

# Foreword

*The aim of this paper, drawn up by the ISTED Urban Transport Group\*, is to make an appraisal of the urban transport situation in developing countries and to propose building blocks of a development strategy for this sector.*

*The proposals concern the major cities of the South, particularly in the ACP countries, the Maghreb, and Central and Latin America where the issues are the most urgent and challenging (except for megalopolises, which require a further quantum leap).*

*Beyond the scope of this report which, to serve its purpose, must be limited, the appraisal of the urban transport situation shows varying degrees of similarity in many cities and the proposed measures can be applied liberally to the cities of the South. However, these measures must be adapted to each city's specific features, socio-economic context and policy, size, level of development and financing capacity...which affect the choice of vehicles and equipment and the organization and viability of the contemplated urban transport systems. The proposals are for public transport systems of medium and high capacity and result from a comprehensive approach to the organization of all the transport modes.*

*\* The ISTED Urban Transport Group brings together key institutional players in the French urban transport sector, among which are representatives of AFD, CFME-ACTIM, the Treasury, the Ministry of Foreign Affairs, the Ministry of Public Works, Transport and Housing, the Ministry of the Environment and Land Use Planning and professionals from contractor companies and engineering firms in the urban transport field. It is chaired by Georges Cavallier, vice-president of the ISTED "Cities" Department, and is managed by Jean-François Janin, deputy director in charge of international affairs at the Land Transport Directorate. The report was drafted by Brigitte Grégoire, seconded to the group by the RATP<sup>1</sup> and reporter for the ISTED Urban Transport Group, by Chantal Barbieux, Head of the ISTED "Cities" department, with the help of Françoise Meymerie, expert from SYSTRA, Xavier Godard, research director from INRETS, Jean-Robert Vaux, DAEI<sup>2</sup>, Task officer in charge of SME support to export, Philippe Bloyet, consultant and Raymond Maubois, unit manager of the RATP Development Department.*

*This report, and the two pilot case studies (Dakar and Abidjan), were presented to the plenary meetings on 5 February and 27 May 1998. The report includes contributions from professionals and input from assignments in the various countries. The content of this working group evolved out of discussions within the framework of CODATU (Cooperation for the continuing development of urban and sub-urban transportation).*

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*This summary document does not necessarily reflect in full the positions of each institution.*

# Abstract

*The report is in two parts*

**T**he first part is an analysis of the urban transport situation in cities of the ACP (African, Caribbean and Pacific) countries, the Maghreb and Central America. It is based on the many already-existing records and studies. It provides further information on the recent period marked by the devaluation of the CFA franc in some countries of francophone Africa, and gives the general outlook for these countries.

**T**he second part "Building blocks of urban transport development strategy" analyses the need for and conditions of development of those "mass" transport systems that make up the network structure in major cities.

- Today's urban public transport systems in the major cities contained in the sample<sup>1</sup>, and more generally in the cities of the South, are in varying degrees of crisis. In the ACP countries, the urban transport situation is a critical area of concern compounded by galloping urban growth in this region's cities and a lack of any public space management policy.

The mass transport supply is becoming increasingly inadequate for travelling requirements. Owing to the lack of public transport and people's small means, walking may account for up to 50% of movements<sup>2</sup>. In many African capitals and major cities, the disappearance of national urban public transport companies left a void that has gradually been filled by small private operators and informal or even illegal transport. These small operators may partially satisfy travelling requirements but they are limited in terms of the quality and quantity of their service - inadequate network coverage, lack of organization, dilapidated vehicles, high fares, - and in terms of congestion, pollution, accidents and user safety. They have a negative impact on urbanization which is spreading over increasingly wide-ranging areas, unequipped areas with "spontaneous" districts remote from city centres. If current trends continue, even in a more professionalized sector, the gap is bound to widen between public transport supply and increasing needs.

- The report analyzes the essential need to implement a strategy that will introduce, reintroduce or develop "mass" transport systems, either with buses (standard or articulated) or by exclusive right-of-way urban transport systems on the busiest roads, thereby forming the backbone network around which lower-capacity vehicles will be organized. The rehabilitation of urban railway lines must be given priority for its effects on traffic and urban development, or at least the rights-of-way must be preserved.

It is a complex procedure to introduce a new, heavy system but the example of the new light rail transit system in Tunis, which benefited from German assistance, is encouraging. It forms a considerable organizational, financial and technological leap forward, which challenges the existing systems. Tramway projects are being developed in Central America and Latin America and these are very likely to see the light of day. BOT-type concessions are often used as benchmarks for implementing such systems. But these arrangements sometimes meet with difficulties inherent in the financial imbalance of urban transport and require public authority intervention. This is the case in the concessions that have developed over the past ten years in France for building and operating exclusive right-of-way transport.

It is important to encourage pilot projects, whether on the American continent or, with customized French involvement, on the African continent, for the shopwindow effect this would have for French knowhow. This is also the reason for careful follow-up of the Casablanca underground railway project, for which France provided study support and funding, as it will be a reference for ongoing projects around the Mediterranean basin and even farther afield.

- The aim of this report is to make a strategy-oriented **analysis of the conditions for technical, financial and institutional viability of these mass transport systems in the major cities of the South.**

- The development of urban public transport is a prerequisite for the sustainable development of cities of the South and a determining factor in the quest for their competitive economic strength and social cohesion.

The need for large cities of the South to be equipped with organized urban transport systems is based on economic considerations: transport provides access to schools, jobs, health and activity centres. These are trips that have to be made and they account for the greater part of urban mobility in these cities. Today, poor quality, or even total lack of transport is a cause of absenteeism. The school bus service is already a major problem that is certain to become worse in the years to come. In these countries, more than 70% of the population are aged under twenty-five.

The need for organized urban public transport systems is based on a concern to reduce factors of social and political instability, prevent unrest due to the lack of transport and the effects of spatial segregation (people are increasingly living on the outskirts of towns). It also results from a concern to protect the environment. Not enough importance is paid to environmental degradation in these countries where the most basic facilities are lacking, and this is not without effect on the quality of our own environment. The problem is that in the next ten years, 23 of the 27 cities with more than 10 million inhabitants and 36 of the 44 cities with more than 5 million inhabitants are likely to be concentrated in the South. Current atmospheric pollution trends in cities of the South are alarming and a real headache for the international community<sup>3</sup>.

- The proposed organization of the urban transport market is demand-driven and based on a ranking of the transport supply that gives each transport mode its place within a structured, organized network. It does not oppose the public sector to the private sector, although some of the sector's privatization measures are controversial. It uses an approach aimed at meeting travelling requirements under the best possible conditions and at the lowest cost to the Community. In this context, different transport service

categories coexist: accessibly priced mass transport<sup>4</sup> handled under agreements between the operator and the regulatory authority; individual and shared taxis for a more targeted, customized service; feeder bus and minibus services and local services to districts inaccessible to large vehicles.

This forward-looking policy is the only one that can provide a solution to the foreseeable explosion in travelling requirements and the risks of saturation-blocking in the running of cities. It will involve facilities that require heavy investments to be engaged without delay and phased over time. It also needs an approach that will bring together the interested parties, and possibly the beneficiary countries and international donor organizations.

- An analysis of the financing problem distinguishes the operation of the urban transport system from investment - initial investment and reinvestment - and from the financing of roads and road facilities. The urban transport sector cannot be considered as a purely commercial sector in which expenditure and revenue must balance without any external intervention. Our approach takes account of the fact that this sector plays a key role in the economic and social development of cities and has a positive or negative effect on the community<sup>5</sup>. The framework of public service missions of an economic and social nature may give rise to compensation and where this is decided, it must be given without personalizing the operators, which is by no means always the case today<sup>6</sup>.

Public authority intervention is necessary in the organizing and programming of urban transport, road facilities and land reservation. It must cover the financing of investments rather than road operations because of the large sums involved and the financing terms.

● Owing to the heavy demand in the big cities of the South, it may be possible for road transport operators to achieve operating equilibrium<sup>7</sup>, (this is not so obvious for reserved right-of-way transport, insofar as the only experience in the analysed area is that of Tunis). But a totally balanced budget, including operation and investment related expenditure, is rarely achieved in good conditions; i.e. those covering fleet renewal and personnel management. The problem of initial investment arises in nearly all the urban transport networks of the developing countries. The sums required to retrofit the transport fleets are substantial and require *ad hoc* financing mechanisms for the repayment of loans<sup>8</sup>. This is because operators find it difficult to repay their loans (even at incentive rates) while amortizing their vehicles (even under favourable terms). In the case of heavy exclusive rights-of-way, the financing of the initial investment is even more of a problem - and one that is central to the transport issue.

Most countries are introducing institutional schemes and funding in addition to revenue from fares, to ensure satisfactory development of their urban public transport. The question is what must be financed and - more crucially - how. The macro-economic studies made on a few African countries (which should be generalized), show that revenue collected by the central and local authorities from taxes in the urban transport sector, including the private car, is much greater than the expenditure for this sector, even including expenditure on urban roads<sup>9</sup>. We may consequently wonder whether it is not justifiable to transfer part of this tax back, in a form to be defined, particularly for investments.

● The main problem for donor organizations is to ensure that aid will be used to achieve sustainable systems. Until recently, the policies of the World Bank

were focused on privatizing transport companies, sharing between several small operators to foster competition, cutting back public funding and prioritizing road operators for heavy transport systems in a context of structural adjustment - even for cities with millions of inhabitants. However, the World Bank now takes environmental aspects into account and agrees to finance some heavy projects or transport equipment. For the same reasons, the Inter-American Development Bank is financing an increasing number of urban transport projects that include heavy systems<sup>10</sup>. The Islamic Development Bank has just financed a hundred vehicles assembled in Algeria for Sotrac (Dakar)<sup>11</sup>. The European Union, which is present in the countries of Central and Eastern Europe, is absent from this sector in the ACP region. Urban development only accounts for 3% of its aid. However, it has begun a sectoral study, which should be followed up by projects under the future Lomé Convention.

The AFD (now the Agence Française de Développement – French Development Agency and formerly the CFD) largely subsidized French rolling stock and assisted big domestic corporations. But this only generated short-lived improvements in public transport supply because it did not produce the necessary structural adjustments. The AFD is now reorienting its strategy towards the financing of transport infrastructure and equipment (bus stations, terminal stations) and road facilities, which will enable better organization of the transport modes: walking, cycling, public transport, private cars, commercial vehicles. This policy aims to specify and set up mass transport systems where justified by the traffic, and shared transport systems in general, and to improve productivity and obtain the lowest possible equilibrium fares. The Treasury has financed large-scale foreign underground railway projects (Cairo,

Mexico, Santiago) and rail transport facilities and stock. The Department of the Secretary of State for Cooperation<sup>12</sup> and for the Private Sector has provided support for the World Bank's SSATP-TU programme (Sub-Saharan African Transport Policy Programme). The large number of facilities for financing activities/projects different in their types and phasing mechanisms, is prejudicial to the visibility of France's aid and to consistent support for French supply. In a context of dwindling public funds for development aid, contributions from the banking sector and the private sector will have to be facilitated.

Multilateral financing exists but today's procedures and conditionalities still largely exclude urban public transport systems from access to such financing.

● However, the previous example shows that pumping in funds will not suffice to keep companies going. Associated regulation and control measures must be proposed to ensure the sustainability of these companies. Experience has shown that a measure isolated from its context will not have a long-term effect. The funding mechanism used to renew rapid buses in Dakar with aid from the AFD was short-lived, as today the situation is back to square one, with this sector being unable to self-finance the renewal of its fleet. The same is true for aid to national public urban transport corporations as it has not prevented them from disappearing.

It is also important for operators, whether public or private, to adopt strict management rules with productivity objectives enabling them to achieve or even exceed operating equilibrium.

In the proposed procedure, companies operating main line services must be of sufficient size. Incentive measures should also induce small operators to group

together into collective structures to improve their competitive capacities.

● The recommended solution relies primarily on the local authorities' strong will and commitment to come to grips with their problem. This is increasingly true today. In several countries of Central America, policy-makers are defining comprehensive approaches to urban transport policies, which include institutional reforms and measures to completely reorganize the system. The Dakar project, financed by the World Bank, is also based on an integral urban transport organization plan that includes financing mechanisms.

The decentralization process engaged in most of the countries of the South entrusts the responsibility for urban transport to local authorities. However, these authorities are finding it difficult to perform their task owing to a lack of financial and human resources, which is delaying the implementation of new transport policies. The reinforcement of local authorities is a development priority.

● The report is not an exhaustive investigation. It has an operational objective based on experience feedback and fact-finding, which can be building blocks in decision-making.

It includes the following information:

- tools to be used to measure demand and make forecasts,
- supply capacity in response to demand,
- possible institutional arrangements and organization methods,
- comparative operational cost data in relation to vehicle type,
- maintenance systems,
- financing requirements.

These elements form an initial approach, which will be further examined based on

specific issues and the features of the different countries/situations.

- They highlight the following key points for the sustainability of transport systems:

- No sustainable, efficient transport systems can survive in major cities of the South without sector organization and control, which means setting up a regulatory urban transport authority. This regulatory authority can assume different forms according to the institutional situation of each country but it must involve the local authorities and be consistent with decentralization. Its basic tasks are urban transport planning in coordination with urban planning, investment programming and financing, sector organization and monitoring, traffic and parking management, and road facilities and maintenance. Transport infrastructure is the determining element in the implementation of a mass transport system.

Monitoring of compliance with the rules laid down by the regulatory authority is as important as the rules themselves.

- The problem of financing the urban transport sector is the second fundamental element. Generally speaking, revenue from fares (including fare compensation) covers operating costs and, in some cases, part of the investment costs. Additional financing must be sought, particularly for primary investment and, more specifically, for a heavy urban system. Measures must be phased in, according to clearly determined financing requirements: tax exemptions, finance companies of the assets or leasing company type.
- Operating an urban transport network requires professional skills,

particularly for maintenance, and local expertise. These skills subsist in countries such as those of Sub-Saharan Africa, where public corporations have been operated. In the other cases, training is a priority. It is essential for this sector to be organized and structured if the system is to be sustainable.

- **What strategy for France?**

Urban transport is a politically sensitive subject and governments are increasingly making it one of their highest priorities. Aid from France in this field can have a fairly immediate “visible” impact that will respond to people’s expectations.

Today’s urban transport market is a major one, in a context of heavy international competition. Most of the transport networks have to be renewed and their fleets enlarged to meet demand. In a country such as San Salvador, where 70% of travel is by public transport, 3,000 mass transport vehicles are in service. Purchases are being made on a large scale: 600 in Santo Domingo, 800 in Guatemala City, 100 in Dakar, 400 in Beirut, 80 in Libreville, and a loan of 400 million dollars from the World Bank is being discussed with the Algerian authorities for the purchase of public transport vehicles and equipment. Many cities are studying exclusive right-of-way transport projects, particularly of the tramway type.

In this field, French experience and technology are recognized throughout the world, whether in the field of engineering (studies, project development for the construction of heavy systems), financial packages, concessions, transport network organization and operation, traffic management or the supply of rolling stock and related equipment.

Urban travel plan projects based on an intermodal approach and favourable to public transport are a reference. The presence of major groups specializing in the supply and operation of commercial urban services, the existence of transport operators, both public and private, and training engineering are further strong points. The close involvement of the French local authorities in this sector provides a shopwindow for French exports.

● Where a project is given priority by France and a leader is designated to manage it, aid can be provided at three levels:

- Assistance is essential for project owners in the urban transport sector (regulatory authorities where they exist, and if not, the key players). This assistance comes into play before decisions on policy shaping, the choice of equipment and facilities, the issuing of invitations to tender and the selection of operators. It can be a French aid priority for urban development and for local management enhancement.
- Appropriate technical assistance for professionals is just as important for our exports of equipment and of operating and maintenance engineering. After years of lack of confidence, the way now seems clear to involve French operators in the management of these services and concessions. But these operations will only be successfully concluded if the equipment and facilities of the transport companies to be privatized are recapitalized and rehabilitated.
- A study of equipment and facilities tailored to local conditions must be undertaken quickly. Technologies developed in France for high-capacity vehicles known as hybrid

tramways or intermediate systems, which are much less expensive than conventional tramways, may open up particularly interesting prospects for developing countries<sup>13</sup>. The weak link in the chain is doubtless the lack of a standard bus or derived vehicle developed for the countries of the South, both as regards technology and competitive prices, compared with prices of locally-assembled vehicles or vehicles manufactured in the countries of the South (India, Algeria, Brazil, etc.)<sup>14</sup>.

- The conditions of French financing aid remain to be determined.

The aim of an aggregate supply, which must be encouraged, requires consultation and mechanisms that will enable it to be defined. French operators cover all niches of urban transport supply but some segments of this supply are not totally adapted to local conditions at present. This must not prevent the development of an overall project that can then be opened up to European solutions.

Within this framework, any French aid could centre on a few auspicious pilot projects spread over several regions. Some of these pilot projects would have to include the rehabilitation of urban/suburban railway lines.

● **Proposals for report follow-up**

- Formation of a subgroup for appropriate rolling stock and related equipment (e.g. traffic management equipment, maintenance and supply policy).
- Formation of a subgroup on financing requirements and financial engineering.
- Formation of a subgroup on training (supply and demand).

- Analysis and recommendations for the selection of pilot projects in the areas under study. An initial analysis, subject to more in-depth surveys, points to the selection of Abidjan, Dakar and doubtless Libreville in West Africa, where there is a project to introduce a bus network; the cities of Cape Town, Johannesburg and

Maputo in the SADC area; Mauritius and Madagascar in the Indian Ocean; Casablanca in the Maghreb; Santo Domingo, Cuba and San José in Costa Rica for Central America. The approach could be extended beyond the sample under study. For instance, to Caracas, Lima, Colombia and Argentina. ■

1. The cities under study are those on the African continent: Yaoundé, Douala (Cameroon), Abidjan (Ivory Coast), Dakar (Senegal), Libreville (Gabon), Brazzaville (Congo), Maputo (Mozambique), Johannesburg, Cape Town (South Africa), Tunis (Tunisia), Casablanca (Morocco) cities in Algeria, Beirut (Lebanon), San José (Costa Rica), Santa Domingo, cities in Brazil and in Vietnam.

2. Urban transport prices are often prohibitive and urban transport expenditure may exceed 30% of people's income, resulting in more walking and less mobility.

3. Measures in favour of public transport are increasingly necessary owing to pollution and congestion in cities of the South (e.g. the concentration of road operators in Santiago, Chile, the New Delhi municipality's decision to renew the road fleet and withdraw the oldest vehicles, the bulk purchase of vehicles in several countries of Central and Latin America in order to renew their fleets, etc.).

4. The capacity and technical choice of equipment are determined on the basis of present and future traffic on the route or routes, taking into account integration problems.

5. The quantification of the effects is difficult to assess. However, a methodological approach has been suggested for the city of Dakar. The study should be financed by the World Bank under a sectoral urban transport project and, if shown to be feasible, extended to other cities.

6. The lack of compensation of low fares by public authorities is one of the causes of difficulty in the urban transport public corporations.

7. Covering operating expenses but not including write-off and financial expenses.

8. According to our analysis, at least 15 to 20% of expenditure, depending on market conditions.

9. The contribution of the urban transport sector in Dakar has been evaluated at 7% of the country's GDP, whereas the budget allocated to urban transport, including urban roads, is less than 1%.

10. It could finance part of the tramway project in San José, Costa Rica.

11. 80 million franc loan with Senegalese State guarantee.

12. Under the reform of the French Development Aid policy, the Department of the Secretary of State for Cooperation has been placed under the Ministry of Foreign Affairs.

13. Alstom has just brought an extensible, modular tramway, "Citadis", onto the market at a much more affordable price than the tramway intended for the European market. This company may have a vehicle derived from the Citadis manufactured in one of the Eastern European countries for a far lower price still. Alstom is interested in tramway projects in Central America. An indication of the construction cost bracket (civil engineering, equipment and stock) is between 60 and 100 million francs per kilometre for a surface tramway-type system. But this figure is only given as a guide as the cost depends for a large part on local conditions.

14. However, it is necessary to await the tests of the RVI Karossa bus manufactured in the Czech Republic for the export market. A hundred vehicles have gone into service in Beirut and an articulated bus is being tested by Sotra in Abidjan. The price of a standard vehicle is around F 500,000 which is equivalent to that of the Mercedes bus assembled in Brazil or imported from Algeria.

