development and published several articles on this theme. He has worked extensively overseas in urban transport and infrastructure related projects in several countries in Africa, Asia, Latin America and Caribbean. Dr. Zuidgeest is secretary of the international Cycling Academic Network (CAN), a collaboration between universities studying the role of cycling in sustainable urban development.
CAN THE CONCEPT OF ENVIRONMENTAL JUSTICE IN TRANSPORT BE TRANSFERRED TO CITIES OF THE SOUTH? A CASE STUDY OF NAIROBI.

Environmental justice (EJ) describes the equal access to environmental resources as well as equal protection from adverse effects and environmental hazards, independent from the socio-economic background of the individual like age, gender, income or ethnic group. It usually includes the three dimensions of:

- **distributive justice**: no deprived group should suffer a disproportionate burden of negative impacts as well as inadequate transportation which does not provide access to fulfil their basic needs,

- **precautionary justice**: equal distribution of environmental goods and risks among generations,

- **procedural justice**: all communities have access and can participate in decision making processes affecting their environment.

This approach, which has been applied in the United States for decades and more recently in Europe, is a very advanced concept. It can obviously not be applied one by one into transportation planning of a rapidly growing city in a developing country with its severe differences between wealth and poverty.

However, walking, cycling and to a certain degree public transportation measures have convincing benefits from the EJ perspective due to their good environmental performance and easy access for everybody. Unfortunately the focus of most planning activities are on vehicle-oriented road construction. The projects are often funded by development aid to produce relieve from car congestion.

This paper merges aspects of environmental justice with current transportation planning activities in Nairobi, Kenya. The first part of the analysis focuses on studies and project plans on non-motorized transport policies in developing cities with an emphasis on Nairobi to identify general trends and approaches for an integrated transport planning. In the second part, in-depth interviews with stakeholders from government agencies, NGO, international donor agencies, consultants and researchers are conducted. Different levels in the hierarchy are covered, ranging from top-management to junior staff members. The interviews goal is to detect daily problems of practitioners and systematic shortcomings and try to identify the current role of EJ. Measurements for equity improvements are derived in a last step.

Key topics addressed are: awareness of planners concerning needs of society, accessibility for the poor, allocation of funding, distribution of environmental pollution and victims of road casualties, public participation and consultation.

The analysis was carried out in Nairobi during a four month stay in the city. The project was independent from any local stakeholder because it was funded by a German academic exchange program. However, it was done in close collaboration with a government funded Kenyan research institute.

---

**Thilo BECKER**

**Technische Universität**

Dresden

Germany

**PhD-Student**

thilo.becker@mailbox.tu-dresden.de

Thilo Becker studied transport engineering at TU Dresden (Germany) and KTH Stockholm (Sweden) and finished both programs in 2009. He worked in different fields of transport as a consultant for public transport companies, consultancies and state agencies during his studies.

Since 2009, he receives a PhD-scholarship from the Heinrich-Böll-Foundation. His research focuses on distributive analysis of external costs from transport in Germany. In a first step, he develops approaches to monetize environmental effects to do appraisals. Afterward, he tries to identify socio-economic groups which have to bare disproportionate high adverse effects.

He is convinced that industrialized countries need a shift towards to a more environmentally friendly development in transport. But more important is to prevent the repeat of their mistakes in the rest of the world. Therefore he conducted research visits in Kenya. He also offered seminars for international students on sustainable transport fulfilling the needs of the people.
L’INTERMODALITE SUBIE DES CITADINS AFRICAINS (in french)

Si, au Nord, l’intermodalité est envisagée par les pouvoirs publics comme le moyen technico-organisationnel d’améliorer la durabilité des services de transport en continu d’assurer de hauts niveaux de desserte des territoires, au Sud cette notion connaît un succès beaucoup plus limité dans les discours officiels. Dans les villes africaines en particulier, le laissez-faire de l’Etat comme des municipalités se traduit notamment par un développement anarchique et non coordonné des différents modes de transport collectifs. Pour autant, nombre de citadins africains sont confrontés quotidiennement à la nécessité d’une intermodalité en actes dès lors que certaines destinations sont difficilement accessibles à pied. Cette intermodalité de fait pèse alors sur les conditions de vie en alourdissant les emplois du temps et en allégeant les bourses : temps d’attente rallongés, faute de coordination des horaires et des fréquences, prix accrus, faute d’intégration tarifaire...

Notre propos sera de repérer l’importance de ces pratiques intermodales et d’en évaluer les effets, tant positifs (meilleure accessibilité pour les résidents des zones enclavées, fréquentation accrue de certaines activités...) que négatifs (poids sur les budgets temps et monétaires...). Nous chercherons également à analyser dans quelle mesure l’émergence d’une offre collective « individualisée » de plus en plus présente, les motos-taxis, est susceptible de modifier les conditions de réalisation des pratiques quotidiennes en favorisant le développement de l’intermodalité par un accès accru aux modes motorisés. Nous nous appuierons pour cela sur trois contextes, Conakry, Douala et Lomé, où nous avons mené des travaux de terrain dans les dernières années : enquêtes par questionnaire auprès des populations et entretiens auprès de transporteurs et d’acteurs institutionnels mais aussi de citadins.

Dans ces villes à faibles ressources et où la puissance publique n’intervient guère, l’intermodalité semble simultanément essentielle dans la vie quotidienne, notamment pour sortir du quartier de résidence, et fortement dépendante du recours à la marche, du fait de la cherté des transports collectifs, de l’absence d’intégration tarifaire et plus largement du défaut de régulation publique et de coordination entre acteurs. Elle apparaît ainsi plus subie que voulue, loin du modèle dominant dans les pays du Nord.

Les trois villes, dont deux (Conakry et Lomé) jouissent de la fonction de capitale, tiennent la première place au plan économique dans leur contexte national. Au moment des travaux de terrain qui nourrissent cette communication, la commune de Lomé n’a pas encore atteint le million d’habitants, tandis que Douala et Conakry ont toutes deux dépassé les deux millions. Ces trois villes se caractérisent par des configurations de l’offre de transport différenciées. Si l’accès très limité à la voiture est à noter dans les trois contextes, ils se distinguent par la configuration de l’offre de transport collectif. A Conakry, coexistent minibus et taxis collectifs. A Douala, les motos-taxis sont en fort développement et cohabitent avec d’autres formes de transport collectif (taxis collectifs principalement). Lomé, enfin, est dominée de longue date par les motos-taxis au détriment des taxis collectifs.

Lourdes DIAZ OLVERA
Let: Vaulx-en-Velin
Country: France
Email: lourdes.diaz-olvera@entpe.fr

Assogba GUEZERE
University: Université de Kara, Togo
Title: Enseignant-chercheur
Email: guezere1970@yahoo.fr

Other authors:
Mr. Pascal POCHET

Lourdes. Diaz Olvera, Didier Plat et Pascal Pochet sont chercheurs au Laboratoire d’Economie des Transports (Lyon, France). Ils conduisent des recherches et des expérimentations dans les villes africaines depuis vingt ans. Elles ont donné lieu à la publication de nombreux articles scientifiques. Parmi leurs publications récentes :

As a planner, one needs to understand that it is not attrition of motorised traffic in cities but rather attrition of motorised traffic by cities which hold the key to sustainable mobility. Planners need to promote desired city uses that happen to be in competition with motorised traffic. These needs would definitely narrow the vehicular road bed, but if that makes our cities learn to foster deliberately to the basic generators of diversity, popular and interesting walkways and cycle tracks would grow and their need would be justified.

Urban mobility is taken as a synonym of making flyovers and freeways in many of the developing nations today. A large section of policy makers still feel that roads are meant for vehicular movement only. On the other hand, a person on foot or on a cycle is usually neglected. Merely pedestrianising streets, diverting or controlling vehicular traffic movement, is not what is desired. Merging city fabric and people’s mobility shall be the motive. There is a dire need to address this issue in Indian societies. There are no significant planning interventions or policies to have more walkable and cyclable communities, or have judicious landuse classification, which integrates walkability and cyclability along with mass transportation.

In India there are 35 million plus cities which are considerably compact and have short travel distances, with potential walkable and cyclable areas. Bhopal is one such well planned city with an avg. distance between neighborhoods as 1-2 km and city centers as 3-4km. Of the total .1 million trips made in Bhopal, pedestrian share is 48.5% and cyclists 4.3%. It is evident; people in Bhopal still depend on walking and cycling for daily commuting. Local administration of Bhopal has taken steps to beautify boulevards, with facilities for people to walk but the focus is still on widening of roads, with no attempts made to enhance walkability and cyclability. People still feel the need for accessible and safer roads. Thus Bhopal gives a suitable case example which can be developed into a walkable and cyclable city through suitable planning interventions.

This paper shall be an attempt to understand the importance of walkability and cyclability, as part of city planning. The study shall also aim to identify the micro level issues through community participation, pertaining to walkability and cyclability in Bhopal and suggest suitable planning interventions and policies to enhance walkability and cyclability in Bhopal.

The scope of work shall cover identification and planning of the area/areas in the city of Bhopal, enhancing their walkability and cyclability and ensuring a more sustainable urban environment which includes safety, proximity and access, and not simply mobility. It shall focus only on pedestrians and cyclists and not all forms of non-motorised means of transport.

Mausmi HAJELA
School of Planning And Architecture, New Delhi
Student
mausmi.hajela86@gmail.com

Rohit Sharma
Urban Mass Transit Company (UMTC), New Delhi
Management Trainee
rohitsharma16@gmail.com

Age 25, I am an architect by profession and a graduate from Maulana Azad National Institute of Technology, Bhopal, India (2010). I am currently pursuing Masters in Urban Planning from School of Planning and architecture (SPA), New Delhi. I did my professional training in Christopher Charles Benninger Architects Pvt. Ltd (CCBA, Pune). I worked on the ongoing projects of CCBA and was a part of the execution teams as a trainee architect. I have also interned under D.B.Mall Corp. (Bhopal) and Piyush Hajela and Associates (Bhopal). I also practice in my profession as a free lancer and have given consultation and supervised execution work in Bhopal as an Architect. I have written papers on Management of Lakes of Bhopal and presented it in the Indian Science Congress, New Delhi in the year 2001. I have also written many papers concerning environmental issues in Bhopal which were published by World Wide Fund for Nature (W.W.F)-India and Environment Planning and Coordination Organization (EPCO).
Age 23, I am a physical planner by profession and a graduate from Maulana Azad National Institute of Technology, Bhopal, India(2011). I am currently working in Delhi, with Urban Mass Transit Company (UMTC), a joint venture of Ministry of Urban Development, Govt. of India, a State Govt and Infrastructure Leasing & Financial Services (IL&FS) Pvt. Ltd. Before joining UMTC, I have worked in DHV, India for 3 months. Apart from the regular academics during graduation, I worked under college professors on different projects and also worked as a researcher in Institute of Town Planners India, Bhopal for five months. Has also written a paper which was published in ITPI, Journal and also got letter of appreciation for the same. The other paper was selected in an International Conference and was published in their proceedings. Also, have done internships in: Sustainable Urban Transport Project (SUTP) - Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Delhi ; Centre of Excellence (CoE) in CEPT (An Initiative of Ministry of Urban Development, Government of INDIA), Ahmedabad ; MRVC Ltd (A Public Sector Undertaking of Government of INDIA, Ministry of Railways), Mumbai ; PDCOR (JV of Gvt. of Rajasthan and IL&FS), Jaipur

THE IMPORTANCE AND CHALLENGES OF LOW COST MOBILITY MODES FOR SUSTAINED SOCIOECONOMIC AND ENVIRONMENTAL DEVELOPMENT IN CITIES OF AFRICA; COMPARATIVE ANALYSIS OF BICYCLE TRANSPORT IN BAHIR DAR AND HAWASSA CITIES IN ETHIOPIA

Bicycle transport is one of non-mortised transport which uses human energy. It has no emission and noise, it requires very small parking space, it is cheap to own and operate, offer door to door service, keep the rider in a good health and safe when it is segregated from mixed and fast traffic. The main objective of this study is to present challenges in promoting low cost mobility modes for sustained environment and socioeconomic development in cities of Africa with special emphasis on bicycle transport in Bahir Dar and Hawassa secondary cities in Ethiopia. They are capital cities of Amhara and SNNPR(Southern Nations Nationalities Peoples Region).The dominant mode next to walking in these cities is bicycle transportation. The research of both cities will be based on primary data of about 1% of bicycle riders of the estimated 46,000 bicycle users, and secondary data from transport offices. The methodology of the study will be based on quantitative and qualitative data analysis. The bicycle sector is a source of livelihood for many people. For sustained health and environment security, bicycle transportation should be promoted by the policy makers.

Belew Dagnew

The Researcher, Belew Dagnew is Ethiopian nationality. He is 49 years old, married, and father of three children. He is MA graduate of AAU, in 2004 in Geography and Environmental Studies with the stream of Economic Geography. In 1997 passed the "Diplome d'études en language francaise (DELF) 1er degree " in unit a1 and a2 (International exam), Alliance Ethio-Francaise, Addis Abeba. He was lecturing in private and governmental universities St. University College, Admas University College, Addis Ababa University and now he is Assistant professor in Ethiopian Civil Service University. He has been lecturing transportation and urban infrastructure since 2005 in different colleges and universities, and permanently training Transportation Management in Addis Ababna Chamber of Commerce since 2006. He had been Coordinator of Urban Transport Provision and Management Specialization and Member Academic Commission in Civil Service University from 2007-2011. He has taken many trainings and participated in many workshops. He has developed many educational curriculums and published four transport related journals, one proceeding many modules and training manuals. At national level: he is member of Road Transport Consulting Committee in Ethiopia.
URBAN MOBILITY SOLUTIONS FOR THE POOR

The inability of the urban poor to access jobs and services is an important element of social exclusion that defines urban poverty. Further the urban poor suffer more from the negative externalities of the growing demand for mobility, for example the urban poor are more reliant on non-motorised modes of transport and therefore are overrepresented in traffic accidents. Pro-poor urban transport solutions can attenuate this poverty and increase living standards by introducing a conscious poverty reduction in transport infrastructure investment, public transport service planning and transport regulation. A key aspect to this is the improvement of access to urban basic services like water and sanitation or schools and hospitals.

This paper is a summary of a study completed by UN-Habitat on “Urban Mobility Solutions for the Poor”. The study presents in total 8 best practice examples from Africa, Asia, Latin America and Emerging Economies on urban mobility solutions for the poor. The best practice examples are carefully chosen to provide a wide range of up-to-date mobility solution. Each case study is evaluated in the context of the pro-poor transport framework. The analysis tries to extract the lessons that can be learned from investments in transport to reduce poverty. From this evaluation framework the following comparable elements are identified: achievements, challenges, investment, benefits to the urban poor, access to basic services and integration with other policy areas (for example housing).

The results from this study can be used twofold. Firstly, it provides an up to date overview for decision makers of the different options that are available to reduce poverty through mobility solutions. Secondly, the framework gives decision makers a tool to evaluate future and current transport investments in their ability to urban reduce poverty.

Andre Dzikus
Leader - Mobility Unit
UN-Habitat
Nairobi
Kenya
andre.dzikus@unhabitat.org

Andre Dzikus has been with the United Nations for the past 21 years and as a senior staff member he is currently leading UN-Habitat’s work on Urban Mobility. The vision for Urban Mobility is to build a solid portfolio of projects on sustainable urban mobility that have a strong link with urban planning and urban design. As Chief of Section for Water and Sanitation, he has been instrumental in setting up the Water and Sanitation Trust Fund in 2002: a one-stop multi-donor multi-programme facility promoting pro-poor investments for increased access to water and sanitation. Over the last few years Andre introduced innovative partnerships between the private sector, amongst others Coca Cola and BASF, and UN-Habitat for improved water and sanitation. Andre holds a post graduate degree in urban and regional planning, as well as a specialisation in tropical epidemiology, from the University of Heidelberg, Germany.

Bernard Gyergyay
Consultant
UN-Habitat
Cologne
Germany
bernard.gyergyay@gmail.com

Bernard Gyergyay is an Urban Mobility Consultant at UN-Habitat in Nairobi developing a best practice guide on ‘Urban Mobility Solutions for the Poor’. Prior to coming to UN-Habitat, Bernard was a transport planner for 4 ½ years at Transport for London. For 2 years he worked in the TfL Behaviour Change Department where he managed projects that generated demand for the Barclays Cycle Superhighway routes. Bernard has studied and researched transport policy and travel behaviour at the Institute for Transport Studies (University of Leeds), the Centre for Transport Studies (Imperial College London and University College London) and the National University of Singapore.
Committees & Partners
Ethiopian Steering Committee

**Feleke Haile Bachago**
Addis Ababa City
Government
Road & Transport Bureau Head
feleke_h@yahoo.com

*Feleke Haile* is a bureau head in Addis Ababa City Government Road and Transport. He has a master’s degree in Organizational Leadership. His first degree is in mathematics. He has thought and administered in schools for 10 years. He has served in The City Administration with different capacity from district head to sub-city chief executive for more than 9 years. He is currently heading the city’s road & Transport bureau.

---

**Bedilu Assefa Alemayehu**
General Manager
Anbessa City Bus Service Enterprise
LT.assefa@yahoo.com

*Bedilu Assefa* is the General Manager of the public owned City Bus in Addis Ababa. He has a master’s degree in organizational leadership and his bachelor’s degree is in management. He has served in eight different business enterprises with a capacity of Administrative, HR & Finance Department Manager for more than 30 years. He was a part time lecturer and he is also engaged in management consultancy works. He is currently the CEO of the city bus enterprise.

---

**Feleke Yimer**
Senior Advisor to the Mayor
feleke.yimer@yahoo.com

*Feleke Yimer* is a senior advisor to the Mayor on infrastructural affairs. He has a master’s degree in business administration. He has served in the public enterprise and the city administration with different capacities which include department manager in freight Transport Corporation, general manager in freight transport enterprise, the Addis Ababa City Transport General Manager & the city’s deputy manager. He is also engaged in transport consultancy works.

---

**Engineer Fekadu Haile**
General Manager
Addis Ababa Road Authority
fekaduhaile@gmail.com

*Eng. Fekadu Haile* is the General Manager of Addis Ababa Road Authority. He is a graduate civil engineer and has post graduate diplomas & certificates in urban transport, contract management, road maintenance management and construction management. He has more than 29 years of professional experience, especially in road projects. He has served with different capacities which include project engineer, project manager, office engineer, chief engineer, and senior advisor.

---

**Tibleste Asgedom**
Deputy Bureau Head
Addis Ababa City Government
Road & Transport Bureau
tibleste@gmail.com

*Mrs. Tibleste Asgedom* is deputy bureau head in the road and Transport bureau. She has a master’s degree in business administration. She has served for more than 25 years with different capacities. In the public transport corporation, she has served as a junior expert, as an expert & as a planning service head. She has also served as an operations department manager in one of the public enterprises. She was the general manager for the Addis Ababa Transport Branch Office. Currently she is heading the transport sector of the bureau.
### International Scientific Committee

<table>
<thead>
<tr>
<th><strong>Nico McLACHLAN</strong> - Managing Director, ODA (Cape Town, South Africa) - PRESIDENT OF THE SCIENTIFIC COMMITTEE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nico McLACHLAN</strong> is Managing Director of ODA. He has 25 years experience working in the field of Organisation Development and Change Management. He has predominantly focussed his work on public-private and local government sector mergers, acquisitions, restructuring and post-merger integration processes and has led numerous large scale and complex transformation processes in the Southern African Development Region. He has developed sector –specific expertise in amongst others the transport sector, the energy sector, the forestry and timber processing industry, as well as the biodiversity conservation and marine services sectors. In the period 1992 to 1999 he was intimately involved in the democratization of local government structures in South Africa and in 2000 he assumed the statutory position of Independent Chairman and CEO of the Cape Town Unicity Commission. The Commission was responsible for the amalgamation of the seven local authorities into the Cape Town Unicity Authority that today governs and manages Metropolitan Cape Town. In 2003 he acted as independent advisor to the SA Parliamentary Portfolio Committee for Provincial and Local Government on the Municipal Property Rates Act. Nico has held part-time teaching positions at both the Universities of Cape Town and the Western Cape, and acted as Guest Lecturer in Strategy and Change Management at the SA Naval Staff College in Cape Town. He currently serves as a member of the Scientific Committee of the international transport organization CODATU. He currently acts as industry transition advisor in the Cape Town IRT phase 1 project.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>O.P. AGARWAL</strong> - Senior Urban Transport Specialist at the World Bank Group (Washington, USA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Transport, Water, Information &amp; Communication Technologies Department, O.P. AGARWAL assists and advises all urban transport projects of the World Bank, across all regions. For nearly 30 years, he was a member of the civil service in India and as one his assignments he headed the urban transport division of the Ministry of Urban Development, Government of India. He was the key author of India’s National Urban Transport Policy and also developed a five year action plan for improving urban mobility in Indian cities over the 11th five year plan. He was also the Managing Director of the Urban Mass Transit Company, a joint venture company in India, engaged in developing sustainable urban mobility solutions. He has a master’s degree in Transportation and a Bachelor’s degree in Electrical Engineering.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>AKA Assafoua Joseph</strong> - General Secretary of African Association of Public Transport (UATP) (Abidjan, Ivory Coast)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Bernard ARTHUR</strong> - Chief Executive Officer of Centre for Urban Transportation (Accra, Ghana)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For nearly 10 years, Bernard ARTHUR works for the Ministry of Local Governements and Rural Development of Ghana. Then he has been involve as a consultant to work on urban development in Ghana. From 2007 to 2010, He was responsible for Institutional Development of both Public and Private Institutions involved on reforming public transportation, particularly mass transportation in Ghana. Since 2010, in the Center for Urban Transport, he works on improvement of Urban Transportation in Ghana by doing policy analysis and project design, advice to Government and private investors in the sector. He also promotes introduction of innovative ideas for the sector as well as acquisition and transfer of knowledge for the sector.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bedilu ASSEFA</strong>, General Manager at Anbessa Company (Addis Abeba, Ethiopia)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Roger BEHRENS</strong> Associate Professor in the Department of Civil Engineering (University of Cape Town), Director of the Centre for Transport Studies (CITS) (Cape Town, South Africa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roger BEHRENS is an Associate Professor in the Department of Civil Engineering (University of Cape Town), Director of the Centre for Transport Studies (CITS), and Director of the African FUT Centre of Excellence for Studies in Public and Non-motorised Transport (ACET). His current research activities relate to three fields. The first is the development of methods and practices to analyse the use of transport systems by pedestrians and to assess the quality of pedestrian infrastructure and environments, and the identification of frameworks through which improvements can be made. The second is the analysis of the dynamics and pace of changing travel behaviour, and the implications this has for the management of travel demand. A third is the regulation and improvement of paratransit, and its interface with integrated, scheduled public transport.</td>
</tr>
</tbody>
</table>
He teaches courses on transport system supply and demand management, local area transport planning and management, and non-motorised transportation.

- **Patrice BERGER, International Affairs Director, Lyon Town Planning Agency (Lyon, France)**

Patrice BERGER is graduated in architecture and « Sciences Po » in Paris, he has been working as a planner during 35 years in African cities and in Lyon agglomeration. He has been managing a big urban development project at Greater Lyon and joined Lyon Town Planning Agency to be deputy general manager.

For the last 12 years, he has been heading the international activities of the Lyon Town Planning Agency, composed of:

- Benchmarking of best practices of urban policies of European cities,
- Consultancy on planning and transport issues for donors or public local authorities
  - Capacity building, expertises, studies, in 15 big cities in Mediterranean, Africa, Asia, South America, in the frame of Lyon city to city cooperation

In this scope, the last 12 years, he has been notably providing support on planning and transportation issues to Addis Ababa city government.

- **Manfred BREITHAUPT, Senior transport advisor at Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), (Eschborn, Germany)**

Manfred BREITHAUPT received his Masters in Economics in 1975. After working as Transport Economist for a German consulting company in Europe, Africa and Asia he joined GTZ in 1981 and works as Senior Transport Advisor.

His experience covers transport planning, transport sector policy and restructuring, commercialisation and institutional development. He advised Governments, transport authorities and municipalities in over 50 countries. Over the last years he worked overwhelmingly in the area of sustainable urban transport. He is the editor of the Sourcebook on Sustainable Urban Transport, meanwhile covering over 30 modules and various training packages, having been translated in various languages and hosts the webpage on sustainable urban transport, www.sutp.org

He also works as an Assistant Professor for transport planning and policy presently at TU Munich and TU Berlin.

- **Wendell COX, Principal at Wendell Cox Consultancy - Demographia (St. Louis, USA)**

Wendell COX is principal of Wendell Cox Consultancy (Demographia), an international public policy firm and specializes in international urbanization, transport and demographics, with a particular interest in strategies that achieve public objectives with the greatest efficiency. Wendell Cox publishes *Demographia World Urban Areas*, which includes population, land area and density estimates for all of the world’s urban areas (agglomerations) with more than 500,000 population. He is also co-author of the annual *Demographia International Housing Affordability Survey*, which covers more than 300 markets in the United States, the United Kingdom, Canada, Australia, Hong Kong, Ireland and New Zealand.
He has consulted for public authorities in the United States, Canada, Australia and New Zealand and for public policy organizations and lectured widely. He holds appointments at more than 20 policy institutes, such as the Heritage Foundation (Washington) and the Montreal Economic Institute. He serves as visiting professor at the Conservatoire National des Arts et Metiers (a national university) in Paris, where he lectures on transport and demographics. He was appointed to three terms on the Los Angeles County Transportation Commission and to one term on the Amtrak Reform Council and holds an MBA from Pepperdine University in Los Angeles. His internet websites include http://www.demographia.com/ (public policy) and http://rentalcartours.net/ (descriptions of world urban areas)

- Xavier CREPIN - Senior Adviser for relationship with Civil Society, French Ministry for Foreign Affairs (Paris, France)

Xavier CREPIN received a PhD in Architecture and Master Degree Urban Planning. In 1988 he was appointed as programs Manager for urban and transport cooperation in developing countries, and in 1991 given responsibility for geographical coordination and financial ties between France and Southern African Countries, working for the Minister.

Having managed several World Bank programs as Consultant, he joined the Ministry of Foreign Affairs in 1978 for which he acted as an Adviser in Sub Saharan African countries for Ministers of Housing, Urban Planning, Transport and Public Works. Professor at Paris Sorbonne University and at Rennes University, and giving lectures in various European Architecture, Urban Planning and Transport Institutes.

- Kaushik DEB – British Petroleum (Mumbai, India).

Trained as an applied economist, Kaushik DEB has undertaken several assignments covering a variety of infrastructure sectors, focusing on the policy interventions to correct market failures in the overall context of liberalization of the economy. His experience includes sector restructuring studies in the transport and water sector, energy-environment-economy modeling, the use of green fiscal measures to meet environmental goals, and pricing reforms in basic service provisioning. He has worked closely with several municipal, state, and national level agencies in this sector advising them on policy and operational issues related to organizational and sector restructuring, both as a consultant as well as while serving on subject specific committees set up by various government departments.

With as a Doctor of Sciences from the ETH, Zurich, he guided and implemented research in applied economics in TERI University. He also was the Programme Director of the MBA Programmes in the University. He recently joined British Petroleum in India.

Chhavi DHINGRA - Project Manager, Capacity Building, EMBARQ India (Mumbai, India)

Chhavi is a civil engineer with a Masters degree in Transportation Engineering. For the last seven years, she has been researching actively on sustainability issues related to urban transport, particularly in the context of cities in developing countries. Chhavi led TERI’s research on ‘Sustainable Cities’ which amongst other things looked at a host of quality and performance measurement issues in basic service provision (including transport services) in urban areas in India and mechanisms to institutionalize these at a city level. Her work in the past includes research projects on sustainable mobility in urban areas, review of local, regional and national level transport policies, analysing clean energy and transport access for the urban poor, doing a training needs assessment for personnel working in urban transport in Indian cities and suggesting framework for performance measurement of public transport services. In the last couple of years, Chhavi worked with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH’s Sustainable Urban Transport Project (SUTP) in the area of augmenting training and capacity building activities on urban transport for a variety of
government and non-government stakeholders in developing cities. Chhavi recently joined EMBARQ India’s team as Project Manager, Capacity Building and continues to work on translating research into knowledge and capacity building products along with contributing to in-house research on sustainable urban mobility. She is also currently authoring a training cum learning module on institutional development for urban transport in India, for the Ministry of Urban Development.
Created in 1978, The United Nations Human Settlements Program (UN-HABITAT) aims to help the urban poor by transforming cities into safer, healthier, greener places. UN-Habitat’s missions are organized within the overall framework of sustainable urban development and focus on three programmatic priorities: new urban planning, including mobility and energy; local institutions, governance, and urban legislation; and urban economy and municipal finance. Concrete action of UN-Habitat has an operational part (field projects) and a normative one (research and publications).

In the urban mobility area, UN-Habitat policies promote several complementary approaches, including: urban planning models and community patterns that reduce the need for motorized travel; improved infrastructures for pedestrians and cyclists; expanded public transport systems; comprehensive mobility management; and more efficient technologies for vehicles and transit systems.

AFD is the Groupe Agence Française de Développement, a bi-lateral development finance institution that works on behalf of the French government. AFD’s activities are aimed at reducing poverty and inequalities, promoting sustainable economic growth, and protecting “Global Public Goods” of benefit to all humanity. As it is stated in its last Strategic Orientation Project, AFD uses 80% of its subventions and 60% of its total budgetary resources in Sub-Saharan Africa.

**AFD is working on financing Addis Ababa’s BRT system, for a cost of 30M€.**

United Cities and Local Governments of Africa (UCLGA) is an international pan African organization assembling African cities and local collectivities. UCLGA gathers 40 national associations of local collectivities and 2000 cities having more than 100,000 habitants. UCLGA represents more than 350 millions Africans. The mission of the organization is to promote decentralization and reinforce the role of local collectivities in the amelioration of living environments of African populations.

**Decade of Action for Road Safety 2011-2020 is a U.N.- World Bank campaign that aims to save five million lives, prevent 50 million injuries between now and 2020. In absolute numbers, the road-related mortality rate per capita in Africa is the highest in the world. Considering that Africa has only 4% of the world vehicle fleet, the rate of return on investment to reduce crashes is very high in Africa, and there is clearly a strong justification to identify and implement efficient crash reduction measures. During CODATU XV, the World Bank will present a special session on this campaign.**
GIZ is the German Agency for International Cooperation an international enterprise owned by the federal Government. GIZ supports the German Government in achieving its development policy.

GIZ notably assists its partner countries in designing and implementing strategies to reduce carbon dioxide emissions in the transport sector. The primary focus lies on improved public transportation systems, integration of transport systems in urban planning and the promotion of energy efficiency in the transport sector.

Since 1987, the Sub-Saharan Africa Transport Policy Program (SSATP) facilitates policy development and related capacity building in the transport sector in Africa. It is a non-profit think tank funded by development partners. The basic objectives of the Program are multiples. Firstly, SSATP seeks to improve the expertise development among the 36 member countries’ relevant institutions. Secondly, it documents Africa-based and Africa-led transport policy development and institution. Moreover, the Program ensures access to transport research and databases. Also, it directly responds to scientific requests from member states and stakeholders. By achieving those objectives, SSATP fills the gap in the transport research chain capacities for policy development and planning in Africa.

After the conference, SSATP members will gather to identify, on the basis of the conference, first key elements of the Third Development Plan of the program, which should start in 2014.

The World Conference on Transport Research Society (WCTRS) is an organization whose purpose is to provide a forum for the interchange of ideas among transportation researchers, managers, policy makers, and educators from all over the world, from a multi-modal, multi-disciplinary, and multi-sectorial perspective. The Society has become a primary forum for such international exchanges in transportation. Its World Conferences, organized every three years since 1977, are the place where leading transportation professionals from all countries convene to learn from one another.

The best articles presented at the conference will be published in the journal of the new organization, Case Studies in Transport Policy.

The Urban Community of Lyon, also known as Grand Lyon, is the intercommunal structure gathering the city of Lyon (France) and some of its suburbs. It comprises 58 communes. In 2010, Grand Lyon has signed with Addis Ababa a decentralized cooperation agreement whose purpose is the transmission of technical expertise in urban development, waste management, urban transport and urban planning.

The planning agency of the Grand Lyon notably conducted the feasibility study for the BRT system in Addis Ababa.
Région Rhône-Alpes is one of France’s 22 administrative regions. It has the sixth-largest economy of any European region. The trains, buses and coaches are largely funded by the Region, which also develops the region’s railway stations, tries to offer affordable fares to everyone and is increasing the frequency of services. Moreover, the Région is in charge of the spatial planning. It works towards a balanced spatial development approach meeting its social improvement, economic efficiency and environmental protection objectives.

The Syndicat mixte des transports pour le Rhône et l’agglomération lyonnaise (SYTRAL) is the transport organization authority of Lyon and its area. Its territory includes 1.3 million persons. SYTRAL also leads decentralized cooperation actions with cities developing their transport system, notably Addis Ababa.

Special thanks to:
- All the Ethiopian Steering Committee members
- All the City Government of Addis Ababa staff
- CODATU staff & members
- Association France Ethiopie – Corne de l’Afrique
- French Embassy in Ethiopia
- Ethiopian Embassy in France
- Ethiopian Civil Service University
- AACPPO (Addis Ababa City Planning Project Office)
- Lyon Town Planning Agency – UrbaLyon
- African Union
- The World Bank
- AIMF (Agence Internationale des Maires Francophones)
- Transitec
- KTS Voyages
- Hilton Hotel