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Sustainable mobility and urban development in cities of the South

How much time can one reasonably set aside for travel every day? How much is it acceptable to spend every month on one's mobility? What conditions of transport is one prepared to endure to get to the workplace or see friends and family?

These questions, very much burning issues in cities of the North, at times elicit very different answers in cities of the South. The poorest people can spend hours every day in overcrowded buses that cost them a quarter of their income. The recent demonstrations in Brazil have brought home the harsh realities of everyday life of the less well-off, who cannot afford a car and depend on public transport, when they are not simple pedestrians.

In cities of the South, walking and mass transport dominate mobility. But on the road private vehicles (cars and motorbikes) play first. They provide their owners incomparable accessibility and mark their social success. The push for vehicle ownership is a permanent feature in cities of the South. Urban expansion is likely to increase the dependence on cars and fossil fuel consumption.

The transport sector is already one of the leading contributors to climate change -it accounts for nearly 23% of global CO₂ emissions- and consumes over half the petroleum produced. Between 2000 and 2050, transport-related global emissions will increase by 140% with Southern countries accounting for over 80% of this

increase mainly due to the growth in road traffic. The paradox is that despite the still low levels of car ownership, the congestion is rife in cities of the South. Where the institutional framework allows it, the authorities try to organise traffic, invest in public transport systems and develop multimodal policies that encourage walking and cycling.

We will find in this issue various examples of current sustainable mobility practices in cities of the South: in Turkey where the declared priorities of local authorities in favour of public transport are at loggerheads with the growth in car use; in Latin America where BRT projects sometimes have difficulty connecting with small-scale transport; in Hanoi where the model of two-wheel vehicle ownership in the Vietnamese capital is being called into question; in Africa where mobility should be used more to promote development; and finally in Addis Ababa where cooperation with the city of Lyon has yielded significant results in terms of integrated urban transport planning ■

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Urban planning and transport policy in Turkish cities

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Turkey is one of the emerging countries where economic growth drives urban development. It is also one of the countries with the highest fuel price in the world. Ela Babalik Sutcliffe, Associate Professor at the Middle East Technical University, Ankara (Department of Urban and Regional Planning), focuses here on the sustainable mobility policies applied in Turkish cities



Sustainable mobility policies comprise a set of different, complementary strategies. Some aim to increase the modal share of walking, cycling and public transport in urban travel. Some aim to discourage the use of cars and increase the share of energy-efficient vehicles. Others seek urban planning and design solutions based on compactness, density and diversity, and urban forms and patterns that promote public transport. Still others endeavour to promote safer driving and lower speeds in urban areas.

Turkish cities have mixed performance in implementing these strategies. They have strong advantages in terms of population density (200-300 inhabitants/ha is common in most cities), the rate of walking (around 50% even in a large city like Istanbul) and the

rate of car ownership (about 200 cars for 1,000 inhabitants in Ankara and around 140 in Istanbul and Izmir). The result is relatively low car use (20-30% of motorised trips) and a high reliance on public transport. However, this has not prevented urban sprawl and a rapid increase in vehicle ownership and car use. In Ankara car use increased from 18% in the mid-'90s to 30% in 2010.

Walking is widely practised but the conditions for making trips on foot are rather poor due to illegal parking and numerous obstacles cluttering very narrow sidewalks. The paving, drainage and pedestrian paths are also of poor quality, whereas accessibility for persons with reduced mobility is often neglected.

While public transport use is quite high in numerous Turkish cities (over 65% of motorised trips in Ankara and Istanbul), the quality of transport is poor with over-aged and crowded buses running on poor quality fuels.

To meet future travel needs, a number of Turkish cities have introduced high-capacity urban rail systems; however there is very little done to improve the comfort, quality and reliability of bus services. Metrobus in Istanbul remains the only Bus Rapid Transit (BRT) system in Turkey, although its high ridership is a testament to the quality of service offered by dedicated bus lanes. While paratransit transport by minibus (*Dolmuş*) plays an important role, its lines need to be better regulated and organised so as to facilitate the shift towards higher-capacity transportation.

Despite the widespread use of public transport, most Turkish cities suffer from congestion. Local authorities, however, are reluctant to restrict car use and manage parking better. Instead, they tend to develop the road network and increase facilities which foster travel by car. Urban growth patterns today are highly dependent on the car. Accessibility by car is an essential criterion for developers and current urban planning regulations seem powerless to combat urban sprawl, out-of-town shopping centre development, and new housing estates that foster extremely car-oriented life styles.

Yet positive developments are taking shape. Bike lane and city-bike schemes are on the increase as a result of a grant made available by the central government. Some local authorities have increased the number of low-emission vehicles in their public transport fleet. Istanbul, Izmir and Eskişehir are pioneers in integrated fare and ticketing systems that multimodal urban transport. Izmir's "Transformation in Transportation" project is a model for physical and fare integration in public transport. Istanbul launched P+R parking facilities that also introduced a new pricing scheme for car parks in the city. Eskişehir has turned the main streets in the town centre into pedestrian- and tram-only areas while launching its tramway. These good-practices indicate achievements for sustainable mobility and may hopefully be transferred to other cities.

Three decades of urban transport in countries of the South. *The Ralph Gakenheimer viewpoint.*

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In May 2013, Jean-Claude Ziv, founder and former General Secretary of CODATU, passed away. For thirty years you have all participated in steering discussion on urban mobility in developing countries. What in your view are the main developments in this field?

Wherever he may be, my colleague Jean-Claude Ziv can relish seeing the role of urban transport in the cities of developing countries finally gaining recognition. An extraordinary and innovative figure that was particularly fond of times like these, he contributed in no small way to this awareness.

Thirty years ago the international transport planning community advocated the expansion of informal public transport. It has since become apparent that other solutions are necessary. Discussions on Curitiba's *Bus Rapid Transit* system were launched at the

time and presented at the first CODATU conference held by Jean Claude Ziv at Dakar in 1980. Jaime Lerner, Mayor of Curitiba, had just opened a new world of possibilities. The rest of the world had waited a long time for the quality of the newly commissioned transport system to be revealed. Today we acknowledge that all cities, regardless of size, need a public transport system that provides a high level of service.

What are the challenges we still face?

Very few of the other issues related to this key sector have made any significant progress during these last 30 years. The interaction between urban accessibility and poverty is still dealt with poorly, even though innovative projects have been undertaken, such as the one in Medellín (Colombia) involving the installation of cable cars on the steep mountainsides. While this mode is currently expanding, the

issue of accessibility for the poorest remains unresolved.

Another disappointment stems from the modest outcomes of efforts to fund urban transport systems. Scarce financial resources of local governments throughout the developing world, coupled with fragmentary organisation of urban transport, have hampered the development of public-private partnerships. Private sector participation in public transport projects has been far too limited which, to my mind, is this sector's severest handicap.

Moreover, global warming and the pressure we exert in general on the environment have steadily increased, reminding us of the relevance of alternative modes of transport. We are trying, but the backlog is big and the new demands considerable.

Let us however not be over pessimistic. These very brief comments on three decades of activity in the urban transport sector do not speak of the numerous sparks of hope. An excellent, more comprehensive view has been developed by Kenneth Gwilliam in "Cities on the Move - Ten Years After" (Research in Transportation Economics, Vol. 40 (2013, pp 3-18), a journal edited by a group of CODATU contributors that Jean Claude had helped to bring together. However, the question «*What is next?*» remains, but unfortunately without the benefit of Jean-Claude's contribution.

*Comments by Ralph Gakenheimer, Professor Emeritus of Urban Planning, MIT
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BRT and small-scale transport in South America: An indispensable alliance

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Invented in Curitiba (Brazil) in the 1970s and following the success of Bogotá's Transmilenio in 2000, Bus Rapid Transit (BRT) has become the most popular mass transit system in Latin America and is exported around the world. Pablo Salazar Ferro, researcher at the Centre for Transport Studies, University of Cape Town, South Africa, explains here why this system has not always acted as a catalyst for the integration of small-scale transport operators.

The coexistence of small-scale transport and institutional or formal transport systems is an essential feature of most South American cities. For decades the mass transit systems of these cities have struck a balance between these two components. However, the recent introduction of BRT (*Bus Rapid Transit*) systems has upset

this balance. The commissioning of BRT systems in South America is clearly a success operationally, but this mode of transport has also resulted in a conflicting relationship with small-scale transport operators.

First it is important to distinguish Brazil from other South American countries. Between

1970 and 1980, Brazil saw the consolidation of existing private transport companies as well as the commissioning of high capacity bus services on a trial basis. This unique situation allowed a smoother integration of recent BRT systems. The now institutionalised private firms kept their traditional bus and minibus services while acquiring the

operation of BRT systems. In this context, only a few small private transport firms recently emerged are attempting to act as a counterweight to institutional transport.

In the Spanish-speaking cities, the development of BRT systems has been seen as a tool for transforming the entire public transport system.



Driven by a modernising vision in which small-scale transport services are viewed as an obstacle, the most acclaimed BRT schemes aim to replace them, partially or wholly.

The coexistence of new BRT systems and small-scale transport services is marked by operational philosophies that are difficult to conciliate. The argument against small-scale transport services in the city is that they are provided by a fragmented group of operators using low-capacity vehicles operating along routes that are far too long and cross the city centre thus sharpening the problem of congestion, the crying lack of intermodality and the competition on routes between operators. These features are commonly cited as archetypes of an operationally inefficient system. BRT systems, on the other hand, meet operational optimisation criteria: high-capacity vehicles on

the main network, intermodality based on feeder routes to outlying areas, dedicated corridors and services granted to companies by a regulatory authority. With BRT projects, the authorities create competition for the market, via competitive tenders, rather than competition in the market.

Accordingly, projects such as Quito's Trolebus (1995), Bogotá's Transmilenio (2000) or Santiago's Transantiago (2007) have produced abrupt changes in the balance between institutional transport systems and small-scale transport services. In Bogotá and Quito, BRT systems operate disconnected from small-scale transport services, thereby creating tensions between the two systems. In Santiago, only the biggest bus companies were included in the project to transform the surface mass transit system. Small-scale transport has all but disappeared. As a result, the new sys-

tem suffers especially in terms of the city's accessibility to outlying areas.

In South America, the conflicting relationship resulting from the introduction of BRT systems has led to the creation of a dual transport system. While the operational performance of BRT systems is more than adequate, these systems have failed to integrate small-scale transport services. Yet small-scale transport often continues to enable most public transport trips (74% in Bogotá, 76% in Quito), despite having its flexibility and geographical coverage undermined by conflicting relations with the BRT system.

For this reason, the main challenge facing cities with BRT systems is to integrate the different services in order to achieve a balance between efficiency and coverage. In fact, small-scale transport and the new BRT systems each

have a role to play in the urban context of South America but they encounter significant obstacles to their integration due to adverse operational practices and organisational structures.

Planning an integrated transport system and Lyon / Addis Ababa cooperation

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For over ten years, the urban planning agency for the development of the Lyon conurbation has been supporting the Addis Ababa authorities in the field of urban transport under a decentralised cooperation programme. Patrice Berger, the agency's Director of International Activities, makes a rapid assessment here.



Addis Ababa is a booming metropolis. Over the coming decades the Ethiopian population will exceed 110 million and the population of the capital will increase from four to over ten million.

For over 13 years, the urban planning agency for the development of the Lyon urban area has been lending technical support to the urban planners and decision makers of the city of Addis Ababa aimed at organising its development. With support and funding from the state, the French Embassy, Greater Lyon (Grand Lyon) and the French Development Agency (AFD), it took part over two successive sessions in the review of its master plan (2000/2002 and 2012/2013).

The hosting by Addis Ababa of the 15th CODATU conference in October 2012

demonstrated the city's determination to showcase itself as an African city with ambitions in this area and as one of the first to introduce rail-based public transport. Ethiopian decision makers wish to draw on best practice to build an integrated public transport system combining heavy-duty and medium-duty modes, bus lines and small-scale transport.

For the last 10 years the Ethiopian state and the city of Addis Ababa have made steady progress in implementing urban planning initiatives. In 2003, following a new master plan, the city's Roads Department embarked on a policy of reserving rights-of-way and dedicated lanes for buses in the city's two key development areas. In 2006, following a comparative study of BRT (*Bus Rapid Transit*) and LRT (*Light Rail Transit*) solutions and a valuation by an Indian firm of experts, the government opted for the deve-

lopment of two medium-capacity LRT main lines and launched an international consultation. Today these lines are under construction with Chinese pre-financing and technical assistance.

In 2010, the city set up a Transit Authority and introduced a BRT policy as a complement to LRT, involving the construction of a first line with AFD pre-financing. In the last five years, the municipal transport company Anbessa, an applicant for the operation of BRT, has modernised its bus network and now operates 105 lines with 650 buses, including 100 that are articulated.

Since 2001, Lyon's Urban Planning Agency, backed by its institutional and technical partners (in particular Greater Lyon and city of Lyon services: Sytral, Egis rail, CODATU), has supported this policy by providing assistance

at different levels: polycentric urban planning, urban corridor development, pre-feasibility study of dedicated corridors, main Addis Ababa hub urban development project, studies of public spaces, etc.

In a country where skills in this subject are still scarce, its support and that of its partners are designed to introduce new working methods among players aimed at building over time -a dimension often underestimated by the Ethiopians- an integrated system of public spaces and urban transport.

The place of powered two-wheelers - Lessons learnt from Hanoi

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There are an estimated 300 million motorbikes on the road in the world today, of which 85% are in Asia. Vietnam is a prime example of the boom in motorbike use in developing cities; Kamel Bouhmad, a consultant in urban mobility and Programme Officer at UN-Habitat describes here the advantages and limitations of this mode of transport for urban development. Powered two-wheelers, threat or opportunity?

In Hanoi today, four in five inhabitants get around in powered two-wheelers (motorbikes and motorbike taxis). Thanks to this flexible mode, the number of trips made per person and per day is significant for this middle-income city. The downside is that Hanoi is one of the cities with the worst air pollution. Main

means of locomotion, the motorbike has received little attention in the city's urban development strategies.

For the user, the powered two wheeler (PTW) is unique in that it has the advantages of the private car (freedom of use, point-to-point link) as well as those of public trans-

port (affordable fare, regular trip time), without their respective disadvantages. In Hanoi, those advantages stem from lax regulations and controls relating to motorbike ownership and use: low taxes, limited maintenance and technical checks, tolerance for pavement parking and goods transportation.

For the community, the motorbike is a means of facilitating inhabitants' access to work and city services, limiting heavy investment in mass transit and optimising road use (speed-flow). However the negative externalities produced by this mode of transport are substantial in terms of noise and atmospheric pol-

lution as well as the accident rate. In the face of this delicate balance between the user and the community, local authorities hesitate to curb the growth of PTWs. Against this background the PTWs fleet doubled between 2002 and 2008. The rate of PTW ownership has today reached levels of car ownership in some European countries (500-600 vehicles for 1000 inhabitants).

To control traffic in the Vietnamese capital, it is necessary to understand and accept the central role played by motorbikes and to make them an integral part of urban planning policies. The development of mass transit and the management of individual mode use (cars and motorbikes) are inseparable and should be carried out jointly and gradually. That is what has so far been lacking in Hanoi.



The city is at a turning point today as four metro lines and a Bus Rapid Transit line are to open by 2020. By that date, the city will also have 1.8 million new dwellers. In this context, the search for synergies between modes and urban transport actors is essential to the construction of a multi-modal and sustainable transport system. There are many potential drivers: contracting with the Xe Om (motorbike taxis) to ensure good local connections and feeder services to the mass transit system, development and benign pricing of park and ride facilities, suitable tax regulations and control mechanisms for PTWs, etc.

The «two-wheeler phenomenon» is not limited to South and East Asia. The last twenty

years have seen comparable trends in the large towns of West Africa, in particular Ouagadougou and Cotonou where imported Chinese motorbikes are sold for a low price. Recently this trend is also visible in East Africa. Initially cycle taxis, the boda-bodas, are slowly being transformed into motorbike taxis in Kenya and Uganda.

Given the rapid population growth in the African continent, the widespread problems of traffic congestion and the general crisis in public transport (governance and funding of the sector), it is very likely that this trend will spread and escalate in the coming years. Ad hoc planning and regulatory instruments are needed to manage this upheaval in urban mobility in developing cities.

Urban mobility, a tool for (re)shaping the African city

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The 15th CODATU conference on the role of urban mobility in (re)shaping cities was held in October 2012 in Addis Ababa. Bernard Abeiku Arthur, guest professor at CNAM and member of the scientific committee of the conference, returns to this major issue for African cities and calls for integrated urban transport planning policies in the cities of the continent.

Urban development in Africa over the next ten to twenty years is certainly one of the most exciting questions which the world faces. UN-Habitat projections suggest that by 2025 the urban population of Africa will reach 640 million, a higher figure than the entire population of Europe. Africa will however remain the least urbanised region of the world. The challenges are immense.

Today, most African cities are characterised by an inadequate infrastructure network,

inefficient and unregulated mass transit services and significant urban congestion. City centres are often chaotic while the outlying areas are urbanising endlessly. Urban planning is lagging behind development and is not catching up. The 15th CODATU conference focused on the type of planning likely to enable African cities to find their way.

If it is to hold its own role in the global economy and attract international investment and visitors, the African city must

develop a clear vision of its future and put in place urban development strategies. Africa has nearly half of the planet's natural resources; yet it is the least economically developed continent. In most African cities, it is the national government that invests directly in housing and transport infrastructures, waste management, healthcare, education and sanitation. A clear vision of «who, what and when» should be essential for policy makers in African cities. However, this is rarely the case.

Effective decentralisation is necessary. It involves decentralising taxation, developing regulatory frameworks, renewing financial engineering skills, putting in place an urban development strategy and devising effective mobility planning solutions. National policies for town and country planning, economic development and mobility will of course remain necessary to guide urban planning and management. A balance must be found between top-down guidelines, local planning and a sounder approach



to planning the African city of the future.

African cities must develop their own long-term vision. This will express itself in a town and country planning programme, a long-term infrastructure investment plan, urban development plans and mobility strategies regarded as dynamic guidelines rather than static references. Instead of following sequential processes, urban planning documents (land use, urban development, infrastructure and mobility) should be prepared in parallel using an iterative

process. The interdependence between space, prioritisation of activities, infrastructure and mobility can be further explored to obtain maximum results.

African cities must shift from «prescriptive» planning to «curative and facilitative» planning. A change of method is required. Rather than stating «*what needs to be done and how is it to be done*», one should describe «*what may be done and how it may be done*». Integrated development planning must show its relevance in the future because planning

is unable to keep pace with growth. The best approach to deal with the issue of spontaneous and low density urbanisation of peripheral areas would be «facilitative planning». The challenge of «integration» could be addressed *ex ante* rather than *ex post*.

Globalisation demands that African cities have the right data and make the right choices to be part of the world economy. The cities of the South must invest in collecting data on urban mobility and its organisation, on infrastructure and behavioural changes in order to gain a better understanding of current realities, while throwing light on new trends and on the future needs of urban populations.

The choice of mass transit systems should meet «current and future demand» and be part of a strategy involving an «evolution of modes» rather than a «choice of modes». Accordingly, cities should begin by analysing their current modal shares and financing gradual progress as well as investment in new infrastructure. To enable modal switching on a large scale, it would be equal-

ly important to foster changes in user behaviour by involving the small-scale transport sector and the actors of joint change empowerment, including institutional planners, designers and policy makers.

This approach should allow African cities to develop their own mobility system which meets the mobility needs of their inhabitants rather than «*copying what is done all over the world*».

CODATU XVI conference in Istanbul in 2015: Impact of urban mobility on climate and air quality

The next CODATU conference will take place in Istanbul in early 2015. It will be held in partnership with Istanbul Technical University (*Istanbul Teknik Üniversitesi*). It will focus on «*Energy, Climate, Air Pollution: the role of urban transport policies in developing countries and emerging economies*». While the increase in road traffic-related emissions in emerging countries is faster than their economic growth, this event will help to re-examine the issues of energy management in urban transport.

Several months before the 21st conference on climate change to be held in Paris in December 2015

(COP 21), the CODATU XVI conference will be a reminder that urban transport has considerable potential for managing CO₂ emissions. Many options, whether tried and tested or innovative, are available to decision makers through urban planning, mobility, economic and industrial policies.

The implementation of pro-active strategies for managing energy consumption in urban mobility programmes has obvious additional benefits, particularly in terms of air quality. Currently, there are 3.2 million premature deaths in the world due to air pollution. Some cities with fast growing vehicle fleets have reached alarming pollution thresholds.

The cities of the Mediterranean Basin are directly affected by these changes. The Turkish experience, in particular, deserves recognition.

The CODATU association, which is a member of the SLoCaT network and associated with the *Bridging the Gap* initiative, helps scientists and field experts to provide local and national decision makers with arguments that help redirect policies towards sustainable urban mobility.

In Brief



A scientific symposium on **Local Government International Action** will be held in Grenoble from 4 to 6 December 2013. It is organised by Cités Unies France (CUF) in partnership with the Grenoble Institute for Political Studies (IEPG) and the Institute of Advanced Studies in Cities and Local Government International Action (IDHIL).

<http://www.cites-unies-france.org/spip.php?article1854>



The next conference -**Transforming Transportation**- will be held in Washington on 16 and 17 January 2014. This event, hosted by the World Bank and Embarq during the Transport Research Board week, will bring together the international community of experts on urban mobility.

<http://transformingtransportation.org/>



MOOC - Africans Cities "on line"

"On-line training" in African city planning will be offered from February 2014 by the École Polytechnique Fédérale, Lausanne (EPFL). It will cover planning tools to address the big urban issues in Africa: climate change, energy, right to the city, land use, etc.

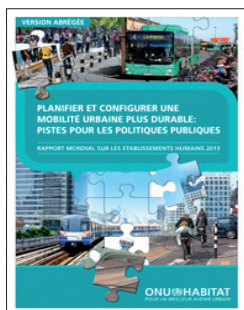
<https://www.coursera.org/course/villesafricaines>



The next **International Transport Forum**, held by the OECD, will be hosted in Leipzig (Germany) from 21 to 23 May 2014. Its theme will be "Transport for a Changing World: Understanding Trends - Shaping Responses".

<http://www.internationaltransportforum.org/2014/>

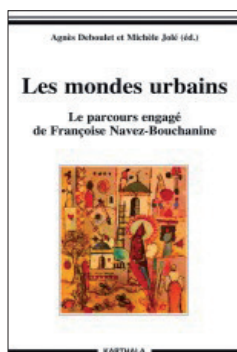
Publications



PLANNING AND DESIGN FOR SUSTAINABLE URBAN MOBILITY

Published by UN-Habitat, this report highlights the importance of close integration between transport policies and urban planning. If better accessibility is the ultimate aim of a transport system, this is not the only way to achieve it. It also means acting on urban planning and design and the functioning of cities. The report makes a number of recommendations for urban policies.

<http://www.unhabitat.org/content.asp?typeid=19&catid=555&cid=12336>



LES MONDES URBAINS – LE PARCOURS ENGAGÉ DE FRANÇOISE NAVEZ-BOUCHANINE

Published by Karthala, this book brings together contributions from urban researchers and practitioners that worked with Françoise Navez-Bouchanine, the sociologist who died recently. Researcher, teacher and professional with an active commitment to "stakeholder sociology", Françoise Navez-Bouchanine worked extensively in Morocco on urban housing in transition and the confrontations between the physical shapes and social purposes of dwellings.



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