Sub-Saharan Africa Transport Policy Program
SSATP Working Paper No. 82

A Study of Institutional, Financial and Regulatory Frameworks of Urban Transport in Large Sub-Saharan African Cities

Africa Region
World Bank

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Prepared by Adam Smith International

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TABLE OF CONTENTS

List of Tables

List of Maps

List of Photographs

FOREWORD

This Working Paper presents the findings of "A Study of Urban Transport Institutional, Financial and Regulatory Frameworks in Large Sub-Saharan African Cites" carried out by Adam Smith International in 2004-2005, and commissioned by the Sub-Saharan Africa Transport Policy Program (SSATP).

The study objective was to review the institutional, financial and regulatory frameworks for the provision of urban transport in four selected cities, Dakar (Senegal), Douala (Cameroun), Kampala (Uganda) and Nairobi (Kenya). The specific focus was to examine: (a) the structure, process and performance of the existing institutions and financing arrangements; and (b) operational practices of public and private bus operators.

The study has examined the existing institutional arrangements in the four cities and identified opportunities and constraints for policy reform. The general focus is on identifying mechanisms suitable in different cultural and political environment to organize planning, regulation and monitoring of urban transport services. The arrangements for meeting financing needs of the sector in the four cities have been reviewed with a focus on processes, performance, monitoring indicators and outcomes.

The study has identified a phased program of improvements required in the urban transport systems, with the short-term measures focused on traffic management, overloading controls, vehicle inspections; medium-term measures focused on a gradual consolidation of the informal sector bus operators into small or medium-sized enterprises, introduction of a formal route structure and licensing system and long-term measures focused on institutional restructuring supported by appropriate legislation, funding and technical support.

The study findings have been presented in the SSATP annual meetings in Addis Ababa (2004) and in Bamako (2005). The findings will continue to be discussed with key policy makers to identify the reform process and develop the next steps.

Ajay Kumar

Appropriate Transport Services Co-thematic Leader

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This paper has been prepared for the SSATP by a team consisting of Graham Gleave, Alaric Marsden, Tim Powell, Sandra Coetze, Graham Fletcher, Ian Barrett, David Storer. The study was managed by Ajay Kumar, with the support from the SSATP team of Nigel Ings, Mustapha Benmaamar, Tesfamichael Nahusenay, Fanny Barrett and Monique Desthuis-Francis. Many stakeholders in urban transport in the four cities were interviewed as part of the study and their support is gratefully acknowledged. The views expressed in this report are solely of the ASI team and should not be ascribed to any of the stakeholders or the SSATP/IBRD management.

ABBREVIATIONS

AATR	*Agence autonome des travaux routiers*
ASI	Adam Smith International
BRT	Bus Rapid Transit
CETUD	*Conseil exécutif des transports urbains de Dakar*
COSTU	*Comité d'organisation et de suivi des transports urbains*
DDD	Dakar Dem Dik (Dakar bus operator)
EC	European Commission
FCFA	*Franc de la Communauté financière africaine*
GDP	Gross Domestic Product
GIE	*Groupement des intérêts économiques*
GNI	Gross National Income
GoC	Government of Cameroun
GoK	Government of Kenya
GoS	Government of Senegal
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KUTIP	Kampala Urban Traffic Improvement Programme
KBS	Kenya Bus Services
LRT	Light Rail Transit
ODA	Official Development Assistance
PPP	Purchasing Power Parity
PSV	Public Service Vehicle
PTB	Petit Train Bleu (Dakar suburban rail service)
RAFU	Road Agency Formation Unit (Uganda)
SSATP	Sub-Saharan Africa Transport Policy Program
SOCATUR	*Société camerounaise de transport urbain*
SOTUC	*Société des transports urbains du Cameroun*
SOTRAC	*Société des transports en commun* (former Dakar bus operator)
TLB	Transport Licensing Board (Kenya and Uganda)
UTC	Uganda Transport Company
UTODA	Uganda Transport Operators and Drivers Association

EXECUTIVE SUMMARY

Study Objectives

The quality of public transport services in most sub-Saharan African cities is poor, mainly as a consequence of inadequate institutional, financial and regulatory arrangements. The objectives of this study were to review the urban transport systems in four large Sub-Saharan African cities (Dakar, Douala, Kampala and Nairobi) and to draw general lessons that could be of value to other cities in the region. Specifically, the study was required to:

- develop a reformed bus policy framework;
- specify policy instruments to improve urban bus transport services for city residents, particularly the poor and disadvantaged;
- make recommendations on the institutional and financial arrangements suitable in different cultural and political environments;
- consider options for strengthening the legal and regulatory framework with the objective of encouraging competition;
- assess the conditions necessary to support bus rapid transit systems; and
- prepare a set of performance parameters and recommendations to strengthen the planning and monitoring capacity of city transport departments.

This Report also incorporates the results of stakeholder workshops which were held in each city.

Requirements of a Well Performing Urban Transport Study

The following key characteristics of a well performing urban transport system have been identified:

1. Affordability
2. Safety
3. Reasonable journey times
4. Quality of service
5. Environment
6. Satisfactory working conditions
7. Appropriate institutions to ensure sustainability, including

- Generation of adequate financial resources
- Operational efficiency
- Effective enforcement of regulation
- Monitoring of system performance

Current Performance of the Urban Transport System

All four cities are large, with populations of 2 to 3 million, and are growing rapidly. Income levels are modest, and the national governments of all four countries face severe financial constraints, that limit their ability to maintain and expand transport infrastructure.

Road Infrastructure

Congestion is a serious problem in all four cities, and the problems are exacerbated by poor quality roads and lack of effective traffic management. National governments are responsible for maintaining the national roads within the cities, while local governments are responsible for the rest of the urban system. In Uganda roads are financed directly from the Ministry of Finance as part of the national budget, but Senegal, Kenya and Cameroun have Road Funds, which dedicate a proportion of funds to urban roads. However, the allocations are small, the urban authorities are short of money and urban road maintenance is seriously under-funded.

Failure to enforce parking controls and regulations prohibiting the use of sidewalks for commercial activities has led to significant reductions in road capacity in all the cities studied. Traffic discipline is poorly enforced. There are few efforts, as yet, to set up priorities for public transport at junctions.

Public Transport Services: the Informal Sector

The informal sector, consisting of large number of minibus, taxi and motorcycle operators, now dominates the provision of public transport in all four cities. Dakar, Kampala and Nairobi are served mainly by minibuses, ranging in size from 14 to 25 seats. In Douala, the minibus sector was effectively suppressed to protect the conventional bus operator, SOCATUR, and its place has been taken by shared taxis and motorcycle taxis.

The informal sector provides a generally dense and frequent service, but levels of comfort and safety are low, and the services are generally viewed as disorderly and unreliable.

The minibus and taxi drivers normally hire their vehicles from the owners, though there are still some owner-drivers. The drivers retain all fare income, and are responsible for fuel purchases. The owners are responsible for all maintenance work. In Douala and Dakar, the custom is for the day's work to be split between two drivers, each working around eight hours, while in Nairobi and Kampala, there is normally only one driver, working a daily 12 hour shift.

In Douala and Dakar, there are official tariffs for the minibus and shared taxi services, but in practice fares are negotiated. In many cases, the fares charged are below the official rate. In Kampala and Nairobi, there are no fare controls, although in Kampala, UTODA, the operators' association, has set recommended fares for each route.

The growth of the motorcycle taxi services in Douala has been spurred by the very poor quality of the road system, as the motorcycles are much better able to negotiate the broken and potholed roads. Small capacity motorcycles (less than 100 cc) are used, for which no driving license is re-

quired. The vehicles are bought on hire purchase. Many of the drivers being young and inexperienced, accidents are common.

The minibus and taxi owners normally buy their vehicles second-hand and are able to finance the purchase with interest free loans from family or friends, or small loans from saving cooperatives. The payback period for second-hand vehicles is normally one to two years. Bank finance is not normally used, due to lack of acceptable security for the loans.

The industry appears to be financially self-sustaining in Douala, Dakar and Nairobi, as there is regular replacement of the fleet. However, there may be some over-capacity in Kampala, as some operators are finding it difficult to replace their vehicles. The motorcycle taxi industry in Douala appears to be financially sustainable, as the drivers report that they can complete the hire purchase of their motorcycles within one or two years.

In general, the informal sector operators appear to be unwilling to accept the costs and risks of large losses associated with buying new vehicles. There is also some evidence that the payback period for new vehicles is longer than for second-hand vehicles and that the operators have problems raising the deposits for their purchase.

Public Transport Services: Conventional Bus Companies

Conventional companies, operating big buses (40 to 60 seats) now only play a small part in the public transport system. In Douala and Dakar, the original state owned companies failed, partly due to fare controls that limited their ability to maintain and replace their fleets. Their place has been taken by private companies, (SOCATUR in Douala and Dakar Dem Dik in Dakar). Until recently neither of them were able to operate a full service and both were facing severe financial difficulties. However, the Government of Senegal has recently acquired over 400 new buses, through Indian and Swedish donor funding, which are being run by Dakar Dem Dik (DDD). DDD receives a subsidy from the national government, though SOCATUR does not. The big bus operator in Nairobi, the Bus Track division of Kenya Bus Services, is currently able to cover running costs, but is not earning enough to replace its vehicles.

Public Transport Services: Rail

In Dakar, the *Petit Train Bleu* (PTB) operates 19 trains per day between the port area and the satellite town of Rufisqe. Currently, the train provides less than two percent of total urban transport services, but it is planned to expand the service and increase track capacity. Kenya Railways operates a small-scale suburban rail service. Neither service is profitable.

Regulation of Public Transport

In Kampala, the licensing authority, the Transport Licensing Board (TLB), makes no attempt to limit the number of bus or taxi operators, to impose a route structure or to allocate routes. In Nairobi, in principle, the TLB allocates routes and limits the number of operators serving that route. However, in both countries, any operator with a suitable vehicle can obtain a license and then de-

termine which route to operate and what fare to charge. In practice, the operators' associations appear to control the allocation of routes and have some influence over the fares charged.

In Douala, the Ministry of Transport has assigned 15 routes to SOCATUR (of which the company is able to operate only nine). No attempt is made to impose a route structure on the shared taxis.

Dakar is the only city studied that has attempted to impose a route structure on the informal sector, using routes defined by local legislation from the 1970s. At present, route allocation to operators appears to be controlled by the syndicates. However, the *Conseil exécutif des transports urbains de Dakar* (CETUD) is attempting to devise a new route structure and to allocate routes to newly formed *Groupements d'intérêts économiques* (GIE), which combine the activities of formerly independent private operators. The proposal has proved very slow to implement (it started in 1998), partly because of the difficulty of bringing the independent operators together, and partly because it was tied to an unpopular proposal to link the allocation of routes to the purchase of new Tata minibuses. However, 13 GIE have now been formed and 6 of them have agreed to take on the first tranche of 105 new Tata minibuses. Concession agreements are currently being negotiated with the 6 pioneers, and it is hoped that the other GIE will also join the program soon.

Regulatory Enforcement

All the cities visited have regulations requiring regular inspections of public service vehicles (PSV). Yet, it is clear that inspection is, at best, casual, and many vehicles are visibly in poor condition.

Many minibus operators regularly overload their vehicles, which not only reduces passenger comfort, but is potentially unsafe. New regulations have recently been introduced and enforced in Nairobi, with serious political support, which have effectively eliminated overloading.

Current System Performance

When judged against the seven criteria of a well performing urban transport system, the current systems in the four cities can be seen to be performing only moderately well.

1. **Affordability**: many potential passengers cannot afford to use public transport and are forced to walk long distances to work.
2. **Safety**: driver behavior is criticized as erratic and unsafe and many vehicles are not roadworthy.
3. **Reasonable Journey Times**: congestion makes journey times slow, while the radial structure of the route system means that passengers are often forced to make an unreasonable number of transfers.
4. **Quality of Service**: passengers expressed great dissatisfaction with the quality of service, both in terms of passenger comfort and driver discipline.
5. **Environment**: pollution from vehicle exhausts is visible in all four cities and constitutes a significant health risk to the urban population.

6. **Satisfactory Working Conditions**: drivers in East Africa work long hours, which is potentially unsafe for both them and their passengers. The problem in West Africa appears to be less acute.
7. **Sustainability**:
   - the informal sector appears to be financially self-sustaining, except in Kampala, albeit with low quality, second-hand vehicles. The conventional big bus companies, however, are unable to replace their fleets.
   - institutional arrangements are failing to promote an orderly or efficient transport system; efforts at reform in Dakar have proved very slow to implement.
   - Enforcement of existing regulations is lax, and little effort is made to monitor system performance.

The box on the following page summarizes some of the lessons learned from the investigations in the four cities.

Options for Change

The options for change fall naturally into those relating to infrastructure provision and management, route structure and allocation as well as the regulation and management of the public transport system.

Infrastructure Provision

In the short term, there is an urgent need to improve the quality of the urban road system in order to reduce vehicle operating costs and to reduce congestion. In particular, there is an urgent need for road rehabilitation in Douala, and a general requirement to improve the quality of road maintenance in all four cities. This will require a coordinated effort from national and local government. It will also require that urban areas are given a larger share of the nationally generated road funds, more consistent with the proportion of traffic activity which takes place in urban areas.

Some Lessons Learned

Importance of Infrastructure

Poor quality roads and lack of capacity reduce vehicle speeds, increase vehicle operating costs and lower the productivity of public transport. Funding for urban road maintenance needs to be increased, as current allocations do not reflect the share of urban transport in the national road system.

Need to Enforce Existing Regulations

Lack of effective control on parking and commercial activities on sidewalks reduces the capacity of the urban road network, puts pedestrians in danger and causes congestion. Consistent efforts to enforce existing regulations can greatly ease traffic. Recent experience in Nairobi shows that, with political will, effective enforcement is possible.

Long-Term Dangers of Fare Controls

Government imposed controls on fares rarely keep pace with cost increases. The consequent drain on bus company finances mean that vehicles cannot be maintained or replaced, and service quality rapidly deteriorates.

Role of the Informal Sector

The informal sector is the main provider of public transport in all the cities studied. It is admittedly disorderly, but is also flexible, efficient and very resilient, and is a great generator of employment. Efforts to suppress the informal sector are likely to be ineffective and Governments will have to work with (and not against) the informal sector, if they wish to improve the quality of public transport.

Consolidation of Small Informal Sector Operators

The development of a more orderly public transport system, with published fares, regular services and guaranteed service quality, will require the consolidation of small independent operators into companies or cooperatives, as is being done by CETUD in Dakar at present. However, the independent operators are often reluctant to consolidate, and will require a mix of compulsion and incentives. It is still too early to say how successful the CETUD experiment will be.

Big Buses

Big buses are, in principle, more efficient than small ones, and their use should be encouraged. They will be effective on high volume, uncongested routes, where high productivity can be achieved. They may require protection from competition from minibuses.

Financing New Minibuses

The informal sector has no problems funding the purchase of second-hand vehicles, and payback periods are short. However, payback periods for new vehicles are longer and the risks are higher. Consolidation of independent owners into larger groups would help spread risks; formal franchising agreements would provide more secure streams of future income, and could help facilitate bank finance.

Monitoring

Basic statistics on transport system performance are not collected. Until they are, it will be impossible to assess the current situation, or to establish whether it is improving or deteriorating.

In the medium term, the capacity of the urban transport system can be increased through small-scale widening and junction improvements, together with the building of bypasses in anticipation of urban expansion, while costs can be kept low. Improved pedestrian facilities will also help reduce accidents. In the longer term, consideration can be given to bus rapid transit and light rail transit systems, though these are likely to be expensive solutions to urban transport problems.

Passenger journeys can be made more convenient through the provision of additional bus terminals. The bus parks should be run by companies independent of the operators, to avoid conflicts of interests or abuse of power by the operator associations (as occurs in Kampala).

Traffic Management

In the short term, effective enforcement of existing regulations on parking and the use of sidewalks for commercial activity can make a significant improvement to traffic flow. In the medium-term, improving junction design and the introduction of bus lanes and bus priorities at traffic lights can be introduced to help reduce public transport journey times. In the long-term, consideration can be given to introducing road charging, though such schemes are complex, need careful planning and can be expensive to operate.

Route Structure and Allocation of Routes to Operators

The public transport route structure can be developed in a number of ways. The current procedure in all four countries is, in effect, to let the operators determine which routes should be provided. This is an appropriate response when there are large numbers of small operators, when the regulatory authority wishes to encourage competition and where enforcement capacity is limited. However, it has the disadvantages that low volume routes may not get any service; that it is difficult to impose service quality conditions; and that control will tend to pass to operator cartels.

An alternative is for the licensing authority to determine the route structure, either as an organic development of current practice or as the result of a formal planning exercise, or in response to operator proposals. This is the procedure which CETUD is now gradually implementing in Dakar and could be followed in the other cities.

The authority could then grant exclusive licenses, or franchises, in return for agreements on service quality and fare levels (the licensing authority would then have to ensure that the exclusivity was enforced). This approach would work best if the currently large numbers of independent operators could be grouped into a smaller number of formal companies, or cooperatives, though this can be a drawn out process, as CETUD's experience has shown. Where this was not possible, it would still be possible to grant route licenses to a number of independent operators, who would then be encouraged to form operator associations, which could in time, develop into formal companies.

Alternatively, the licensing authorities could award route licenses or franchises through an open bidding process. Licenses could be awarded either to the operator that offered the highest payment (or lowest subsidy) to the authority, or on the basis of the minimum fare level for a given quality of

service. Licenses or franchises could be re-tendered every few years, to give the operators a strong incentive to maintain the quality and efficiency of their services.

Any attempt to move towards a more formal route structure will require substantial efforts at institutional strengthening of the licensing authority, to design the new route structure and to enforce and monitor its implementation.

Regulation of Fares

Efforts to control fares at a level judged affordable for most passengers have, in the past, meant that the operators could not afford to replace or maintain their fleets, to the long-run detriment of the traveling public, as evidenced by the breakdown of conventional services in Douala and Dakar. Subsidies are difficult for the local or national governments to sustain. Controlling fares at a break-even level, where operators are guaranteed a set profit level, which is currently being attempted in Dakar, can remove incentives to operate efficiently. Some of these problems can be overcome if fares are set as part of an open bidding process and the routes are re-tendered on a regular basis, to ensure that fares are set competitively and there is a chance to adjust to changed conditions at re-tendering.

Service Quality Improvements

There is a clear need to improve the quality of vehicle inspections in all four cities, to ensure that all PSVs are roadworthy, though it has to be recognized that this may increase operating costs, with a consequent increase in fares. Closer regulation of operator practice could also help improve quality of service through enforcing route discipline and ensuring that vehicles provided a minimum standard of cleanliness and comfort.

Improving the operation of the bus terminals, in particular in Kampala, through reducing internal congestion and setting up systems for the regular and orderly dispatch of vehicles could help reduce operator costs and improve the regularity of service to passengers. This would require the cooperation of the operators' associations.

Efficiency Measures

The introduction of new minibuses should, in principle, reduce the long-run costs of providing urban transport, though there is some evidence that payback periods are longer than for second-hand vehicles. Operators also appear to be rather risk averse. There seems to be little case for the authorities attempting to second guess the commercial judgment of the operators, though the encouragement of premium services, using new vehicles to provide a better quality of service, at a higher price, could be encouraged (as there appears to be market demand for such services). In addition, a more stringent approach to vehicle inspections would raise the cost of maintaining older vehicles, and give operators an incentive to purchase new vehicles.

There is clear evidence that the introduction of large buses (60 seats or more) would result in a significant reduction in costs, at least on the high volume routes. However, small-scale independent operators are unlikely to make this level of investment, as it involves significant overhead in opera-

tion and maintenance. The recent experience of the big bus operators has not been encouraging and it seems likely that new big buses will only be introduced if the independent operators start to combine into larger units. This may occur in the context of the development strategy proposed below.

Environment

The regular vehicle inspections could be extended to cover checks for exhaust emissions. This is likely to be costly and may have to be phased in slowly. The introduction of lead-free and low sulphur fuels will also help reduce the health hazards of vehicle emissions.

Improvement Strategies

Improvement of the urban transport system will require a phased program of changes. Some improvements can be undertaken immediately, while others can be undertaken in the medium term, but with limited changes to the current institutional arrangements. In the medium term, it will be necessary to work towards a gradual consolidation of the informal sector operators into small or medium sized enterprises. More radical institutional restructuring will require legislation, will require additional funding and technical support, and so should be envisaged as a longer-term option.

Figure 1 provides a summary of the various proposed improvement strategies and shows how they are inter-linked.

Short-Term Measures

Short-term enforcement measures in traffic management, such as parking control and reducing the use of sidewalks for commercial activities could make a significant difference to traffic flow, thus increasing the productivity of the bus fleet. Overloading controls would increase passenger comfort and safety, though at some cost to operators and eventually passengers. A serious effort to ensure that all vehicles were regularly inspected and brought to a minimum roadworthiness standard would do much to increase safety and improve passenger comfort.

Funding for urban road maintenance could be increased to prevent further deterioration of the road network.

Medium-Term Measures

In the medium term, further traffic management measures can be introduced, including better junction design, the introduction of bus lanes and bus priority measures at traffic lights. These measures are relatively inexpensive.

Repair and rehabilitation of the road networks, though likely to be very expensive, will prove both economically worthwhile and will significantly reduce urban congestion.

A staged program for the introduction of a formal route structure and licensing system could be undertaken, as follows:

- Initially, the licensing authorities would allocate route licenses to any qualified operator, with the following conditions:
  - The operator would be restricted to the licensed route
  - Minimum standards of comfort and cleanliness would be imposed
  - Operators could set their own fares and determine the frequency of service
  - Licenses would be renewable after (say) 3 years
  - Operators would be encouraged to form route associations, with whom the licensing authorities could negotiate on questions of service quality, frequency etc.
  - Route associations could be encouraged to incorporate
  - At the first or second route license renewals, the licensing authorities could introduce a formal open bidding process on a selection of routes, giving a route monopoly to a properly constituted enterprise, able to guarantee given frequency and service qualities. Routes could be allocated on the basis of payments to the licensing authority or to the operator offering the lowest fare.

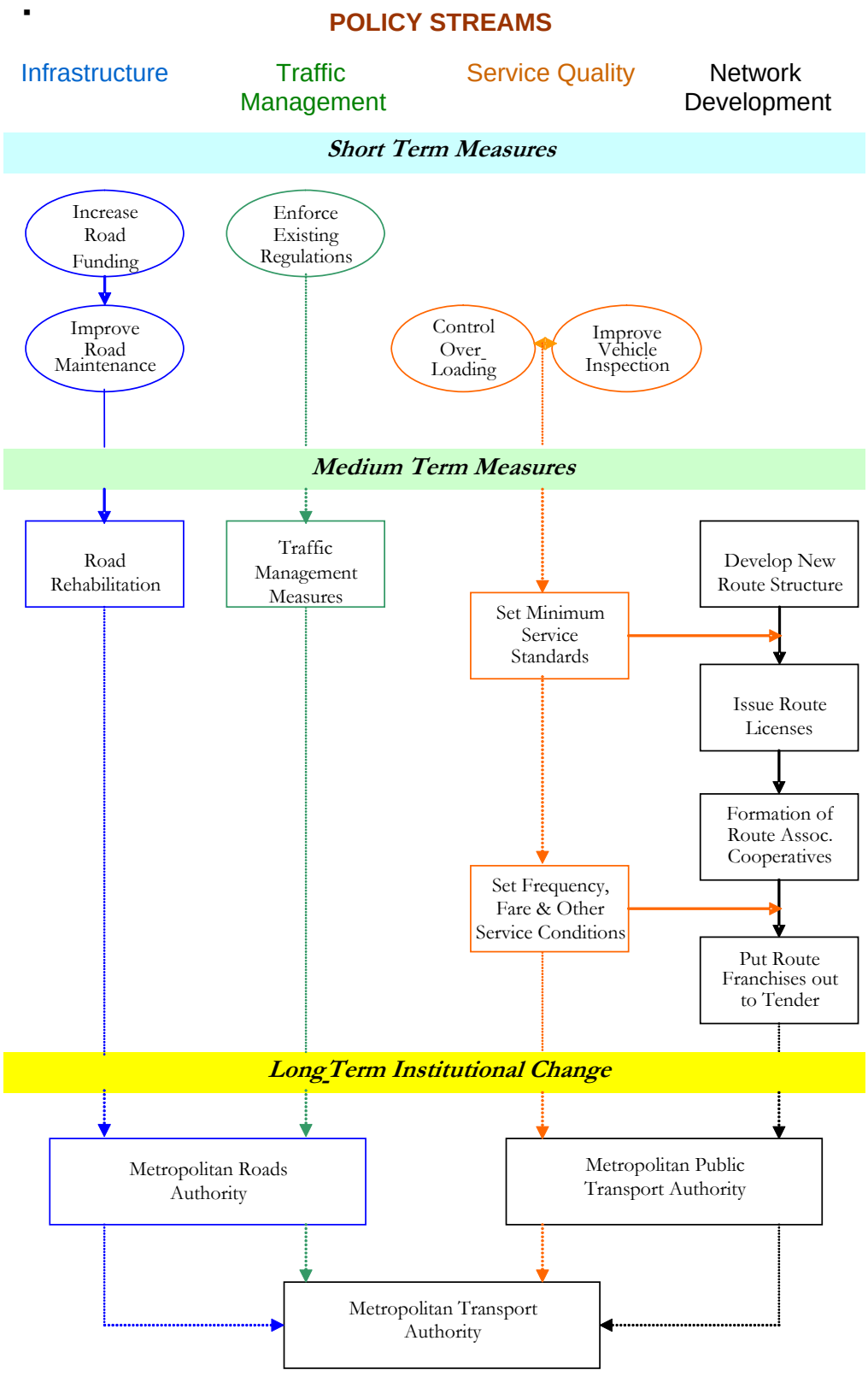
This system could be introduced flexibly and would encourage the formalization of the informal sector. In particular, a core network, with fixed routes, could be combined with area licensing in peripheral areas, where the informal sector could provide feeder services to the main routes. The regular reallocation of licenses following an open bidding process would help keep the sector responsive to passenger needs and economically efficient. The introduction of these systems would require a major effort to strengthen the licensing authorities.

Longer-term Measures

The successful long-term development of the urban transport system will need the effective cooperation of a number of different agencies. Much can be done within the existing framework, but it may well prove difficult to get the necessary coordination without the creation of a formal coordination agency. Consideration could therefore be given to setting up:

- Metropolitan Road Authority, responsible for the long-term planning and development of the urban road network. It would also take responsibility for road maintenance, traffic management and the promotion of public transport, in cooperation with the licensing authorities.
- Metropolitan Public Transport Authority, with overall responsibility for the development of the public transport system. It would design an appropriate route structure and have the power to license and regulate operators, and would also be responsible for developing rail based systems and bus rapid transit systems, where appropriate and in cooperation with the appropriate road and urban planning authorities.
- Metropolitan Transport Authority, which would combine the functions of the Road and Public Transport Authority.

Figure 1: Proposed Improvement Strategy



The workshops demonstrated that there was a strong feeling that the current administration of the urban transport system ignored the interests of local stakeholders and users. It would therefore be reasonable to ensure local representation, possibly through the local authority, on the boards of these Authorities, should they be formed.

Performance Indicators and Urban Transport Database Requirements

A set of indicators has been developed to measure the progress of the transport system against the criteria set out above. In addition, a more general database of statistics relevant to urban transport has been indicated. It should be noted that, at present, very little of this information is available, and the licensing and other authorities will require substantial strengthening of their data collection capabilities if this information is to be available on a regular basis.

Next Steps

Following the program of reform set out here will require high level political commitment, which cannot be imposed from outside. A first step in generating such commitment is that the SSATP representatives bring the findings of this Study to the attention of the key policymakers.

The reform process can be further encouraged and facilitated through the SSATP, by proposing studies which can be used as springboards for further action. Three areas that merit attention are:

- Identification of short-term traffic management measures (mainly enforcement of existing regulations) that can reduce congestion and ease public transport flows. This should be done in all four study cities.
- Technical assistance to licensing authorities to set up new public transport route networks. This should be done as a matter of urgency in Douala, before the public transport concessions are renewed. It should also be done in the near future in Kampala and Nairobi.
- Design of model concession agreements, which would be of value to SSATP cities.

1 INTRODUCTION

1.1 THE OBJECTIVES OF THE STUDY

Adam Smith International (ASI) was commissioned by the Sub-Saharan Africa Transport Policy Program (SSATP) in September 2004 to carry out a study of Urban Transport Institutional, Financial and Regulatory Frameworks in Large Sub-Saharan African Cities.

The objective set for the study was to review the institutional, financial and regulatory frameworks for the provision of urban transport in four selected cities, Dakar in Senegal, Douala in Cameroun, Kampala in Uganda and Nairobi in Kenya. Specifically the Consultants were asked to:

- examine the structure, process and performance of the existing institutions and financing arrangements; and to
- examine operational practices of public and private bus operators.

The Consultants were then requested to use the findings of their examination of the performance of the urban transport system in the four cities to identify general principles for broader dissemination. In particular they were asked to:

- develop a reformed bus policy framework;
- specify policy instruments to improve urban bus transport services for city residents, particularly the poor and disadvantaged;
- make recommendations on the institutional and financial arrangements suitable in different cultural and political environments;
- consider options for strengthening the legal and regulatory framework with the objective of encouraging competition;
- assess the conditions necessary to support bus rapid transit systems; and
- prepare a set of performance parameters and recommendations to strengthen the planning and monitoring capacity of city transport departments.

In subsequent discussions and correspondence the SSATP Team emphasized the need to consider the institutional and financial implications for all aspects of the delivery and operation of urban transport systems including private vehicles, non-motorized transport and pedestrians as well as the public transport system. A framework for an urban transport database was also requested.

1.2 THE WORK PROGRAM

To meet this objective two experienced consultants visited each of the four countries and examined the public transport systems in detail. They held discussions with the main Government agencies responsible for the maintenance and improvement of the road network, and the provision of public transport. They also met with the organizations representing public transport operators, and with users. They collected and reviewed recent studies relating to transport in each city and carried out limited sample surveys where they felt there was a particular absence of data.

To ensure that a consistent approach was adopted the Consultants developed a Common Appraisal Framework which was then applied in all four cities. This framework (which listed 17 specific Topics and several sub-items) was presented to and discussed with a number of members of SSATP at a meeting in Addis Ababa in September 2004. A copy of the Common Appraisal Report was included in the Inception Report for this Study.

The Consultants' main findings and conclusions were presented in the Draft Final Report (April 2005) and were discussed at Workshops in June 2005, in each of the four cities visited. This Working Paper has been prepared taking into account the views expressed at the Workshops.

1.3 THE STRUCTURE OF THIS STUDY

The study is divided into the following chapters:

1. Introduction
2. The Requirements of a Well Performing Urban Transport System
3. Review of the Transport System in the Four Cities
4. Options for Change
5. Judging the Performance of the Transport Sector

This Working Paper is based on the findings from all four cities and is intended to illustrate the various options for the institutional, financial and regulatory framework for the provision of urban transport which the Consultants believe should be considered more widely throughout sub-Saharan Africa.

In the course of the study much detailed information was collected, specific to the cities visited. This is summarized in four separate city reports, included in Appendix A. Reports on the Workshops can be found in Appendix D.

2 REQUIREMENTS OF A WELL PERFORMING URBAN TRANSPORT SYSTEM

Chapter 3 will show that the characteristics of the transport system varied markedly across the four cities visited. This made it imperative to develop common criteria which would help the Consultants to judge how effective the different transport systems were. After considering all the available information, including in particular the results of discussions with users and potential users of public transport, the following seven key requirements of a well performing urban transport system have been identified.

2.1 REQUIREMENT 1: AFFORDABILITY

It is important that as many potential users as possible should be able to afford to use some form of transport other than walking. This review shows that this is often not the case with many potential users of public transport choosing to make long journeys on foot because they cannot afford the fare charged to use public transport. This clearly has adverse economic and social consequences.

2.2 REQUIREMENT 2: SAFETY

It is important that the transport system is as safe as can reasonably be expected. This applies to both those in motorized vehicles and to those walking or using non-motorized transport. The review shows that this is often not the case. Vehicles are at times overloaded, may not be as well maintained as they should be, may be driven too fast, and may be driven by drivers working excessively long hours. The facilities provided for walkers and non-motorized transport are often badly designed and badly maintained, thus compromising safety.

2.3 REQUIREMENT 3: REASONABLE JOURNEY TIMES

Both those using public and private transport will be concerned that journey times are not excessively extended because of congestion. Those walking or using other forms of non-motorized transport will be concerned that adequate facilities are provided to cater for their needs. This applies particularly where they need to cross busy and high speed roads.

2.4 REQUIREMENT 4: QUALITY OF SERVICE

The potential transport user will always want a 'good' quality of service. This applies both to the majority who use public transport and the minority who use private cars or taxis. The concept of quality of service will have various facets. All road users will be concerned about the quality of road maintenance and the extent to which the network can deal with occasional events such as heavy rain without grinding to a halt. Private car users will be concerned about the ease with which they can park close to their intended destination.

Public transport users will be particularly concerned about the comfort of the vehicle and whether a seat is guaranteed. They will also be concerned about the extent of the public transport network: are the main residential areas all well served? Can the most important destinations be reached without the need to change? They will also be concerned about the frequency of service, and the likelihood that a passenger wishing to board a vehicle at an intermediate point along the route can do so.

The provision of a high quality of service will normally mean that the service is more expensive than a more basic service. There is likely to be a clear trade off between the requirement for a high quality of service and the requirement for an affordable service. For this reason it may be necessary to stratify the provision of public transport, offering a higher quality of service to those who can afford and are willing to pay more to benefit from a better quality of service. This review of the four cities found examples of this market stratification, which the Consultants believe should be encouraged.

This review also found examples where the quality of the public transport network could be improved without making the service less affordable.

2.5 REQUIREMENT 5: THE ENVIRONMENT

It is important to make sure that the provision of urban transport does not have unnecessary adverse consequences for the environment. The key issues which need to be considered are the immediate impact on the local environment and the emission of green house gases. In recent years developed countries have imposed increasingly stringent rules on the emission levels for public service vehicles. These rules should not automatically be assumed to be appropriate for all sub-Saharan African cities. There is a need to make sure that the rules which are applied are appropriate to African conditions and can be enforced given locally available resources and technology.

2.6 REQUIREMENT 6: SATISFACTORY WORKING CONDITIONS

This study highlights the need for satisfactory working conditions for those employed in the public transport industry. These are often not satisfactory. In some of the cities visited drivers and conductors were found to work very long hours for uncertain levels of remuneration. This led to the provi-

sion of a poor quality of service and to unsafe working practices. The Consultants believe that appropriate changes to the institutional and regulatory framework could be introduced which would improve the working conditions of those employed in public transport without making public transport any less affordable.

2.7 REQUIREMENT 7: APPROPRIATE INSTITUTIONS TO ENSURE SUSTAINABILITY

It is important that the performance of the transport system be sustained and if possible enhanced over time. There are a number of components to this requirement, all directly or indirectly linked to the institutional and regulatory framework within which the public transport operators have to work.

Financial Resource Generation

One of the principle requirements of sustainability is that the system generates adequate finance for the replacement and expansion of the public transport fleet. These resources can either come from fares paid by passengers or from subsidies from government funds. The regulatory regime is very important in this regard, as inappropriate fare control can severely restrict the ability of the operators to replace their fleets.

Operational Efficiency

An efficient system will require fewer resources to sustain it. Efficiency in public transport will depend on the institutional arrangements governing:

- market structure: competitive, or contestable, markets will tend to be more efficient than monopolistic or cartelized markets;
- traffic conditions: congestion will reduce the productivity of the public transport fleet; congestion, in turn, depends on the quality of the road infrastructure and the effectiveness of traffic management;
- safety, environmental or other regulations affecting the kind and size of vehicle that can be used, and the number of passengers that can be carried.

Enforcement

Once the regulatory framework has been decided, it is clearly necessary to ensure that rules are enforced. This requires adequate resources devoted to enforcement, clear lines of responsibility and determination to ensure compliance.

Monitoring

Monitoring, whether regular or occasional, is required to ensure that the public transport system is working as expected and to identify failings and problems. Effective monitoring requires a clear identification of what is to be measured and which organizations are responsible. The review of the four cities considers the extent to which these criteria are met. Where they are not, suggestions are made as to how the changes necessary to meet them can be introduced.

3 REVIEW OF THE PERFORMANCE OF THE TRANSPORT SYSTEM

3.1 INTRODUCTION

In this chapter the main features of the transport systems are described, for each of the four cities visited. The description has been deliberately kept short and concentrates on the main issues which the Consultants believe to be important, and from which lessons of relevance elsewhere in Sub-Saharan Africa may be learned. A more detailed description of the transport system in each city has been prepared separately and is included in Appendix A.

3.2 COMPARATIVE DATA

3.2.1 OVERVIEW

All four cities are large, with populations between 2 and 3 million and are growing rapidly. Incomes levels in the urban areas are unknown, but national income levels range from US$ 240 per head in Uganda to US$ 770 per head in Cameroun. In all four countries, national governments face severe financial difficulties, which limit the funds available for transport system support. Road maintenance in particular is badly under-funded.

All four cities are badly congested at peak hours. The poor quality of the roads and the lack of effective traffic management exacerbate the congestion problems.

Conventional public transport services, in the form of large buses run by a single company, now only provide a small part of the total public transport services in Douala, Dakar and Nairobi, and ceased to operate in Kampala in the 1970s. The mainstay of the public transport system in all four cities is now the informal sector, which in Dakar, Kampala and Nairobi consists of large numbers of private operators providing minibus services. In Douala, where the minibus operations were banned in an effort to protect the conventional bus company, the role of the minibus is taken by shared taxis and, in the outer areas, by motorcycle taxis.

Although all four cities are served by the national rail network, it is only in Dakar and Nairobi that the railway offers any kind of suburban passenger service.

3.2.2 AVAILABLE DATA

The nature of the transport system means that it is difficult to obtain precise comparative data. Table 1 summarizes some of the main features of the transport system in each of the four cities. More detailed information is given in Appendix A.

The provision of transport in the four cities reflects both their geography and their historical development. The Consultants have nevertheless found many similarities (as well as a few significant differences) between them. These similarities and differences are described in the remainder of this section.

3.3 THE FACILITIES FOR NON-MOTORIZED TRANSPORT

There is substantial demand for non-motorized transport, particularly in the two East African cities where many walk long distances to work. The facilities for pedestrians are very poor, being badly designed and maintained. It is clear that insufficient attention is paid to pedestrian safety.

3.4 THE ROAD SYSTEM

3.4.1 CONGESTION AND TRAFFIC MANAGEMENT

Road congestion was considered to be a problem in all cities. Congestion was particularly acute in Dakar, where the central business district is at the tip of a narrow peninsular, and all trips between the residential and business areas are concentrated on a small number of radial roads.

Failures of traffic management in all four cities contribute to the congestion problem. The signalized traffic control system in Nairobi has been allowed to decay (see photograph 9) and has not been replaced with an effective police control of the affected intersections. In all four cities, regulations restricting parking and commercial activity on sidewalks are not enforced; pedestrians spill out onto the roads, reducing road capacity and increasing safety hazards.

Some of the problems can be dealt with in the short-term, such as enforcement of existing regulations on parking or on commercial activities that spill out on the sidewalks and streets. Others, such as modification to traffic signal settings and general traffic flow priorities at major junctions, require careful study, but are relatively cheap to implement.

Table 1. Summary of Main Characteristics of Study Cities

Characteristic	*Dakar*	*Douala*	*Kampala*	*Nairobi*
Basic Socio-Economic Data				
Population of city and contiguous urban development	2.8 million	Not known estimated to be 2.5-3.0 million	2.0 million	3.0 million
Estimated population growth in last 10 years (%)	4.4% per annum	Rapid	5% per annum	Rapid
GDP per head (for whole country) per annum (US $)	640	770	240	390
Non-Motorized Transport				
Quality of pedestrian facilities	Poor	Poor	Poor	Poor
Road System				
Accidents to road users & pedestrians	No reliable statistics, but level of accidents and fatalities purported to be high			
Journey Speeds	Very low in peak period for journeys to central Dakar	Low	Low on key corridors in peak period	Low on key corridors in peak period
Quality of Road Maintenance	Poor	Very poor	Poor	Poor
Quality of Traffic Management	Poor	Poor	Poor	Poor
Transport Services				
Rail	One suburban line with 19 trains per day in each direction	No suburban passenger services	Long distance freight only. No passenger services	Very limited local passenger service (5 trains per day in each direction)
Mass Rapid Transit	None	None	None	None
Large Buses (capacity 60+ passengers)	410[1]	100	None	220
Midi-buses (capacity 20-40)	Estimated at 3,000	None	500	3000

[1] The Government of Senegal has recently acquired new buses through Indian and Swedish Official Development Assistance.

Characteristic	*Dakar*	*Douala*	*Kampala*	*Nairobi*
Minibuses (capacity 12-20 passengers)	Very few	2,000, mainly in peripheral areas	4,500	7,000
Shared Taxis (capacity 4 passengers)	10,000: most work as individual ply for hire	7,000-10,000	Few shared taxis	Few shared taxis
Motorcycle taxis (capacity 1+)	Not significant	Estimated between 10,000 and 30,000	Used extensively	Used in areas with poor road access
Bicycle taxis (capacity 1)	Not significant	Not significant	Used in areas with poor road access	Used in areas with poor road access
Regulation of Public Transport				
Are fares controlled?	Yes but competition leads to lower fares	Yes but competition leads to lower fares	No, set by operators	No, set by operators
Fare for a 10 kilometers journey (US cents)	18 US cents by midi-bus, 30 US cents by bus	25 US cents	20-25 US cents	25-40 US cents
Is supply of vehicles controlled?	No	No	No	No
Is public transport subsidized?	The big bus operator is subsidized. Midi-buses are not subsidized	No	No	No, although railway company is expected to provide un-remunerative services.

3.4.2 ROAD MAINTENANCE

The quality of road maintenance was generally poor in all four cities, mainly as a result of lack of funds. The poor state of the roads reduces vehicle speeds, thus aggravating the congestion problems, as well as increasing vehicle operating costs. There was a particularly acute problem in Douala, where the poor quality of access roads meant that some areas of the city could not be served by conventional buses.

In all four countries, responsibility for road maintenance is split between national government, which looks after the national highway system within the city, and the city authorities, which look after all the other roads. Kenya and Senegal both have Road Agencies, responsible for the long-term maintenance of the national road network. In Cameroun, the administration of the national and rural roads is the responsibility of the Ministry of Public Works, while responsibility for urban roads in large towns, such as Douala, lies with the *Ministère de la Ville*. In Uganda, responsibility for national roads lies with the Ministry of Works, Housing and Communications.

The sources of finance for road maintenance and improvement vary between countries. Cameroun and Kenya have both a Road Fund financed by a levy on fuel. In Senegal, the Road Fund is financed from central government general funds, though there are plans to introduce a fuel levy, and in Uganda, there is no dedicated Road Fund and roads are financed from the general budget.

Substantial sums of money are available to the Road Funds: US$ 30 million in Senegal, approximately US$ 40 million in Cameroun and over US$ 100 million in Kenya. However, the networks to be maintained are also very large (Senegal 15,000 km, Cameroun 50,000 km and Kenya 177,500 km). The funding in Senegal is sufficient to ensure regular routine maintenance for the whole network, but does not cover life-cycle costs for periodic maintenance. The funding in Cameroun and Kenya is barely sufficient to cover routine maintenance costs.

In all four countries, the national government provides some financial assistance to local governments for road maintenance. In Cameroun and Kenya this comes in the form of a dedicated proportion of the national funds, though the allocations are small and do not reflect the proportion of total national vehicle-km accounted for by the cities.

Even with allocations from central road funds, none of the cities had sufficient funds to ensure good quality maintenance of the local road systems, much less fund improvements. Consequently, central governments have often become involved in the financing and planning of local road systems, which has led to confusion as to the real allocation of responsibilities for the roads between the two levels of government.

3.5 THE PUBLIC TRANSPORT SYSTEM

3.5.1 CONVENTIONAL BUS SERVICES

Historically all four cities originally relied on a monopoly supplier of conventional sized buses to provide their main public transport system. Fares were regulated and the governments were often reluctant to allow them to be increased. As a consequence, the bus companies had difficulties maintaining and replacing their fleets, which led to deterioration in service coverage and quality. The monopoly supplier had then faced increasing competition from minibus operators who provided unregulated but effective service.

Dakar and Douala

In Dakar and Douala the original bus companies, State owned, were eventually declared bankrupt. In Dakar, the remains of the original company, SOTRAC, were transferred to a private company, Dakar Dem Dik (DDD). The problems associated with running a moribund fleet have meant that DDD was not able initially to provide an effective service and was dependent on substantial state subsidies. Recently, however, DDD has acquired over 400 new buses, through Swedish and Indian ODA, which permits the company to offer a much improved service.

In Cameroun, the national urban bus company, SOTUC, operated in both Douala and Yaoundé. It was declared bankrupt and closed in 1995. It was the government's long-term policy to operate a completely open market in transport, allowing operators to compete on fares, service quality and route structure. However, it was also recognized that there would be a need for a transition phase, and so following an open bidding process, a franchise was granted to a newly formed private company, SOCATUR, to provide services on 15 routes at fixed fares. In order to provide protection during the transition phase, SOCATUR's monopoly was supported by the effective suppression of competition from minibuses.

In the event, SOCATUR had great difficulty in providing the agreed services. The poor quality of some of the city roads meant that it was not possible to operate some routes, and the company had to withdraw some of its vehicles, partly as a result of damage inflicted by the poor roads. Currently it operates on nine of the 15 routes. As a consequence, most of the public transport market is supplied by a combination of shared taxis and motorcycle taxis, whose operations are described below.

Nairobi

The history in Nairobi was rather different. Kenya Bus Services (KBS), which was owned jointly by United Transport International and Nairobi City Council, had a monopoly on the operation of conventional (big bus) services, even after the legalization of *matatus* (minibus) services in 1973 (the monopoly was broken in the early 1980s, with the formation of Nyayo Bus Services, which subsequently failed). Fares were controlled, but at a level which enabled the company to continue to operate profitably, although it was not sufficiently profitable to justify expansion. As a consequence,

the needs of market growth were met by the matatu operators, and the market share of KBS gradually fell. The company now concentrates on high volume routes, where it is able to compete effectively with the matatus.

In the early 1990s, KBS was taken over by Stagecoach Holdings (a major UK transport operator). The company attempted to take advantage of the recently liberalized market regulations by raising fares, in the belief that passengers would be prepared to pay a premium for the better quality of service. In the event, this strategy was not commercially successful, and Stagecoach sold out to a consortium of local investors in 1998.

KBS now provides two different kinds of service in Nairobi, each operated by separate divisions of the company. The Bus Track division provides a conventional service, with a fleet of 270 single deck vehicles. Interestingly, the operation of the routes has been contracted out to 22 independent groups, in order to take advantage of the more flexible labor and operating practices of small enterprises. Until recently, the services were profitable, but recent changes in safety rules, which have prohibited standing passengers, are threatening the division's long-term financial viability.

KBS has also set up a special division, Metro Shuttle[2], to provide a premium service, with higher service quality and comfort, designed to appeal to car commuters and higher income passengers. A higher fare is charged, but the service has proved successful and is being imitated by other operators, the main one being City Hoppa. However, the combined market share of the premium services is very small, at approximately 2.5 percent.

Kampala

In Uganda the privately owned company was nationalized in 1972 and stopped providing urban services some years later. A private sector company introduced a limited service with 40 buses in 1994 but there was intense competition from the minibus operators and the service did not last.

3.5.2 MINIBUS OPERATIONS

The minibuses play such a vital role in the provision of public transport that it is worth considering the similarities and differences in the way in which they are operated. In Kampala and Nairobi the majority of minibuses have 14 seats, though in Nairobi, the number of larger minibuses, with 25 to 39 seats has been growing rapidly. In Dakar the Cars Rapides are larger with 23 or 25 seats. A few larger vehicles with 30-39 seats are operated in both Dakar and Nairobi. Douala is an exception, since minibuses are banned throughout most of the city, although this policy is now changing.

[2] At the time of the workshops (June 2005) Metro Shuttle was no longer operating, as the vehicle supplier had impounded the Metro Shuttle buses, because KBS had used them as security for loans on other vehicles and failed to keep up payments. At the time of writing, it was not clear how this situation would be resolved.

In all four cities it is now normal for owners to be investors, rather than owner-drivers. Ownership is very dispersed, with most owners having less than four vehicles. However, in Dakar, there are also two major operators, one with 400 vehicles and another with a fleet of 200, out of a total fleet of around 3,000.

Owners usually hire out the vehicle for a daily fee to a principal driver, who may employ a second driver and one or more conductors. The driver keeps the revenue collected but is responsible for paying the costs of fuel, use of the minibus terminals, the wages of any second driver and the conductors as well as any other fines extorted from him by the police or the route associations.

In Kenya and Uganda the drivers work very long hours, with shifts averaging more than 12 hours a day usually for six or seven days a week, although driving hours are normally nearer 7 to 8 hours. In West Africa it appears that crew conditions are less stressful. The Cars Rapides normally have two drivers both working about eight hour shifts and also tend to have both a conductor and a route assistant.

So as to maximize the revenue from each trip the minibus driver will not normally leave the terminal until the vehicle is full. This means that at off-peak times vehicles wait very long times at the terminal. It also means that vehicles tend to be full at adjacent points where passengers might wish to board. With the current pattern of operations there is a clear oversupply of minibuses at off-peak times, with vehicles waiting for between one and two hours to load at the terminals.

In Dakar, Kampala and Nairobi, the Governments make no attempt to control the supply of minibuses. Effectively control has been passed to the route associations or syndicates. These are supposed to operate in the owners' and drivers' interests but there is always a danger that they may be controlled by outside agents who use their de-facto monopoly power to further their own interests. This does not appear to be a major problem in Dakar, but the Government in Kenya has recently taken steps to try to break the power of criminal syndicates which were extorting revenue from the operators of some minibus routes.

In Kampala the supply of minibus services is effectively controlled by the Uganda Taxi Operators and Drivers Association (UTODA). They have the license from Kampala City Council to operate the only taxi park (bus terminal) in Kampala, and all minibus operators are obliged to start and end their journeys in the park (and pay a fee to UTODA for each entry). UTODA was initially set up to protect and promote the interests of owners and drivers. However, it has become extremely powerful and earns a substantial income from charges levied on minibus operations.

3.5.3 SHARED TAXIS IN DOUALA

The effective suppression of minibus services in Douala was intended to strengthen the position of SOCATUR, the conventional bus company. However, SOCATUR's failure to provide acceptable service levels and coverage has left a gap in the market that has been filled by shared taxis.

The industry structure of the taxi companies in Douala is very similar to that of the minibuses in the other cities. The vehicles are rented out to drivers on a daily basis at a fixed price which depends on the condition of the vehicle. The drivers retain all the fares. The owners are responsible for vehicle maintenance, while the drivers are responsible for fuel costs.

While there are some owner-drivers, most do not drive their taxis. Ownership is very dispersed, with very few owners having more than one or two vehicles.

There are eight taxi syndicates, responsible for representing operator interests to the government. It is a legal requirement for the taxi operators to be members of a recognized syndicate, although there are a substantial number of unregistered taxis, known as *clandos*. There is little evidence that the syndicates are able to exercise any significant market power.

3.5.4 MOTORCYCLE TAXIS (MOTO-TAXIS)

The use of motorcycles for taxi services has grown very rapidly in Douala in recent years, mainly as a consequence of the poor state of the roads; the motorcycles are better able to negotiate potholed and broken surfaces than conventional 4-wheeled vehicles. Initially, the services tended to provide access from the residential areas to the main roads where passengers would take taxis or buses. However, the services can now be seen on the main roads and even in the city centre. Moto-taxis may now account for as much as 30 percent of all motorized public transport trips in Douala.

The motorcycles generally in use are small capacity (less than 100 cc), low power models, and the drivers are not required to hold a driving license. The drivers are often young and inexperienced, and accidents, often fatal, are common. In contrast with the minibus sector, most motorcycle taxi operators own their machines or buy them on hire purchase, which can normally be completed within a year.

The use of motorcycle taxis is also widespread in Kampala. Motorcycle taxis exist in Nairobi but are much less widely used, and almost unknown in Dakar.

3.5.5 RAILWAYS

All four cities are served by their national rail systems but the only functioning passenger rail services are found in Dakar and Nairobi. In Dakar, there are 19 trains per day (each way), provide by the *Petit Train Bleu* (PTB), which runs from the port area to the satellite town of Rufisque, a distance of 30 km. Journey speeds are slow, but still substantially faster than road during peak hours. However, capacity is limited and the railway carries less than 2 percent of all motorized journeys.

It is proposed to privatize the operations of the PTB, though track provision will remain a government responsibility. It is also planned to improve the track and to increase track capacity. The services currently operated are not financially profitable and it seems likely that direct or indirect financial support will continue to be required.

Kenya Railways offer a limited passenger service of 5 trains per day each way. Fares are lower than those charged by *matatu* operators, and the service is well used, but meets only a small percentage of the total demand. The service is unprofitable.

No suburban passenger services are currently provided in Douala or Kampala.

3.6 THE FINANCIAL VIABILITY OF PUBLIC TRANSPORT

3.6.1 CURRENT SITUATION

Conventional Buses

The Consultants' analysis has shown that in Douala and Nairobi the relatively small conventional (big) bus fleets which still remain are earning enough to cover their short term costs but not enough to finance the replacement of the fleet. Unless there is a change in policy it seems likely that conventional buses will, in the medium term, cease operating in these cities.

The situation in Dakar is rather different. Despite Government financial support, DDD, the conventional bus operator, initially faced severe operational difficulties, due to lack of funds, compounded by the problems of running a moribund fleet. The funding problem was compounded by the commitment to keep the fares at the level charged by SOTRAC, the former operator. The Government wished the provision of big bus services to continue and, recognizing DDD's problems, agreed to subsidize the service until such times as new buses could be procured. As noted above, DDD's fleet has now been renewed but, it is understood, a subsidy is still paid, in order to compensate for the unchanged fare level.

Minibuses and Shared Taxis

It is inevitably difficult to assess the financial viability of the minibuses and shared taxis since few operators keep detailed accounts. Clearly the profitability of the industry depends upon the supply of vehicles relative to the demand. The fact that the industry is as large as it is means that a number of investors have been persuaded that it is a profitable industry, even if later they find this is not the case. The early entrants to the market may well therefore have been more successful than more recent entrants.

The Consultants' analysis and evidence suggests that in Kenya the owners of second-hand 14 seater minibuses can probably earn sufficient revenue to pay back their capital outlay well before the vehicle's life expired. They may however only be able to do this by negotiating tough deals with their drivers who work long hours for a survival wage. The Government in Kenya has tried to encourage potential minibus owners to invest in new locally assembled 35 seater vehicles. The analysis (supported by anecdotal evidence of vehicles being repossessed) suggests that it is not currently profitable to invest in these larger and considerably more expensive vehicles.

The Consultants' analysis and discussions with owners in Kampala suggests that the market in Kampala is currently over supplied and that it is not at present profitable to invest in minibuses.

The car rapide fleet in Dakar and the taxi fleet in Douala both appear to be financially self-sustaining with renewals of (albeit second-hand) vehicles taking place on a regular basis. This is consistent with the findings of an earlier SSATP study, which suggested that minibus operators could recoup their investment in one to two years[3].

Motorcycle Taxis

The motorcycles in use in Douala are low powered and cheap to purchase. The sector is clearly financially sustainable, as drivers are able to generate enough surplus in the first one or two years of operation to be able to cover the capital costs of vehicle purchase.

3.6.2 FLEET RENEWAL IN DAKAR

Big Bus Fleet

As noted above, the Government of Senegal has recently negotiated the purchase on highly concessional terms of approximately 410 buses from Sweden and India. These have been taken over by DDD, although the terms of the lease (at the time of the Consultants' visit to Dakar) were not yet public. It is therefore unclear as to whether DDD will continue to be subsidized, though it may be possible that the new, presumably more efficient, fleet could be financially self-sustaining at realistic fare levels.

The purchase agreement provides for technical assistance, to help ensure that the fleet is properly maintained. It is hoped that with this very large increase in capacity, it will be possible to offer a much more comprehensive service.

Car Rapide Fleet

As part of the efforts of CETUD to restructure the urban transport system (see below), it is proposed that groups of car rapide operators should purchase new Tata mini-buses, which will be produced at a new assembly plant in Senegal. The purchase is to be financed though a revolving credit of US$ 13 million, provided from a World Bank loan, which would be enough for an initial purchase of around 350 vehicles. The renewal of the whole fleet of around 3,000 vehicles would therefore take some years to complete.

[3] SSATP Working Paper No. 54: *Profitability and Financing of Urban Public Transport Micro-Enterprises in Sub-Saharan Africa.*

The proposal was first made in the late 1990s, but progress has been slow due to opposition from the operators, who were unhappy at being limited to a particular make of vehicle. It should also be noted that, although the financial analysis showed that the new vehicles could be operated profitably, the estimated payback period was 4 to 7 years, significantly longer than for second-hand vehicles[4]. Uncertainty about the financial returns may have contributed to the slow acceptance of the scheme. Nevertheless, at the time of writing (July 2005), 6 operator groups have agreed to take the first tranche of 105 Tata buses, currently being assembled in Senegal and which should be delivered by end July 2005.

3.7 REGULATION OF THE PUBLIC TRANSPORT SYSTEM

3.7.1 FARES AND SUBSIDIES

Fares

The West and East African cities have adopted rather different approaches to the control of fares.

In East Africa, the transport operators are permitted to determine their own fares. However, there is some evidence that the operators' association have significant influence on the fares charged, particularly in Kampala, where UTODA has drawn up indicative fares for all routes. Despite this, the operators have considerable latitude in what they charge and fares vary by time of day and season of the year.

In West Africa, fares for buses, minibuses and shared taxis (in Cameroun) are, in principle, controlled by the Government. The fares set for the conventional bus services, which were effectively controlled, were too low to permit the long-term maintenance and replacement of the fleet, and the quality and coverage of these services has fallen catastrophically.

It has proven more difficult to control fares in the informal sector, which change with market conditions, being lower in periods of low demand. In both cities, competition between operators has meant that the fares are often lower than the official tariff.

Operating Subsidies

No subsidies are paid in Kenya or Uganda. Similarly, the Government of Cameroun is pursuing a policy of market liberalization and has no intention of providing subsidies to bus operators.

[4] CETUD: *Financing of Urban Transit Micro-enterprises: Dakar Case Study*. Paper presented to the Eleventh Meeting of the Steering Committee SSATP – Urban Mobility; April 2001.

The Government of Senegal (GoS) has accepted that the conventional bus services provided by DDD can only operate at the regulated fare if the company is subsidized. In principle, GoS appears to accept that subsidies could also be paid to the informal sector in the context of a move to route franchising. This is described in more detail below.

3.7.2 SUPPLY REGULATION

Overview of Institutional Arrangements

The institutional and regulatory structure used to determine the supply of road based public transport differs between the four cities. In Douala and Dakar, the responsibilities for licensing services, vehicles and drivers lie with the Ministry of Transport, whereas responsibility for setting official fare levels lies with the Ministry of Finance. In Nairobi and Kampala, the supply of road public transport services is controlled by the Transport Licensing Boards (TLB).

Kampala and Nairobi

The Governments of Kenya and Uganda have pursued generally free market policies with respect to urban transport. The TLB in both cities has the right to specify the route on which the vehicle operates. In Kampala, in practice, there is a form of area licensing, allowing the operators to provide services anywhere in the urban area. In Nairobi, route licenses are issued, and the police endeavor to ensure that operators stick to the allocated route. The TLB in Nairobi is reluctant to issue licenses if it believes that there is over-capacity on a route, but there are, in general, no serious barriers to entry into the markets in either of the two East African cities, as anyone with a suitable vehicle will be granted a license. Fares in both cities are unregulated.

In Kenya the Government has recently introduced measures to improve the quality of service offered by the minibuses by insisting that everyone wears seat belts, and that drivers and conductors are more closely controlled. The Government has also recently banned standing passengers on the buses operated by the Bus Track division of Kenya Bus Services. The Ugandan Government has introduced a similar policy.

The regulatory reduction of fleet capacity in Kenya created a new market opportunity. Short-term fare increases, permitted under market liberalization, allowed super-profits for the existing operators and encouraged new entrants. Fares have since fallen back, as supply increased.

Dakar and Douala

The position in the West African cities is more complex. The conventional bus services in both cities are, in principle, tightly regulated, the Ministry of Transport allocating routes to a monopoly supplier, at controlled fares. However, most public transport services are supplied by the informal sector, which is more difficult to regulate.

Dakar

In Dakar, the car rapide operators run on recognized routes, which were initially laid down in local government decrees. However, the allocation of routes to operators is currently decided by the operators' associations. The Ministry of Finance has set fares for the cars rapides, but the fares charged are essentially set in the market.

Public transport services are being restructured, with the creation of a coordinating body, CETUD (*Conseil exécutif des transports urbains de Dakar*). The intention is to group the informal operators into larger units, known as *Groupements d'intérêts économiques* (GIE), and then agree an allocation of routes to all the public transport operators, both the GIE and the conventional bus company DDD. The new route franchises would also specify both service quality and fares, and could be withdrawn if operators did not fulfill their obligations. If the agreed fares are lower than those required to break even, in principle, a subsidy could be paid. However, CETUD's main source of funds is contributions from the operators, so subsidies could not be paid without funding from the Government. No subsidies to the GIE have yet been offered, and it not clear the Government's financial position would permit a long-tem commitment to subsidies for urban transport.

CETUD was set up in 1998 and progress towards restructuring has been very slow. By mid-2005, 13 GIE for cars rapides (plus DDD as a GIE for bus) had been formed. As noted above, six of the GIE have agreed to take part in the fleet renewal program, and have been allocated route franchises. The concession agreements are being finalized and will be signed when the new vehicles are delivered.

The slow progress, in part, can attribute to CETUD's lack of powers of compulsion, and it has been further complicated by the attempt to tie the restructuring to an unpopular proposal for fleet renewal. However, it also seems fair to say that the slow progress is a reflection of the problems of trying to regulate the fragmented informal sector.

Douala

In Douala, the suppression of the minibus services was quite effective, but their place was taken by shared taxis. The Ministry of Finance sets the tariffs, but the fares are set in the market. There is, naturally, no route structure for the taxi services.

SOCATUR's franchise for the monopoly provision of conventional bus services ends some time in 2005. The Government is considering a new approach of franchising individual routes. They will also revoke the ban on minibus operations in the city, so that some of the franchised routes could be served by them. They are also considering granting them area licenses in the urban periphery.

At the time of the Consultants' visit, it was still not clear how the situation would develop. In particular, the only formally constituted public transport operating company at present is SOCATUR, and it is not clear whether there will be sufficient interest among local entrepreneurs to form new companies to take over the routes that are to be franchised.

3.7.3 ROUTE STRUCTURE

A common complaint in all four cities was that the route structure was too concentrated on radial routes out from the city centre. Even in Nairobi and Kampala, where the open market structure would appear to permit, if not encourage, innovation, there was a perceived lack of circumferential routes. In Kampala, this is partly due to the role of UTODA in requiring all minibuses to use the centrally located taxi park.

Devising an appropriate route structure is a complicated process and requires detailed study. CETUD have tackled this problem in Dakar by seeking agreement with the operators but, as noted above, progress has been slow. Douala should, in principle, review the route structure before re-franchising, though it is not clear that the Ministry has the technical capacity to do this.

Both Nairobi and Kampala are carrying out urban transport studies, which may offer suggestions on route structure. However, before the TLB can introduce a formal, centrally determined, route structure a major effort at institutional strengthening will be required, to ensure that they have the necessary skills to design the network.

3.7.4 ENFORCEMENT

All the cities encounter serious difficulties in the enforcement of regulations. The main problem areas seem to be:

Vehicle Inspections

All the cities have formal requirements for regular six monthly or annual checks on public transport vehicles. However, even casual observation in the streets shows that many vehicles are in poor, and possibly dangerous, condition. Part of the problem is that there appears to be inadequate capacity to carry out the number of inspections required, but there also appears to be a casual attitude to the process of inspections. In Uganda, consideration is currently being given to the privatization of vehicle inspections, which should increase inspection capacity.

There are no facilities in any of the cities for checking vehicle emissions and these would need to be introduced if there was to be any serious prospect of improving urban air quality.

Overloading

The operators have a clear commercial interest in squeezing as many passengers as possible into their vehicles. This not only reduces the quality of service, but is potentially unsafe. There appears to be no interest in enforcement of regulations on overloading in Dakar and Douala. However, in Kenya, the Ministry of Transport has recently managed to impose and successfully enforce regulations to prohibit overloading and to require that all seats were fitted with seatbelts and that all pas-

sengers had to use them. It also managed to enforce a regulation forbidding standing passengers on Bus Track buses[5]. It is proposed to introduce and enforce similar regulations in Kampala.

Although there has been some criticism of these regulations, particularly the ban on standing passengers, as increasing the costs of public transport provision, it is clear that, given the political will, regulations can be effectively enforced.

Traffic Management

There are parking controls in all four cities. In Douala, charges are levied on the use of street parking spaces, and attempts are made to ensure that vehicles only use the designated areas. In Kampala, the charges are time related and privately collected and there is relatively little abuse. In Nairobi, a flat charge is levied and collected by the city council and there is widespread abuse. In general, illegal parking can be widely observed throughout all the cities, with attendant reductions in traffic capacity.

Similarly, although there are regulations forbidding the use of road space and sidewalks by street vendors, they can be seen encroaching on road space and blocking traffic throughout all four cities.

Recent experience in Accra has shown that active enforcement by the police of existing regulations could do much to increase road capacity and ease congestion.

3.7.5 MONITORING

There are no arrangements in place in any of the four cities to monitor the performance of public transport, or the transport system in general. During the visits to the four cities, it proved impossible to get basic statistics, such as time-series for the number of licensed operators, and it was clear that no attempts were made to collect information on system performance, such as the annual mileage of the bus and minibus fleets, average fares, or the numbers of passengers carried each day.

If a serious effort is to be made to improve the quality of public transport, there needs to be an agency responsible for the systematic collection of relevant statistics that would demonstrate that public policy goals were being met and whether the performance of the system was improving or deteriorating.

[5] Bus Track objected strongly to this measure as the buses were designed to accommodate standing passengers. The company have suffered a substantial loss of revenue from the reduction in passenger capacity.

3.8 THE OPINIONS OF TRANSPORT USERS

The Consultants held focus groups in each city with selected groups of passengers. This section summarizes the findings of those groups. Further details can be found in Appendix A.

Passengers were concerned about the affordability of public transport. A particularly strong in the two East African cities where large numbers of passengers regularly walked long distances. In Nairobi, this may have been influenced by the raise in fares as a result of the recent changes in legislation which has reduced the effective vehicle capacity to the number of seats provided.

In all four cities passengers were keen to see an enhanced role for bigger buses. This applied even in Kampala which, apart from a brief period in 1994, has not been served by big buses for more than twenty years. Passengers in Dakar and Douala showed a marked preference for using the bigger buses rather than minibuses or shared taxis when bigger buses were available. The very much reduced scale of the big bus fleet however meant that most passengers, most of the time, had no alternative but to use smaller vehicles.

Passengers generally disliked using minibuses. In Nairobi, and especially in Kampala, passengers particularly disliked not knowing for sure the level of fare they would be charged until they boarded the vehicle. In Dakar passengers complained of the tendency of minibus drivers to change their mind as to where they were going if heavy congestion looked like prolonging journeys and if they could spot more profitable options elsewhere. Passengers, especially women, also complained that they felt less safe on minibuses and were more likely to be subject to harassment.

Passengers were also concerned about road congestion, which leads to extended journey times and would have preferred there to be a wider selection of destinations available without the need to change vehicles.

In Nairobi, Kenya Bus introduced the Metro Shuttle, which was designed to provide a higher quality service that would encourage car owners to switch to public transport. The service has proved popular and, at least in the short term, profitable. However, Metro Shuttle only caters for a very small share (around 1.5 percent) of the public transport market. Its importance is that it has been successful in persuading car owners to switch to public transport. As such it may indicate a useful option for further development both in Nairobi and elsewhere.

3.9 DOES THE PRESENT SITUATION MEET THE REQUIREMENTS OF A WELL PERFORMING SYSTEM?

Chapter 2 sets out seven requirements for a performing transport system. In this section the extent to which the transport system in the four cities meets these requirements is carefully considered.

Requirement 1: Affordability

A large number of passengers, particularly in Kampala and Nairobi, cannot afford to use public transport on a regular basis and instead tend to walk long distances to and from work.

Survey evidence in Douala suggest that total transport costs, mainly for journeys to work, account for a very substantial part of family income, from 16 percent for the non-poor to 30 percent for the very poorest groups. The Consultants' focus groups in Douala suggested that average annual journey to work transport costs were around US$ 360 per person, while in Dakar, which is less dependent on the inherently more expensive shared taxis, average costs were around US$ 160 p.a.

Requirement 2: Safety

Whilst it is difficult to obtain accurate statistics the transport system is clearly not as safe as it should be. Driver behavior (particularly of minibuses) in all cities was criticized as erratic and dangerous and many vehicles are barely roadworthy. Additional steps need to be taken to control the operations and the extremely long working hours of some minibus drivers. More attention also needs to be devoted to providing safer facilities for those walking or using non motorized transport.

Requirement 3: Reasonable Journey Times

Journey speeds are slow in all four cities as a consequence of congestion. Journey times are extended by the need to change between modes or routes. It was noticeable, however, that waiting times in the informal sector services in Douala (moto-taxis and shared taxis) and in Dakar (cars rapides) were much shorter, at 5 to 10 minutes, than for the conventional bus services, where waiting times of 30 to 50 minutes were common. There is less data on journey patterns in Nairobi and Kampala, but passengers complained that the minibus operator practice of not leaving the terminal until the bus is full meant that passengers wishing to board outside, but close to the terminals, often had to wait a long time. The concentration of all services in the central taxi park in Kampala also meant that many passengers have to walk long distances to the taxi park to ensure that they can get a seat in a minibus.

Requirement 4: Quality of Service

Passengers appear highly dissatisfied with the quality of service offered by the minibuses, despite the fact that they are far and away the largest supplier of public transport in the three cities where they are allowed to operate. However, passengers would appear to be more satisfied with the quality of service offered by the conventional bus operators in Dakar and Douala, although the diminishing fleets meant that they could only offer very infrequent services. Similarly, bus passengers in Nairobi were relatively satisfied with the quality of service and found the frequency on the core network acceptable. Predictable fares were also seen as an advantage and fixed fares are now being adopted by some matatu operators.

Requirement 5: The Environment

The major environmental problem associated with public transport in the four cities was air pollution from vehicle exhausts. This is not just a question of amenity, as poorly tuned engines emit particulates, which are a potentially serious health hazard, particularly in East Africa, where leaded and high sulphur fuels are still in use. There is no data on vehicle emissions or on air quality, so it is not possible to assess the seriousness of the situation. However, the pollution from vehicle exhausts is clearly visible in all four cities and, as yet, there are no procedures in place to control it.

Requirement 6: Satisfactory Working Conditions

The Consultants' analysis shows that working conditions of minibus drivers and conductors are far from satisfactory, particularly in East Africa, where long shifts prevail.

Requirement 7: Sustainable Performance

Financial Arrangements

The informal sector, main supplier of public transport services, is financially self-sustaining in Dakar, Douala and Nairobi, albeit using second-hand vehicles. The position in Kampala is less clear, as it appears that there is over-supply and some operators are now finding that their earnings are not sufficient to allow vehicle replacement.

The conventional bus services in Douala and Dakar are unable to generate sufficient funds to sustain their existing fleets, much less expand to meet the needs of the growing market. This is partly a consequence of long-term fare controls, but has been exacerbated in Douala by the poor condition of the road network, which has caused physical damage to the buses and reduced the productivity of the fleet.

Institutional Arrangements

In all four cities, the informal sector is the major provider of public transport services. The institutional arrangements for licensing and controlling the system vary, but in all four cities, the authorities have found it very difficult to regulate the informal sector and have, in effect, permitted the system to be run by a mix of market forces and operator associations. The results are generally viewed as unsatisfactory. Although the informal sector provides relatively dense coverage, frequent services, and is flexible in response to changes in demand, it is also disorderly, uncomfortable and occasionally unsafe. There is a lack of service discipline, passengers dislike haggling over fares, and the services are costly relative to income.

Dakar, through CETUD, is making serious efforts to reform and restructure the public transport system, by trying to impose some order on the informal sector. The new system, however, is proving slow to implement, and is arguably over-ambitious at this stage. However, any attempt to manage the transport market will have to take explicit account of the difficulties of dealing with the highly fragmented informal sector.

Enforcement

This study also indicated a number of examples where the laws necessary for the proper performance of the transport system were not being adequately observed. However, recent experience in Kenya showed that, where there is political will, regulations can be enforced.

System Monitoring

As noted above, there is no agency responsible for the collection of relevant statistics in any of the four cities and no attempts are currently made to collect such statistics.

3.10 KEY ISSUES

3.10.1 INFRASTRUCTURE PROVISION AND MANAGEMENT

It is clear that the poor state of road infrastructure is impeding the flow of all traffic (not just public transport) in all the cities studied and leads to slower journey times and higher vehicle operating costs. The problem is particularly acute in Douala.

Lack of funds for road maintenance is the root of the problem. This problem is not unique to the cities or countries in this study and has proved very resistant to solution, despite the introduction of fuel levies to finance Road Funds. The local governments face severe difficulties in their attempts to raise local taxes, and there are in any event, many other demands on such funds. There is a strong argument for dedicating a larger proportion of the national road funds to urban areas, where most of the traffic activity takes place. However, national funds are insufficient to meet the needs of long-run maintenance of the inter-city road systems, so the problem is likely to persist.

Failures in traffic management are more susceptible to solution. The enforcement of regulations on parking and encroachment of commercial activities onto the roads can do much to ease traffic flow in the short-term. In the medium-term, relatively low cost investments in traffic lights, junction design and appropriate one-way systems can bring about major reductions in congestion levels.

3.10.2 TRANSPORT INDUSTRY STRUCTURE

The provision of public transport services in all four cities is heavily dominated by small independent operators. The operator syndicates or unions manage to enforce some kind of discipline on route allocation and, possibly, on minimum fares, but this internal regulation does not work to the benefit of the traveling public or even the operators. This is particularly marked in Kampala, where heavy charges are levied on the minibus operators by UTODA.

It is clearly more difficult for the public authorities to regulate this kind of semi-cartelized market than it was to control the fares and services of the conventionally organized monopoly bus compa-

nies. Any attempts to regulate transport services will have to take specific account of the peculiarities of industry structure.

3.10.3 SUSTAINABILITY AND FLEET COMPOSITION

Use of second-hand minibuses and taxis appears to be sustainable financially, though estimates made by the consultants show that new vehicles may be marginally cheaper, and large buses much cheaper to operate. The reluctance to invest in new minibuses appears to be a question of risk aversion as much as lack of capital, as there are some large, well funded operators in all the cities where minibuses are currently operating.

Although, in principle, big buses should be cheaper to operate than minibuses, under current conditions, the big bus fleets have not proved sustainable. This appears to be partly due to a regulatory framework that keeps the fares they can charge artificially low (in Dakar and Douala), partly due to the problems of maintaining old stock, and partly to low productivity, as a result of poor road conditions and congestion. The restriction on standing passengers in Nairobi has further weakened the position of Bus Track, the only operator of big buses.

It is not clear how effective efforts to encourage the use of big buses will be in the current competitive operating environment. Small-scale informal operators would not normally consider investing in large buses. Only large companies can contemplate the large initial outlay, and management and maintenance commitment of setting up a big bus fleet. The experience of locally based companies in Dakar, Douala and Nairobi has been disappointing and this may well discourage others from entering the market.

3.10.4 FARE CONTROL AND SUBSIDIES

There is always strong public pressure to keep fares low. However, the experience of the West African cities shows that if the fares are not high enough to cover operating costs, the bus companies will eventually fail, to the detriment of the traveling public.

Fares can, of course, be kept lower through the use of subsidies, as is being considered by CETUD in Dakar. However, it is clear that in the long-run all costs have to be covered either by fare collections or through general taxation paid by the population at large. Urban areas are generally better off than rural areas and, within the urban areas, it is the middle income groups that are the main users of public transport. It may therefore be difficult, on equity grounds, to justify subsidizing urban public transport services.

3.10.5 VEHICLE FINANCE AND FLEET RENEWAL

The informal sector does not appear to have any serious problem in financing the purchase of second-hand vehicles. Use is made of interest free loans from family and friends, personal savings and

earnings from transport operations. Bank finance is rarely used, as the banks are reluctant to accept the vehicles as security for the loan and the revenue streams in the informal sector are not sufficiently reliable to assure the banks that they will be repaid.

In most places, the informal sector manages to generate enough money to cover operating and capital (vehicle purchase) costs, and pay back periods are relatively short.

The informal sector does not, in general, purchase new vehicles, partly because of risk aversion (to the possible loss of large capital investments in the event of accident or theft) and partly the payback periods for new vehicles appear to be longer than for second-hand vehicles. It also appears that the amounts involved would require bank finance, and small informal operators have problems raising the deposits required to purchase new vehicles.

Efforts to renew the PSV fleet, on public policy grounds, will therefore involve reducing the costs of new vehicles, by giving owners assistance with finance (reduced interest rates or deposit requirements) or increasing the cost of old ones, by insisting on higher maintenance standards. It is also possible, though as yet unproven, that consolidation of the informal sector into larger financial units (such as the GIE in Dakar) could spread the risks of loss. This, combined with concession agreements that provide assured income, could facilitate bank financing of new vehicles.

3.10.6 Route Structure and Licensing

There is a strong case for moving towards a more formal route structure, to ensure that all parts of the urban area have access to public transport services and to minimize the number of transfers that are necessary when traveling between peripheral areas. There is also clearly a desire among the traveling public to see a more orderly system imposed, with fixed fares and regular services.

Experience in the four cities with imposing route structures has not generally been encouraging. In West Africa, the licensing authorities are able to specify routes and fares, though not service frequency, at least for conventional bus services. However, it has proved very difficult to impose fare and service conditions on the informal sector. In East Africa, the licensing authorities have found it very difficult to regulate the informal sector. Route structure and allocation of operators to routes are determined by the operator associations and fares are determined by the combined forces of the operator associations and the market. It is clear, therefore, that any attempt to impose a route structure and the associated licensing system will have to take explicit account of the difficulties of controlling the activities of large numbers of independent operators.

3.10.7 Regulatory Enforcement

The failure to enforce existing regulations on vehicle inspections, driver behavior and traffic management has resulted in public transport systems that are much less safe and efficient than they should be. Given a serious effort at enforcement, much can be done, in the short term and at relatively low cost, to improve traffic flow and vehicle conditions. In the past, the authorities have been

reluctant to do this, but it is clear from recent Kenyan experience that, given the political will, effective enforcement of regulations is possible.

3.10.8 INSTITUTIONAL FRAMEWORK

The various cities have differing institutional arrangements, but in all of them, the licensing and regulatory bodies all draw their authority from the national government, and the local authorities have no voice in the governance of urban transport.

The appropriate institutional structure for the regulation of urban public transport will clearly depend on the structure of the transport industry and on the attitude taken to the role of the market. An open market approach will require fewer powers and less technical expertise than a more interventionist approach. Whatever approach is followed, due account will have to be taken of the importance of the informal sector in the provision of public transport and its highly dispersed ownership. It must also be remembered that complex regulatory arrangements require substantial professional capacity for their planning, implementation and enforcement.

Public transport interacts with many other areas of public concern, notably road infrastructure, traffic management and road safety. There are inevitably areas of overlap and possible conflict between the many agencies involved. Particular areas that require consideration are:

Road Infrastructure Provision and Maintenance

Although the division of responsibilities between national and local government is clear in principle, in practice the lack of local funds mean that the national government often becomes involved in local road provision and maintenance. Further, although there is an intimate connection between the condition of the road system and the efficiency of the public transport system, there are no formal procedures in place, in any of the four cities, to ensure that the needs of public transport are considered by those responsible for the provision and maintenance of the road system.

Traffic Management

Effective traffic management can help reduce congestion very significantly. However, in the cities visited, it was not entirely clear where the responsibilities for planning and implementing traffic management measures lay. National and local governments were both involved, as were the police. However, there was no role in any of the cities for the authorities responsible for public transport.

Road Safety

The improvement of road safety is normally the responsibility of the Ministry of Transport, but it inevitably involves other agencies. In particular, the police have to be involved in dealing with infractions of traffic laws, and may also become involved in the identification of vehicles that are not roadworthy. Safety is clearly an important concern for the public transport industry but there are

currently no formal procedures to ensure that either the authorities or the operators are involved in the planning and implementation of safety measures.

3.11 CONCLUSION

Public transport provision in the four cities is dominated by the informal sector, which offers a dense, relatively cheap, but low quality service. The system is generally disorderly, uncomfortable and frequently unsafe.

The road systems in all four cities are generally in poor condition, which increases operating costs and increases journey times. Failures of traffic management exacerbate congestion, increasing journey times and reducing service regularity. The regulatory institutions are weak and unable to enforce existing regulations or to promote effective change.

There is a clear need to improve the efficiency and orderliness of the urban transport systems, particularly in the informal sector. This will require a mix of institutional and regulatory changes, enforcement measures and appropriate investment in infrastructure and vehicles. Chapter Four discusses some of the ways in which this can be done and proposes a long-term strategy for institutional reform.

Some Lessons Learned

Importance of Infrastructure

Poor quality roads and lack of capacity reduce vehicle speeds, increase vehicle operating costs and reduce the productivity of urban public transport. Funding for urban road maintenance needs to be increased, as current allocations do not reflect the share of urban transport in the national road system.

Need to Enforce Existing Regulations

Lack of effective control on parking and commercial activities on sidewalks reduces the capacity of the urban road network, puts pedestrians in danger and causes congestion. Consistent efforts to enforce existing regulations can greatly ease traffic. Recent experience in Nairobi shows that, with political will, effective enforcement is possible.

Long-Term Dangers of Fare Controls

Government imposed controls on fares rarely keep pace with cost increases. The consequent drain on bus company finances mean that vehicles cannot be maintained or replaced, and service quality deteriorates.

Role of the Informal Sector

The informal sector is the main provider of public transport in all the cities studied. It is admittedly disorderly, but is also flexible, efficient and very resilient, and is a great generator of employment. Efforts to suppress the informal sector are likely to be ineffective and Governments will have to work with (and not against) the informal sector, if they wish to improve the quality of public transport.

Consolidation of Small Informal Sector Operators

The development of a more orderly public transport system, with published fares, regular services and guaranteed service quality, will require the consolidation of small independent operators into companies or cooperatives, as is being done by CETUD in Dakar at present. However, the independent operators are often reluctant to consolidate, and will require a mix of compulsion and incentives. It is still too early to say how successful the CETUD experiment will be.

Big Buses

Big buses are, in principle, more efficient, and their use should be encouraged. They will be effective on high volume, uncongested, routes, where high productivity can be achieved. They may require protection from competition from minibuses.

Financing New Minibuses

The informal sector has no problems funding the purchase of second-hand vehicles, and payback periods are short. Payback periods for new vehicles are longer and the risks are higher. Consolidation of independent owners into larger groups would help spread risks; formal franchising agreements would provide more secure streams of future income, and could help facilitate bank finance.

Monitoring

Basic statistics on transport system performance are not collected. Until they are, it will be impossible to assess the current situation, or to establish whether it is improving or deteriorating.

4 OPTIONS FOR CHANGE

4.1 INTRODUCTION

Analysis of the current situation suggests a range of possible options for improving the transport system. These include physical improvements to the road system, traffic management measures, changes to the regulatory framework on fares and bus route allocation, and possible institutional reforms that would help ensure the development of an orderly and efficient urban transport system. This chapter discusses these options for change, and assesses the likely impact of each of the options on the transport system in terms of the criteria for a well-performing system (set out in Chapter 2). This chapter concludes with suggestions for short, medium and long-term measures to move from the unsatisfactory current situation to a better functioning system.

4.2 ROAD INFRASTRUCTURE

4.2.1 REHABILITATION AND MAINTENANCE OF THE EXISTING NETWORK

The poor condition of the road network in all four cities reduces vehicle speeds, thus lowering the productivity of the bus fleet, and increasing the cost of vehicle maintenance, due to additional wear and tear. Indeed, the condition of many roads in Douala is so poor that it will prove impossible to introduce any kind of conventional bus service until the roads have been brought back to motorable condition. Improvements to the existing network are therefore necessary, to reduce vehicle operating costs, which potentially make bus services more affordable, and to reduce journey times.

Improvements to the network will require major expenditures on the rehabilitation of deteriorated road sections, which must be accompanied by a significant increase in maintenance activity and expenditure, to prevent future deterioration. The necessary funding could be raised from a combination of:

- Increased allocations from national Road Funds to urban areas
- Increases in local authority taxation
- Official development assistance

4.2.2 SMALL-SCALE IMPROVEMENTS TO THE ROAD NETWORK

In addition to programs of rehabilitation, as the cities expand, there will be a need to provide additional road capacity. Construction of new roads within the existing urban area is costly and often

provokes public opposition, but significant improvements to traffic flow can be achieved by small-scale improvements.

Road Widening and Major Junction Improvements

Additional capacity can be created at relatively low cost by widening narrow roads and improving junctions, and possibly by constructing flyovers. In particular circumstances removing traffic bottlenecks, such as a narrow bridge at a crucial point on the road network, can be a very cost effective way of reducing journey times and increasing the productivity of public transport vehicles. However, identification of such bottlenecks requires detailed study of the road network.

The implementation of this policy will require detailed consideration of environmental and social impacts, as road widening and flyover construction in urban areas often involve displacing large numbers of residents and substantial expenditures on land acquisition.

Provision of Better Facilities for Pedestrians

The Consultants noted on their visits to the four cities that pedestrian facilities were often of poor quality and badly maintained. Sidewalks, where they exist, are often in poor condition and may be partially blocked by commercial activities, forcing the pedestrians into the road and risking both their own and other road users' safety. Pedestrians also often find that they need to cross busy roads at places where they have no protection from fast moving traffic. Improving the facilities for pedestrians could therefore considerably reduce the number of transport related accidents.

Pedestrian movements are widely dispersed through the urban area, and implementing this option would require careful study in order to identify the points of greatest need. The responsibility for these measures would normally lie with the municipal authorities, but clearly it would be necessary to coordinate with the national road authorities where national roads are involved. It should also be noted that a significant level of funding may be required to make a worthwhile improvement to pedestrian facilities.

4.2.3 BUILDING NEW BYPASS ROADS, WHILE THERE IS STILL TIME

Given a long-term need for additional road capacity, consideration should be given to building the necessary infrastructure ahead of requirements. It is much cheaper to build a new road through an area which has not yet been developed than in an existing urban area. Particularly in rapidly expanding cities, there may therefore be a case for building new roads, while there is still time taking account of the remaining gaps in the urban fabric. Any new road should however be carefully designed to ensure that it can be well integrated both with the existing road network and with future planned land use.

Pursuing this policy will require careful coordination between the local authorities, who are normally responsible for the long-term planning of urban infrastructure development, and the national government which will normally be involved in the provision of funds for major road investments.

4.2.4 BUS RAPID TRANSIT, LIGHT RAIL TRANSIT AND SUBURBAN RAIL SERVICES

Segregated public transport services, such as bus rapid transit (BRT), light rail transit (LRT) or suburban rail services potentially offer much higher levels of service than conventional bus or minibus services operating on the existing road network. The exclusive right of way means that congestion can be avoided, thus offering faster and more reliable services. For example, the suburban rail service in Dakar, the PTB, even with poor track and old rolling stock, is able to provide a much faster peak-hour service to the outer suburbs than road-base public transport. In the right circumstances, these services can form an important part of the core network and can be combined with feeder services provided by conventional buses or minibuses.

The requirement for dedicated right of way means that such services are expensive to provide and construction can often involve the sacrifice of some of the existing road network. They are most effective where the location of residential areas relative to employment centers concentrates the demand for passenger movements on a limited number of corridors. In this regard, the funnel shape of the urban area in Dakar suits mass transit systems in a way that the more dispersed nature of Kampala, Nairobi and Douala does not.

Bus rapid transit is, in many ways, a development of the bus lane concept (discussed below) and is significantly cheaper to provide than rail based systems. It can also be combined more readily with the existing road systems. However, although BRT is under active consideration in Accra, Lagos and Dar es Salaam, there are, at present, no functioning BRT systems in Africa.

Any investment in mass transit systems has to be very carefully evaluated, in order to ensure that the system is both economically and financially viable. In particular, it will be important to establish whether the system will be financially self-supporting or whether it will require a subsidy. It will therefore be necessary to:

- Determine the full investment and subsequent operating costs of the system;
- Accurately assess the demand for the system; there has for example been a tendency for promoters to overestimate the patronage of new light rapid transit schemes;
- Assess the resultant costs and benefits to make sure that the project offers a worthwhile economic return;
- Prepare a robust financial plan to make sure that the company operating the new system will earn sufficient revenue to be able to properly operate and maintain the system, preferably without subsidy; and
- Establish that there is no alternative, cheaper, scheme which is more cost effective.

4.3 TRAFFIC MANAGEMENT

4.3.1 SHORT TERM MEASURES

Enforcement of Existing Regulations on Parking and Encroachment

It is evident in all four cities that failure to control parking and the use of sidewalk spaces for commercial activities both reduces effective road capacity and puts pedestrians at risk. Serious efforts to enforce existing regulations, which is basically a job for the police, could therefore both reduce congestion and improve safety. Recent experience in Accra suggests that this is a practical suggestion, which will give good results.

4.3.2 MEDIUM TERM MEASURES

Improved Junction Design and Operation

The congestion which has arisen as a result of the failure of the centralized signaling system in Nairobi illustrates, by negative example, the benefits of traffic management measures. Improved junction design and the installation of working traffic lights can reduce delays at intersections. In particular, bus priority schemes at key junctions can significantly reduce public transport journey times without inflicting undue delays on other traffic. These measures are relatively inexpensive and can be put in place quite quickly.

The municipal authorities would normally be responsible for designing and implementing these measures. Careful study, possibly using specialist consultants, would be required to ensure that the improvements were correctly located and designed.

Finally, it should be noted that it may be necessary to combine the junction improvement with an enforcement campaign as the benefits of the improvements will be lost if drivers fail to obey traffic laws.

Bus Lanes

Public transport can carry far more passengers per unit of road capacity than private cars. A fully loaded bus may carry 20-30 times as many passengers per unit of road capacity used than a car with only a driver. A 14 seater minibus may carry 8-10 times as many passengers per unit of road capacity as a lightly loaded car. When roads are congested there is therefore a strong case for reserving some road capacity for the sole use of public transport. This can best be done on relatively wide roads where one lane can be reserved for the sole use of public service vehicles, and can be combined with priority measures for buses at junctions (see above). The introduction of bus lanes should reduce journey times and improve public transport vehicle productivity, though it reduces the capacity for other road users.

It can be difficult to introduce bus lanes as there is often opposition from other vehicle users, and there can be enforcement problems ensuring that the bus lanes are only used by buses. It is therefore important that there is strong political support before such schemes are introduced.

The municipality would normally be responsible for the introduction of bus lanes, but would need to coordinate carefully with the national authorities, where national roads were involved, and with the police, who would have to enforce the schemes.

4.3.3 LONGER TERM MEASURES

Charging for the Use of Congested Roads

Charging for the use of congested roads is designed to ration the demand more closely to the available supply. Advocates of such charging argue that it is the most effective way of allocating the use of a scarce resource. Those most prepared to pay use the road. The revenue derived from the charging scheme can be used to help finance necessary improvements to the transport system. The opponents of charging argue that it is unfair for it penalizes the poor who cannot afford to pay, although in fact bus passengers are often one of the main beneficiaries from congestion charging schemes.

The charge can either apply to all vehicles or only to certain classes of vehicles. It would, for example, be possible to exempt all public service vehicles. Alternatively, only large buses above a certain capacity could be exempt.

It is technically quite difficult to charge directly for road use in urban areas, as it is not practical to collect tolls on congested urban roads. However, it is possible to impose charges on entering congested areas. Charges have been levied on vehicles entering the central urban area in Singapore for many years. A similar area based congestion charge has also been successfully introduced in Central London. Clearly, careful thought will be required to determine whether these developed country examples can be applied in an African context.

There is little doubt that an effective road charging scheme can lead to significant reductions in the volume of traffic using the urban road system. Bus journey times will be reduced and bus productivity will increase. However, such schemes require careful and complex planning and are expensive to install and operate. It would normally also require special legislation to permit the introduction of charges.

Restricting Parking to Reduce Private Car Usage

It is sometimes argued that an easier alternative to implement than congestion charging, but which will have the same effect of reducing the number of cars on congested parts of the road network, is to restrict parking, particularly in the Central Area. This can be combined with the introduction of park and ride systems, where parking is provided outside the central area and combined with shuttle bus services to the centre. The reduction in central area parking should force car owners who

cannot find somewhere to park to use public transport, at least for the final part of the journey into the central area.

There are three particular difficulties in introducing such an approach:

- it may be difficult to control the use of privately owned car parking space which may expand if the supply of publicly controlled parking is limited;
- the shortage of parking may force drivers to spend more time looking for parking thus paradoxically making congestion worse rather than better, and;
- pressure of demand may lead to unplanned ad-hoc parking taking place on land not intended for parking and just outside the controlled parking area.

4.4 ROUTE STRUCTURE AND ALLOCATION OF ROUTES TO OPERATORS

4.4.1 INTRODUCTION

There are a number of different approaches to planning public transport provision, ranging from a "laisser-faire", operator led system, to one where the public authorities centrally plan the whole route network and impose service conditions on the operators.

There has been considerable debate as to what is the best way to determine the pattern of service to be provided in an urban area. The UK Government have argued that this is best left to the market because private sector operators searching for profit will provide the service the public wants and is prepared to pay for. They have however admitted that some unprofitable, but socially necessary, services may not be provided. Local government is then allowed to negotiate, normally by means of a competitive tender, to provide additional necessary services for an agreed subsidy.

Most other countries disagree with the UK approach. They believe that the public transport network and the times and frequencies with which services operate needs to be planned, although the operation of that network may be determined by competitive tendering. Essentially they advocate "competition for the market" rather than the UK approach of "competition in the market".

The Consultants found that in Kampala and Nairobi the public transport network is determined by the private sector operators without the intervention of any organization responsible for route planning. In practice the private sector operators tend to continue to operate a basic route structure and have shown little innovation in developing new routes. In Dakar and Douala the Government had in theory agreed with the big bus operators the routes they should operate but in practice most of the service is provided by the minibuses and shared taxis, which are free to operate when and where they want.

4.4.2 OPTIONS FOR ROUTE STRUCTURE

Operator Determined

This is essentially the system followed by the minibus operators in Dakar, Kampala and Nairobi. In principle, this approach offers great flexibility and should result in intense competition between operators. In practice, the operator associations effectively control the routes operated and determine which operators are permitted to provide services on them. Experience in the study cities suggests that the operators concentrate on high volume, usually radial, routes, and ignore the requirements of passengers wishing to make cross-town trips.

Operator Proposed: Licensing Authority Determined

In this option, an operator would identify a market opportunity and request a license to operate on a given route from the licensing authorities. They would then review the application and, if there were no over-riding objections, would grant a license. Licenses could be granted to one or more operators on the same route, though operators wishing to develop new routes would normally want some kind of guarantee of exclusivity.

The licensing authority could attach service conditions to the granting of the license, such as the number of services operated each day, standards of passenger comfort, fares, etc.

Centrally Planned Route Network

A centrally planned route network, in principle, offers a number of advantages. It would ensure that the urban area had full coverage, and could be planned so as to ensure ease of peripheral, as well as radial movements. It would also be possible to attach service frequency and quality conditions to operator licenses.

The network could be tailored to match the local transport industry structure. Thus, a core network of heavily trafficked radial routes could be allocated to formal companies, able to finance and operate large buses appropriate for such routes, while lower volume or peripheral routes could be allocated to smaller-scale informal sector operators. In expanding but low density suburban areas, it might be appropriate to consider issuing area licenses to the informal sector operators, allowing the market to determine the local supply, but requiring the operators to restrict themselves to feeder services to the core routes.

Within the context of a central plan, it would be necessary to have a procedure for allocating routes to operators:

- Operators could be granted non-exclusive licenses for particular routes. This approach could be used where there are large numbers of individual operators, and would mean that there would be competition between operators on a day-to-day basis. It would be difficult in these circumstances to apply service conditions, or to monitor their implementation.

- Companies (as opposed to individual operators) could be given exclusive rights to operate a particular route. In this case, it would be easier to apply service conditions and to monitor them. However, the success of this approach depends on there being a sufficient number of entrepreneurs in the city to ensure effective competition for the routes. This is discussed further below.
- A single company could be given a monopoly on the whole urban network, subject to complying with agreed conditions on frequency, fares and service quality. Past experience, in the four study cities and elsewhere, has not been encouraging; there is always political pressure to keep fares at uneconomically low levels and the lack of competition provides no incentive for operational efficiency.

4.4.3 OPERATOR LICENSING PROCEDURES

A number of different licensing procedures are possible:

- Route (or area) licenses could be granted to all qualified applicants. This is, in effect the procedure followed in East Africa. This approach is only really appropriate if the licensing authority wishes to encourage competition in the market.
- Route licenses could be awarded by administrative review, where each operator's proposal was judged against a set of published criteria, such as frequency, fares, service quality etc. This is the approach followed in Douala for the conventional bus services, and is being developed for the whole system (conventional and informal sectors) in Dakar.
- Route licenses could be awarded through an open bidding process. The licensing authority would specify the service conditions, and ask operators to bid for the rights to the route. Bids could be positive, in which case, the operator would pay the licensing authority for the rights, or negative, where the licensing authority paid the operator to provide the service[6]. Alternatively, no payments need be involved, and the route could be awarded to the operator that offered to provide the specified service at the lowest fare level. Variations on this system are in use in the UK, mainly on subsidized urban systems, but, as far as is known, have not been tried in Africa.

Under any of the schemes set out above, the licenses could be subject to renewal or re-bidding after some fixed number of years. This would introduce an element of competition for the market (rather than in the market) and give the license holders an incentive to operate efficiently and to

[6] This approach would allow licensing authority to cross-subsidize unprofitable routes from the surplus they extract from the operators of the profitable routes.

observe the service conditions. Any operator found to have consistently failed to meet service conditions could be disqualified from future tenders.

4.4.4 NEED FOR INSTITUTIONAL STRENGTHENING

The introduction of a planned route structure involves a very significant administrative effort, as is borne out by the experience of CETUD. Firstly, there is the technical work of designing the network in an efficient way; secondly, the allocation of licenses would involve a substantial administrative burden and could give rise to concerns about the transparency of the procedures. Thirdly, it would be necessary to monitor the fulfillment of service conditions by the license holders. None of these activities could be undertaken without substantial strengthening of the existing licensing authorities, which would require additional staff, funds and considerable technical assistance.

4.5 PUBLIC TRANSPORT SYSTEM REGULATION AND MANAGEMENT

4.5.1 FARE REGULATION

There are four main options open to the licensing authorities:

- control fares at a level which passengers can afford to pay;
- control fares to the level needed for public transport operators to cover their costs without making excessive profits (break-even level);
- control fares at a level considered affordable and pay a subsidy to the operators which reflects the difference between revenue and costs;
- rely on competition between operators to ensure affordable services.

The problems with fare regulations experienced in the four cities studied were discussed at some length in Chapter 3, in particular the difficulties associated with effective fare control enforcement in the informal sector. The sections below discuss the above options in the light of experience elsewhere in the world.

Control Fares at Levels Passengers Can Afford to Pay

Although superficially this policy might appear attractive as it would ensure that fares were affordable, it suffers from two severe defects:

- the level set by the Government as affordable may be too low to enable the public transport operators to provide a financially viable service. In this case the public transport operators will eventually cease to provide a service unless a sufficient Government subsidy is provided to cover the difference between the revenue received and the revenue needed; and

- the Government may find that politically it is very difficult to authorize an increase in fares even during times of inflation when an increased fare (in money terms) might be affordable.

Experience in both Dakar and Douala clearly demonstrates the weakness of this approach. The government's reluctance to allow fare increases to contribute significantly to the demise of the state companies is causing problems for SOCATUR even today.

Control Fares at Break-Even Levels

This option has been applied widely throughout the world, though not so far in the four study cities – though the estimation of break-even, or equilibrium, fares will play an important role in the reforms proposed by CETUD. It has the potential advantage that it should ensure that fares are kept as low as possible, whilst still enabling a service to be provided without subsidy. There are also some significant disadvantages with the policy in particular:

- in systems that depend heavily on the informal sector, which rarely keeps reliable accounts, it may prove difficult to estimate the break-even fare. CETUD has found it necessary to provide special training to operators to enable them to generate the necessary information.
- there is a strong risk that the public transport operator is left with no incentive to be efficient and provide a service at the lowest possible cost, since the costs will always be covered by the negotiated fare;.
- in practice the Government may find that, despite the agreed formula for relating fares to costs, it is politically difficult to authorize fares increases. Fare increases are therefore delayed and the financial viability of the public transport operator suffers as a result

Affordable, Subsidized Fares

This option has also been applied widely throughout the world, including in Dakar (with DDD) and in many cities in more developed countries. It has the potential advantage that the Government can set the level of fares at an affordable level whilst still ensuring that a financially viable public transport operation can be maintained.

The success of this option is however dependent on the Government having sufficient finance to pay the necessary subsidy. There are many examples of cities where this has not proved to be the case, and the system has broken down as the Government has experienced growing difficulty in finding the necessary finance. The public transport operator cannot maintain and renew the fleet, and the services deteriorate.

Where the Government is able to pay the agreed subsidy, this option suffers from the same disadvantage as the previous option in that the operator has little incentive to be efficient if it is known that all costs will be reimbursed.

The experience in Dakar, with DDD, has not been encouraging, as the company is still unable to provide adequate services, though its position may improve with the introduction of new buses. It has been suggested that the concept of subsidy for uneconomic services could be extended to the cars rapides, but it is still far from clear that the government would be willing or able to provide the necessary finance for this approach.

Even if the Government is prepared to commit sufficient funds it may be argued that a general subsidy for urban transport is an undesirable use of Government funds since the subsidy will be shared between all urban public transport users, most of whom may be relatively well off. Unless well targeted subsidized urban transport is used, broad subsidies are unlikely to prove a cost-effective means of assisting the urban poor.

Competition between Operators

This policy has been adopted in most of the UK, and by default in the informal sector in the four study cities, but it is not in use elsewhere in Western Europe or North America. The policy has however become more common in parts of the former Soviet Union where the previous State controlled public transport systems have failed. This happened because governments were not prepared to allow fares to rise but did not have sufficient finance to pay the resultant subsidy required to enable the public transport companies to maintain and replace their assets.

The advocates of not controlling fares (and relying on competition in the market) would claim that it is the best way of encouraging efficiency in the supply of transport and of adapting the provision of public transport most closely to public demand.

The arguments of those who do not support this approach include:

- unrestricted competition may lead to an over supply. As a result the unit cost per passenger carried of providing transport increases and fares have to rise to compensate for the over supply. Some would argue that this may have happened with the supply of minibuses in Kampala and Nairobi.
- unrestricted competition may lead to an over concentration of services on corridors of high demand and to inadequate provision of services on routes with less demand. Areas of low demand may not be served at all.
- whilst in theory competition should bring many advantages it is very difficult for public transport markets to be truly competitive. Operator associations or cartels, such as UTODA in Kampala, have considerable market power and can use it to influence both fares and service levels.

4.5.2 NOTIFICATION OF FARE LEVELS

It was made very clear to the Consultants during discussions with passengers that they intensely disliked the system whereby fares, particularly minibus and shared taxi fares, could vary at very

short notice from day to day. This concern is understandable particularly if some potential passengers do not know how much money they need to have at the end of the day to get home.

Where the Government decides not to control fares there may still be a case for requiring all public transport operators to publish their fares and give notice before changing them. This would avoid the worst effect of passengers not knowing in the short run what the fare charged would be, whilst giving the public transport operators the flexibility they need to protect their business by being able to adjust fares when costs or circumstances change.

If such a system were imposed it would be necessary to have some procedure whereby those who tried to take account of exceptional circumstances to charge more than the published fare could be reported. A decision would also have to be taken as to whether it would be legal to offer to take passengers for less than the published fare at times of low demand. In practice it might be difficult to prevent this. There is however a danger that if operators know that fares may be negotiated down they may set artificially high published fares to which they aspire but do not very often expect to achieve. In this case the realities of fare negotiation will have changed little despite the legislation. Potential passengers will still be left with considerable uncertainty as to what the actual fare will be at any specific time.

4.5.3 MEASURES TO IMPROVE SERVICE QUALITY

Vehicle Maintenance

Most countries have introduced schemes to inspect vehicles, particularly public service (PSVs) vehicles at regular intervals. This is a key element in any efforts to make public transport safer. Further, it is possible to impose a regulatory requirement that the PSVs are maintained in a condition suitable for use by passengers, by specifying standards for the passenger areas, as well as the mechanical condition of the vehicle. Such regulations, if effectively enforced, could help improve the quality of service and safety.

It is important that these procedures are appropriate and can detect particularly dangerous practices, but they should not be so stringent that costs are increased unless there is a clear resultant safety benefit. It should be a minimum requirement that all public service vehicle license holders should maintain vehicle maintenance records which show that the vehicle has been inspected at specified intervals and passed as fit for operation by a properly qualified inspector. Adequate facilities for vehicle inspection would need to be provided.

Better Regulation of Public Service Vehicle Drivers

Control of Working Hours

The Consultants' analysis of the operation of the minibus industry in East Africa showed that most drivers worked very long hours for an uncertain final remuneration. As a result drivers are often tired and stressed. This is clearly not conducive to safe driving. Most drivers in West Africa ap-

peared to work shorter hours. The process of employing "squad drivers" who may take over and drive any vehicle also appears inherently unsafe. It is noted that the Government in Kenya has recently introduced legislation to try to change the way in which drivers are remunerated by owners but it is felt that more could be done. In particular some system could be introduced to monitor and restrict drivers' hours.

Route Discipline

Short tripping, the practice of the minibus drivers of turning round before completing the advertised route, is quite naturally resented by passengers, as it involves much inconvenience and additional costs. The practice could be formally prohibited, as a breach of the implicit contract between the passengers and the operator.

Driving Standards

Minibuses are often driven in an erratic, dangerous and inconsiderate way. Speeding and stopping without warning to pick up passengers are common practices. Such behavior is in breach of existing traffic laws and enforcement is basically a matter for the police. However, it is possible to reduce speeding through the introduction of regulators, as has recently been introduced in Kenya.

Driver education and more stringent testing can help improve standards in the long-run.

Potential Enforcement Problems

Overall there appears to be a good case for the stronger regulation of minibus operators. At present the main regulators of the supply of minibuses are not the government but the route associations. These organizations were not set up to further the public but the operators' interests. It is not uncommon for the associations to be infiltrated by outsiders including criminal elements who now exploit the associations' monopoly control of the route for their own purposes. It is difficult to envisage an efficient minibus service operating without some control by a route association, but it is important that there is also a nominated Government organization which can negotiate with the route associations and if necessary demand changes.

The main difficulty of introducing any changes will be:

- opposition from both drivers and owners who will be concerned that the change in rules will adversely effect their income although, as is discussed in the next chapter, the Consultants believe that this need not be the case;
- deciding who should be responsible for implementing and managing the regulation of drivers, and
- developing a workable scheme for controlling drivers' hours which can be enforced and preventing drivers from cheating by using false names or other procedures to prolong their working hours beyond an acceptable level.

Bus Terminals

Operations

The Consultants noted that in both Kampala and Nairobi there was considerable congestion at and around the main minibus terminals. This congestion significantly increases the journey time by minibus but also impacts on other traffic. The problem is basically caused by too many minibuses trying to park, arrive at or leave the terminal at the same time. Better design, control and management should be able to alleviate this problem.

The reduction in internal congestion could also be combined with a system allowing more regular departures of minibuses, whether full or not, which could help ensure that passengers waiting outside the terminal areas had a better chance of boarding. The effective implementation of this option would improve service quality and potentially improve the efficiency and productivity of the fleet.

The main difficulty in implementing this option will be in getting the consent of the minibus operators to accept changed working practices. It will require careful consultation with the syndicates or organizations which control the working of the minibus terminals. If they fail to agree to make changes it may be necessary to impose them, although this could risk strong reactions from drivers who see their established way of working and making a living threatened.

It would almost certainly prove easier to improve terminal operations if controls were removed from the minibus operator associations, and put in the hands of independent terminal management companies (as in Dakar). This would reduce conflicts of interest in scheduling departures and would help avoid abuse of power by the operator associations, such as in Kampala.

New Terminals

The construction of additional terminals, particularly in Kampala (where all the minibuses are forced to use the central taxi park) would help decongest the existing terminals. It would also reduce the distances that passengers have to walk to catch a bus.

Service Diversification

The quality of most of the road based public transport provided in the four cities can be described as relatively basic. This is almost certainly appropriate since it means that transport remains affordable, without subsidy, for as high as possible a percentage of the population. The relatively basic quality provided may unfortunately tend to stop the more affluent, who can afford to travel by car or taxi, from using public transport. It is interesting that the privately owned KBS has reported that its experiment with providing a higher quality midi-bus service, Metro Shuttle, on which a comfortable seat was guaranteed, has proved successful, and has been copied by other operators.

There may therefore be a case for offering a higher quality of service, guaranteeing a comfortable seat, and perhaps providing air conditioning to those willing to pay a premium fare. The initiative to introduce premium services should come from the private sector operators, but licensing au-

thorities could actively encourage such schemes through facilitating the issuing of licenses and, where fares are controlled, allowing the operators to determine their own fare levels.

4.5.4 MEASURES TO IMPROVE THE EFFICIENCY OF PUBLIC TRANSPORT

If transport can be made more efficient it should also become more affordable, provided that the operators pass on the savings to the passengers. There are three particular ways that transport could be more efficient and hence more affordable. These are:

- improving journey times by better management of the road system. The options to do this have already been discussed in Section 1 of this chapter.
- introduction of new vehicles.
- greater use of larger buses.

Introduction of New Vehicles

Most of the informal sector in the cities visited is using second-hand vehicles, normally purchased when already 5 or more years old. The purchase price of second-hand vehicles is significantly lower than that of new vehicles, though the running costs (fuel and maintenance) are significantly higher. Estimates of life-time costs suggest that it should be somewhat cheaper (approximately 15 percent according to the calculations in Appendix B) for the operators of minibuses to buy new vehicles, though most are reluctant to do so. This appears to be a question of risk aversion, rather than lack of funds, as the costs associated with the loss of a new vehicle (from accident, theft or damage on poor roads) are much larger than with second-hand vehicles.

In principle, the introduction of new vehicles could help reduce the costs of public transport, and contribute significantly to improving the quality of service. However, it is difficult to make a case for subsidizing the introduction of new vehicles on efficiency grounds, when private owners, who must have a better understanding of their real cost structures than consultants or bureaucrats, are reluctant to purchase them. Interventions of this kind are not costless, as experience in Dakar has shown. In general, it would seem better to promote improvements in service quality by encouraging the diversification of the supply of transport services, as has happened in Kenya with the successful introduction of a higher quality, higher priced service.

Make More Use of Larger Buses

In Appendix B the full unit cost per passenger is estimated of operating different types of public service vehicles in a representative sub-Saharan African city. The vehicles considered ranged from the shared taxi, and the small minibus to the full sized bus.

The analysis shows that, where conditions permit, the unit cost per passenger of operating the appropriate type of large bus should be significantly cheaper than a smaller minibus. In cities like Kampala where over 500 minibuses per hour operate in each direction on some roads, replacement

of many of these minibuses by larger vehicles could also significantly reduce traffic congestion. Passengers also appear to prefer big buses, and consider that they offer a better quality of service.

The experiences of the four cities with big buses was discussed in Chapter 3, which details how in current market conditions, big buses do not appear to be financially sustainable. In part, the reasons are historical, as fare control or poor marketing strategies led to the deterioration of bus company finances, which made fleet replacement impossible, leaving the operators with old and unreliable vehicles. The big bus companies also appear to have higher overhead costs than the minibus operators. Further, much of the competition from minibus operators may also at times have been unprofitable and many investors in minibuses may never be fully reimbursed for the capital they have invested. The minibus industry has also been allowed to operate with safety standards below those expected from the larger bus companies.

There seems to be a strong case for the reintroduction of large buses, but it seems unlikely that it will happen with the current industry structure which is characterized by a large number of small-scale operators, who appear to be risk averse. Moreover, the small operators would need to borrow to buy a large bus, and lenders will insist on fully comprehensive insurance, which is very costly; insurers are unaware of the risks associated with operating urban buses and they base their premiums on the risks associated with operating the inter-urban buses with which they are familiar.

In practice the Consultants do not think that small investors unaided will invest in big buses. The risks are too great. Maintenance will require access to specialized facilities whereas there are many ad hoc ways of maintaining a minibus. A minimum fleet size of larger vehicles has to be built up to enable a realistic frequency to be maintained. This suggests that large buses will only be reintroduced when the industry structure changes and there are more large scale operators. It might prove possible to do this in the context of reforms to the route licensing and allocation procedures discussed in Section 4.4 above, where the exclusive rights to operate a high volume route or routes are granted to a formally constituted and adequately funded company.

4.5.5 MEASURES TO IMPROVE ENVIRONMENTAL QUALITY

Controls on Vehicle Emissions

It is possible to reduce the adverse effects of transport by imposing and implementing standards on vehicle emissions which must be observed. For such a policy to be effective it is important that:

- the standards which are set for vehicle emissions are realistic given the nature of the vehicle fleet and the nature and type of equipment available for vehicle maintenance. If unreasonably high standards are set they will either not be enforced or the economic cost of meeting these standards will outweigh the environmental benefit;
- there must be efficient, reliable and relatively inexpensive procedures for checking that vehicles meet the necessary standards; and

- an agency has to be nominated and staffed to manage the process of monitoring vehicle emissions.

Limit the Purchase of New Vehicles to Those that Have Low Impact on the Environment

This option may appear attractive. However, a balance has to be struck between the extra potential cost of low emission vehicles and the resultant improvement in the environment. New buses designed to the latest environmental standards will be more expensive than simpler vehicles manufactured in countries which do not demand such high environmental standards. Ultimately a difficult decision may have to be taken between protecting the environment and keeping public transport affordable.

It is also important to make sure that there is sufficient equipment and trained mechanics to maintain such vehicles; otherwise much of the potential environmental benefit of low emission vehicles may quickly be dissipated. If the vehicles are regularly maintained, as required, this will lead to an increase in maintenance costs.

4.6 IMPROVEMENT STRATEGIES

4.6.1 VIEWS EXPRESSED AT THE WORKSHOPS

Improvement of the urban transport system will require a mix of practical, "on the ground" changes, many of which can be undertaken almost immediately, combined with institutional strengthening and reform, which may take many years to implement. This section sets out a possible improvement strategy, working with existing organizations and moving gradually towards major institutional reform.

In drawing up these strategies, due account has been taken of the comments offered by the participants at the workshops. There was a general consensus that a more orderly system was desirable, and that it should be controlled by locally based agencies, representing all the major stakeholders, rather than the combination of centralized authority and operator interests that currently govern the sector. This suggests a gradual move towards consolidation in the informal sector, to develop operator groupings large enough to introduce a system of route concessions, together with a program of institutional change, such as the creation of a Metropolitan Transport Authority, that would allow user and other local interests a voice in the development of the urban transport system.

While there are many arguments in favor of developing new, specialized, organizations to handle urban transport problems, it must be appreciated that such a program would involve legislation, funding and a technical assistance program, all of which take time to put together. There is a danger that, in pursuing the radical solution, the whole program of reform could be delayed. Accordingly, the strategy suggested here begins with short and medium term measures that can be undertaken

within the existing institutional and regulatory framework, with an option for major institutional change to be undertaken in the medium to long term.

4.6.2 SHORT TERM MEASURES

Many of the difficulties encountered in the current urban transport system arise from a systematic failure to enforce current regulations. This section sets out some of the actions that could be taken in the short-term to improve the quality of urban transport. Most of them can undertaken at relatively low cost, while others may involve investment in additional facilities (e.g. for vehicle inspection). All will require active political support for their effective implementation.

Traffic Management Measures

Road capacity is much reduced in all the cities visited by a failure to enforce existing regulations governing parking and the encroachment of commercial activity on sidewalks and road space. Active enforcement of these regulations would make a considerable contribution to easing traffic flow and improving the efficiency of public transport operations. The initiative to start an enforcement campaign could be taken by the national government or by the local authorities, but implementation would be a matter for the police.

Overloading Controls

Overloading public service vehicles is potentially dangerous and significantly lowers the quality of service for the user. It can be effectively suppressed, as shown by recent experience in Kenya, but it will have to be accepted that fares may have to increase to compensate the operators for the loss of revenue. It should also be noted that it is not desirable, in the consultants' view, to forbid standing passengers on big buses, which have been designed to carry them, as recently happened in Kenya. This raises costs without any compensating improvement in passenger comfort or safety.

Vehicle Inspections

The failure to provide and enforce an effective system of vehicle inspection means that many of the buses and taxis in use in the cities visited are not roadworthy. The introduction of serious inspections is mainly a question of political will to ensure that existing regulations are carried out. However, it may also require a campaign to eradicate the petty corruption associated with the issuing of inspection certificates for vehicles that fail to meet requirements.

It should also be noted that, if all vehicles are properly inspected, it may prove necessary to increase the number of inspection stations and inspectors. This could take some years to implement, and could be done either by increasing the size of the official inspection body or by licensing approved private sector inspection garages, as has done in Britain for many years and has recently been (or is being) introduced in Lagos and Addis Ababa.

Increasing Funding for Urban Road Maintenance

In all the countries visited, there are clearly many demands on the funds available for road maintenance. However, the urban areas account for a very large proportion of the total traffic activity and this is not reflected in the budget allocations to urban areas. Increasing maintenance funding will not immediately result in improved roads, but it will delay the deterioration of the existing system, thus reducing future vehicle operating costs and avoiding or delaying the need for major road rehabilitation expenditure.

4.6.3 MEDIUM TERM MEASURES

In the medium-term, say two to five years, much that can be done within the existing institutional framework to improve the transport system. This includes the introduction of improved traffic management systems, the development of a formal route structure, new systems for allocation of licenses and a gradual movement away from the reliance on the informal sector, with its large numbers of individual owners, towards a system where services would be provided by a smaller number of small or medium-sized, formally constituted companies. These activities would involve a substantial improvement in the technical capacity of the licensing authorities and would probably require technical assistance programs.

Traffic Management Improvements

As noted above, significant improvements to traffic flow can be achieved through better junction design and appropriate traffic light placement and settings. The public transport system can be assisted by the introduction of priority measures at junctions, and by the development of bus lanes, where road capacity permits. These actions are relatively cheap to implement but require specialist technical studies to design the appropriate measures. Urban transport studies are currently underway in Kampala and Nairobi and, it is understood, about to be undertaken in Dakar and Douala, and should provide the necessary technical basis for selecting the appropriate improvements.

Road Rehabilitation

The road systems in all four cities visited require improvement. The situation in Douala is particularly bad, where large segments of the network are completely broken up. Repairs and rehabilitation to these networks will require the allocation of large amounts of money, whether from national or official development assistance. It is unlikely that the city authorities will be able to raise the necessary funds on their own, and the programs will have to be developed in cooperation with the national governments. However, the economic benefits from improvements to heavily trafficked urban roads will be very large, and improved roads should lead to a significant increase in public transport vehicle productivity.

Introduction of Formal Route Structures and Route Licenses

Currently, the licensing authorities in Nairobi and Kampala exercise little control over the routes operated by minibuses. In Douala the bulk of transport services are provided by shared taxis, which operate on area licenses. Only Dakar has made any effort to develop a formal network and route allocation procedure. However, the system is still being developed and until recently the operators' associations appear to have decided how the routes are allocated. Similarly, the operators associations in Nairobi and Kampala in effect determine what routes will be operated and by whom.

The current arrangements are in many ways unsatisfactory, as the route structure reflects operator interests, rather than those of the traveling public. In particular, no procedures are in place to ensure that the operators provide an appropriate level of service, either in terms of service frequency or passenger comfort. Moreover, it is a common complaint that the services concentrate on radial routes and that cross-city journeys are difficult and costly.

In the medium term, it should be possible to remedy this situation by the gradual introduction of a new route structure and a system of route licenses, as is being attempted by CETUD in Dakar. The route allocation procedure would have to take account of the fragmented nature of the informal sector and would initially have to work with individual operators, and accept that it would be difficult to impose and enforce licensing conditions in the short-term. A step-wise procedure could be used, as follows:

- The licensing authorities, (the TLB in Nairobi and Kampala, and the Ministry of Transport in Douala) could first design a new public transport network and then allocate licenses on the new routes to any qualified operator. Limited conditions could be imposed:
- in addition to normal roadworthiness requirements, all vehicles would have to meet minimum standards of cleanliness and passenger comfort, however;
- the operators would be able to set their own fare levels and determine the frequency of service, as it would be very difficult to impose conditions of this kind on large numbers of individual operators, and;
- Licenses would be renewable, after (say) three years; any operator that consistently failed to meet licensing conditions would not be eligible for renewal.
- The operators would be encouraged to form route associations, with whom the licensing authorities could negotiate. The route associations could be encouraged to incorporate or form cooperatives (like the GIEs in Dakar), so that there was a legal entity for the authorities to deal with. The authorities could also offer technical assistance to interested groups in business management, vehicle maintenance etc. (as is being done in Dakar).
- After three to five years, the licensing authorities could re-allocate the licenses, using a formal bidding process, and aiming to work with formally constituted companies, rather than individuals. At this stage, additional conditions on fare levels

and service frequencies could be imposed. Licenses could be allocated either to the operator offering the highest payment for the rights to the route or to the operator offering to run the route at the lowest fare level.

This system does not provide any operator with a permanent system wide monopoly, though the second stage would involve granting (and enforcing) local route monopolies. By ensuring that licenses have to be renewed on a regular basis, through open tendering, it would ensure that the market for public transport services remained contestable, thus discouraging monopoly abuse.

The system could be implemented in a flexible way, with only a selection of routes going to the second stage license re-allocation in the first instance. However, the approach would offer a way forward from the present impasse, and would encourage the formalization of the informal sector. Once medium sized companies were formed, it is likely that it would once again prove possible to take advantage of the lower costs of big buses, at least on the high volume routes.

The introduction of such a system could be done within the present institutional framework, though it would be useful to formalize consultations with the local authorities. Further, it would appear that the licensing authorities would not need to acquire any additional legal powers. It would however require significant institutional strengthening, both in technical and administrative capacity. The new route structures could be developed by formalizing and improving the existing system (as is being done in Dakar) or could be completely redesigned as part of an overall urban transport study. Future network development could come as a result of operator proposals or further formal study. It would be reasonable to require the licensing authorities to consult the city government when drawing up the route structure.

Technical assistance would be required to strengthen the ability of the licensing authorities to develop and update the route structures and to monitor the implementation of the system. The appropriate size, staffing and budget of the strengthened licensing authority would require detailed study. The operations of the licensing authorities could be financed through annual fees from operators or contributions from the municipal or national governments.

4.6.4 LONGER TERM MEASURES

It is evident that all the actions necessary to improve the transport system require the coordination of a number of different bodies, principally the authorities responsible for licensing operators, those responsible for licensing and inspecting vehicles, the city authorities, the national government and the police. Although it is argued here that much can be done within the existing institutional framework, it may, in practice, prove difficult to achieve the necessary degree of coordination without creating a formal coordinating agency, incorporating most of the key functions. Such an agency would also need to have its own source of funding.

Consideration could therefore be given to three forms of coordinating agencies.

Metropolitan Roads Authority

The road authority would combine the functions currently exercised by national and local governments and take overall responsibility for the management, planning and development of the urban road system. Provision could be made for a locally elected controlling board, to ensure that local and stakeholder views were represented. Its functions would include:

- Long-term planning of the urban road network. This would clearly have to be done in coordination with the local land-use planning authorities
- Ensuring the efficiency of the network, including responsibility for:
- Road maintenance
- Traffic management
- Promotion of the use of public transport, in coordination with the public transport authorities
- Ensuring adequate provision for non-motorized transport, mainly pedestrians

The Metropolitan Roads Authority could be financed from a share of the national road fund or from local taxes on vehicle usage, including the proceeds of any congestion charges.

Metropolitan Public Transport Authority

The public transport authority would have overall responsibility for the effective functioning of the public transport system. It would have powers to intervene in the market in order to ensure that transport operators provided the service local users require. Unlike the TLB in Kenya and Uganda, it would also be responsible for rail based systems of public transport and for the provision of public transport infrastructure, such as Bus Rapid Transit or bus terminals, in association with the appropriate road and urban planning authorities. Its key functions would be:

- Ensuring that public transport was as affordable as possible
- Design an appropriate route structure and ensure that it was regularly reviewed to ensure that it continued to meet transport needs
- Setting standards for quality of service and monitoring their implementation
- Review of impact of congestion and other road conditions on public transport operation and proposing improvements to the road authorities
- Determine how fares should be set and, if necessary, regulating their levels
- Ensuring the supply of public transport services was appropriate to the demand
- Promotion of investment in new public transport facilities, which might include:
- New terminals
- Bus rapid transit
- Light rail transit or suburban rail services

The Metropolitan Public Transport Authority could be financed through a combination of central government contributions and specific local taxes on public transport operators or on road users generally.

Metropolitan Transport Authority

A metropolitan transport authority would combine the roles of the Road Authority and the Public Transport Authority, which could facilitate the coordination of infrastructure development and long-term planning for public transport, as well as system management. However, the road budget will inevitably be significantly larger than that for public transport administration and care would have to be taken to ensure that the joint authority did not become dominated by the road division.

4.7 WORKSHOP FINDINGS

Following the completion of the study, which included the strategy outlined above, the report findings and recommendations were presented at workshops in all four cities. The urban transport situation in each city varies widely, and the views expressed at the workshops exhibited a correspondingly wide range. However, certain general conclusions were common to all four cities.

- The congestion and safety problems arising from the failure to enforce existing regulations on parking and commercial activities was widely recognized.
- There was a general recognition of the need to develop a more orderly and better organized public transport system. There was general acceptance of the desirability of moving towards a system of route concessions / franchises.
- There was a general feeling that stakeholder and user interests should be better represented in the management of the public transport system. In Douala and Nairobi, the view that the local authorities should have more say in how the system was run was particularly strongly expressed.
- In both Douala and Nairobi, there was strong sense that the current institutional arrangements were not working and there was support for the immediate creation of a Metropolitan Transport Authority, with local stakeholder and local authority representation.
- It was generally acknowledged that implementing reforms would prove difficult, and would involve coordinating the activities of many different organizations. In Nairobi, it was suggested that this would require political commitment at a high level and might require the formation of a Presidential Committee.

A more detailed report on the Workshops can be found in Appendix D.

4.8 NEXT STEPS

The changes proposed here will require serious commitment from national and local governments in the countries concerned, and external agencies cannot drive this process. A first step in securing such a commitment, however, can be made through the SSATP representatives in the national governments bringing the findings of this study to the attention of the key policy makers.

It is also possible, within the context of the SSATP programs, to facilitate and encourage change, and this section sets out a number of small studies that could be set up under the auspices of SSATP that could help move the process of reform forward.

1. Short-term Traffic Management Measures

A short study to identify what short-term measures to control parking and commercial activity could make most immediate impact on traffic conditions, to identify the agencies responsible for taking action.

All four cities visited on this study could usefully undertake such a study, or combine it with ongoing or planned urban transport studies.

2. Technical Assistance to Licensing Authority

This study would incorporate (a) traffic studies, to determine the geographical distribution of demand for public transport; (b) a network design exercise, to determine where formal routes should be designated, and where area licensing would be more appropriate; (c) identification of appropriate licensing arrangements for each route (franchise, route license with single operator, route license with multiple operators, etc.); and (d) training for licensing authority staff to maintain and upgrade the route structure and licensing arrangements.

This kind of technical assistance could be very useful in Nairobi (working with the TLB), Kampala (TLB) and in Douala (working with the relevant section of the Ministry of Transport).

3. Model Concession Agreements

A study to review the forms of concession/franchise in use in Europe and elsewhere (including Dakar), to develop a set of flexible model concession contracts for use in the SSATP region and to identify any legal changes necessary before concessions could be implemented.

Figure 4.1: Proposed Improvement Strategy

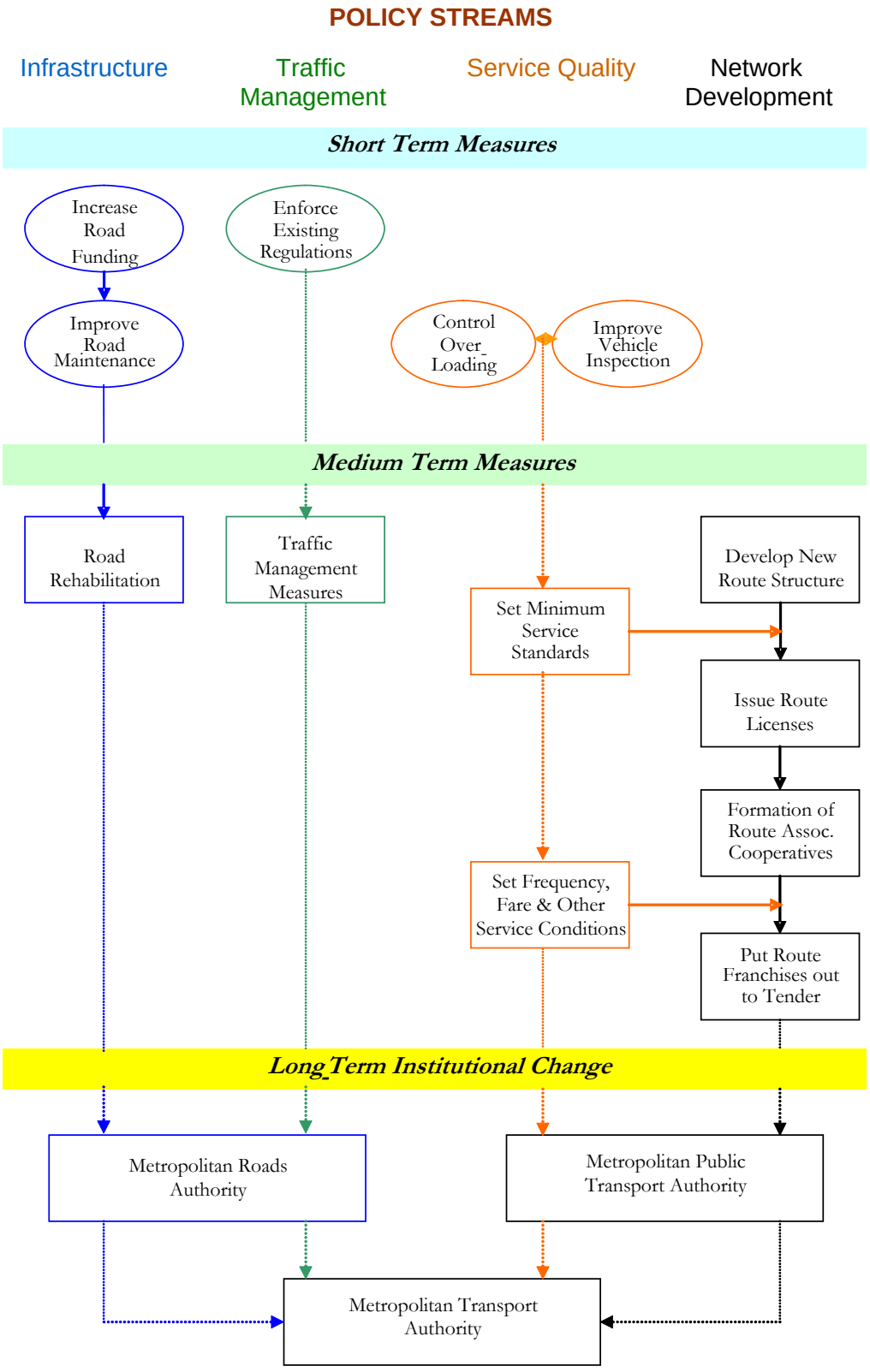


Table 2. Options for Change: Impact on Performance Criteria

OPTION	*RESPONSIBLE AGENCY*	*IMPACT*							*Comments*
		Affordability	*Safety*	*Journey Times*	*Quality of Service*	*Environment*	*Working Conditions*	*Sustainability*	
Infrastructure									
Rehabilitation and maintenance of existing roads	National & local government	Will reduce vehicle operating costs and fares		Will improve traffic flow & speeds	Should improve regularity			Will reduce operator costs	
Road widening, flyovers	"	"		"	"			"	
Pedestrian facilities	"		Segregation of pedestrians & vehicles will reduce accidents						
New bypasses	"	Will reduce operating costs & fares		Will improve traffic flow & speeds				Will reduce operator costs	
BRT, LRT, etc	"	May be expensive if not subsidized	Should be safer than current road based systems	Faster journeys for PT passengers	Should improve regularity	May result in reduced emissions		Infrastructure is expensive to build & maintain	
Traffic Management									
Enforce existing regulations	Local government & police	Unclear: will improve traffic flow, but may increase operator costs	Should improve traffic discipline & reduce accidents		Should result in more orderly services			May result in higher operator costs	
Improved junctions & priority measures	Local government	Will reduce VOC & fares	Should reduce accidents	Bus priorities will reduce travel time				Should reduce operator costs	
Bus lanes	"	"		"				"	
Road charges	National & local government	Should reduce congestion & VOC		less congestion will mean faster travel times				Should reduce operator costs	Long-term measure; can be expensive to set up & operate
Restricting parking	Local government	Unclear		Should reduce congestion		Should reduce emissions		Should reduce congestion & increase passenger volumes	
Route Structure	Licensing authority								
Operator determined		Competition should help keep fares low			Low volume routes may not be well served				Current system
Operator proposed					"				Operators may

OPTION	*RESPONSIBLE AGENCY*	*IMPACT*							*Comments*
		Affordability	*Safety*	*Journey Times*	*Quality of Service*	*Environment*	*Working Conditions*	*Sustainability*	
									require route monopolies
Centrally planned				Careful planning should reduce no. of transfers	Should result in wider coverage			May only be sustainable with formal sector operators	Will require regular review & updating
Fare Regulation	Licensing authority								
Affordable		Fares kept low at operator expense			May be reduced, as operators keep costs down			Not sustainable	
Break even		Fares set at long run costs						Sustainable, but not efficient	Operators have no incentive to keep costs low
Subsidized		Fares kept low at taxpayer expense						May not be sustainable.	Depends on government financial position – no incentive to keep costs low
Competitive		Will help keep fares low			Fares may vary by season or time of day				Cartel formation will reduce benefits of competition
Notification					Should give passengers certainty on fare levels				Difficult to implement with informal sector
Service Quality Measures	Licensing authority								
Vehicle maintenance			Regular inspections should ensure safer vehicle		Passenger comfort should improve				
Regulation of PSV drivers			Should ensure safer driving		Should improve passenger comfort		Should reduce hours		
Terminal operation				Will improve regularity of off-peak services				Improved terminal efficiency should reduce costs	
Regulation & monitoring			Improved traffic discipline should reduce		Less aggressive driving will improve pas-				

OPTION	*RESPONSIBLE AGENCY*	*IMPACT*							*Comments*
		Affordability	*Safety*	*Journey Times*	*Quality of Service*	*Environment*	*Working Conditions*	*Sustainability*	
			accidents		senger comfort				
Efficiency	Operators ~ possible government help								
New vehicles		New vehicles should be cheaper to operate	Should be safer		Will improve passenger comfort -	Should reduce emissions			Decision should be left to operators: could be introduced as premium service
Larger buses		Large buses should be cheaper to operate			Passengers prefer large buses				Unlikely while system is dominated by informal operators
Environment	National government								
Emission control		Will increase costs				Effective control will reduce emissions			Effective control & monitoring may be expensive
Controls on new vehicles		Will increase costs							

5 JUDGING THE PERFORMANCE OF THE SYSTEM

5.1 INTRODUCTION

The Consultants are required by the Terms of Reference to prepare a set of performance parameters and recommendations to strengthen the planning and monitoring capacity of city transport departments. The setting and subsequent monitoring of usable performance parameters is a challenging task.

The requirements for a well performing urban transport system are, as demonstrated in Chapter 2 multi-faceted. There is a need, as a minimum, to be able to judge the performance of the transport system against the seven criteria set out in that chapter, namely affordability, safety, journey times, quality of service, impact on the environment and working conditions of those employed in the transport industry, as well as sustainability over a number of years.

It is often relatively straight forward to determine conceptually how performance should be assessed. It may be much more difficult in practice to obtain the necessary information from which precise indicators of performance can be prepared. Much of the desired information can only be obtained from special surveys, which can be expensive. The Authority responsible for planning the transport system may have to consider carefully whether the cost of collecting the information which is ideally required to monitor the performance of the transport system can in fact be justified, or whether less satisfactory but cheaper to collect proxy indicators can be used.

In the next sections the report discusses the possible indicators which could be used to measure performance in relation to each of the seven criteria. The report first considers how performance should be assessed in an ideal situation. Potential indicators that actually can be obtained at a reasonable cost are subsequently considered.

Finally, in section 5.9, a more general set of date requirements is presented, which provides information on the overall state of the transport system.

5.2 AFFORDABILITY

In the four sub-Saharan African cities affordability is a vital indicator of transport performance. A high quality transport system might appear to perform very well but if it is too expensive for people to use it, it fails to achieve the prime objective of an urban transport system. This should be to enable residents to maximize their welfare by taking advantage of the opportunities offered by an ur-

ban area to work, shop, meet friends and relatives or take advantage of facilities available in a different part of the city from where they live.

Conceptually the affordability of transport can be measured by comparing the financial price which has to be paid for transport with the financial resources of potential travelers. If the ratio is too high for a particular mode of transport the potential traveler will not use that mode of transport. This analysis has shown that in the cities visited the ratio is such that few can afford to own and use a car, and that many cannot afford to use public transport even when the alternative is to spend a long time walking to work.

Potential Indicators

Public transport fares by mode and distance:

Information should be collected on the average fares charged for journeys of different lengths by different types of public transport. In cities where fares are published, and do not vary in the short term according to market conditions this information should be readily available. In cities where operators set the fare according to local market conditions some form of sampling will be required.

Public transport fares by mode and distance / average daily wage for different types of activity

This is a useful indicator of affordability. Information on the average daily wage for different types of activity may well already be collected by the Government. If not it can probably be assessed either from anecdotal knowledge or from a limited yet not very expensive sampling.

One disadvantage of this indicator as a measure of affordability is that it does not allow for the extent to which a desired journey will require one or more changes of mode with a consequent need to pay two fares (the Consultants' surveys in West Africa in particular have shown that a high proportion of journeys to work require one or more changes of public transport vehicle). A possible supplementary indicator could be the proportion of journeys of different lengths and for different purposes which require one or more changes. This information can however only be obtained by relatively expensive surveys.

Costs of use of a private car

The prime concern in measuring the performance of urban transport policy should be concentrated on the affordability of transport to the majority of the population who cannot afford to use a car. It is nevertheless also important to understand how the cost of owning and operating a car is changing and how it relates to the cost of using public transport. Therefore two separate indices could be prepared, one which measured the (fixed) annual cost of owning a representative car. This would include the equivalent annual capital cost of owning the car over its life, annual license charges and insurance. The (marginal) cost per kilometer of operating the representative car in the urban area should also be calculated. This would include fuel, use related maintenance and any other charges such as estimated parking fees or any congestion tax.

5.3 SAFETY

The provision of a transport system which is safe, both for transport users and for non-users, is an important objective of a well-performing transport system. It is best measured conceptually as the ratio of injuries either by population or by kilometers traveled by the population.

Potential Indicators

Death and injury by mode of travel

It is important to keep records of deaths and serious injury resulting from transport accidents. Separate records should be kept for death and serious injury to public transport users by mode, and to non-transport users who are killed or injured by contact with the transport system. The information on accidents suffered by non-transport users should indicate the mode of transport involved. Information on deaths is probably already collected in this form in many countries. It is more difficult to collect information on serious injuries. There will be a need for some agreed definition of what type of injury is sufficiently serious that it should be included in the statistic. An appropriate procedure for recording and processing information on injuries either at the scene of accidents or at hospitals will need to be developed if one is not already in place.

Death and injury by mode of travel /population

The population of the urban area needs to be estimated. This will have to be based on the best information available to the city planning authorities.

Death and injury by mode of travel /kilometers traveled

This is the best potential measure of the safety of different modes of travel. The kilometers traveled on each mode will however have to be assessed using the best available information on the vehicle miles operated by different modes of transport and average load factors per vehicle.

5.4 JOURNEY TIMES

An important measure of the performance of the transport system is that journey times should be as short as possible. There are however a very large number of potential journeys which can be made in an urban area and a decision is needed on which journey times are important. One possibility is to measure average journey times for journeys actually made but this may reflect the journeys which are possible given the current speed of the transport network rather than the journeys residents would like to make with a different transport system. It would also require extensive surveys to estimate the number of journeys currently made between different points. A second possibility is to measure journey times between all possible points but demand will in fact be more concentrated on journeys to and from key traffic generators and attractors.

Some form of traffic model would also be required to estimate journey times between the large number of origins and destinations which would need to be considered. It is therefore recommended that information on journey times be restricted to a number of representative journeys between specific points. Whilst this will not give an absolute measure of the performance of the transport system observed changes in the average journey times (or speeds) between specific points will give a measure of whether the transport system in the area considered has improved.

Potential Indicators

Average journey time between selected points by mode and time of day

This will require a structured program of surveys to be carried out to measure the journey times. The same survey could also measure information on fares charged by different modes at different times of the day.

Average journey speed between selected points by mode and time of day

This indicator gives an impression of the quality of service offered by different modes.

5.5 QUALITY OF SERVICE

The journey time is only one of the factors which determine how well the transport system performs from the point of view of the transport user. The transport user will also be concerned with the comfort and reliability of the journey.

Potential Indicators

The comfort of a journey although important, may not be easy to measure in precise statistical terms. One possible indicator is the percentage of journey time by mode spent standing. This may however be quite difficult to measure.

The quality offered by different types of vehicle will also vary. Some vehicles may be air-conditioned, others may have more space between seats. Some vehicles will be better adapted than others to cater for the disabled. An indication of the potential change in the quality of service offered can be given by recording the numbers of vehicles of different types in service on an average day.

A further important element of the quality of service is the length of time that the average passenger has to wait before being able to board a vehicle. This will of course vary from route to route and at different points along the route, depending upon the frequency of service offered and the likelihood that a vehicle will be full and not able to take more passengers. In practice it is not possible to record average waiting times throughout a whole city. The waiting times at a limited number of stops can however be monitored.

5.6 ENVIRONMENT

The impact of the transport system on the environment needs to be monitored. In theory a very large range of environmental indicators can be defined which will be affected by the operation of the transport system. It may however be difficult to measure the impact of transport induced change. If resources are limited it is important to concentrate on those elements where different transport policies can have a significant impact. The key set of indicators will be those relating to vehicle emissions.

Potential Indicators

Emissions of different types by mode

Emissions are a function of vehicle type, age and condition and the miles operated per vehicle under different conditions. A total value for emissions can be estimated if the vehicle miles operated by vehicles of different types under different conditions can be estimated. However sufficient information to do this may not always be available.

Analysis of the stock of vehicles with differing levels of emissions

A key component of the emissions in any city is the number of vehicles of different types and age in service. New vehicles potentially should emit fewer pollutants than older vehicles. Vehicle emissions are also very dependent on the extent to which vehicle owners are concerned to maintain their vehicles so as to keep emissions low. This may in practice depend upon the extent to which vehicle emissions are monitored. An important performance statistic should therefore be the number of vehicles which have passed various emission check standards.

5.7 WORKING CONDITIONS

It is perhaps arguable whether the working conditions of staff employed in the transport industry should be considered as part of a measure of the systems performance. Transport is however a major employer and it is therefore important that conditions of employment should be appropriate given the nature of the overall labor market. This review of conditions in the four cities showed that there was a risk that this was not always the case.

Potential Indicators

Average remuneration of transport workers/average wage in employment with comparable skill levels

If the necessary information can be obtained this is a useful indicator of the working of the labor market in public transport. A relatively high value for this might indicate that workers have monopoly power either because of powerful trades unions or powerful syndicates of owner drivers. A

low value may indicate either that the labor force is exploited or that poor quality labor is employed, potentially leading to a poor quality of service.

Average hours worked per day/week for different transport occupations

This study has shown that in East Africa drivers of minibuses work extremely long hours. This needs to be monitored and steps taken to reduce average hours worked both to prevent the continuation of unreasonable working conditions and to improve the potential safety of minibus operations.

5.8 SUSTAINABLE PERFORMANCE

The long term performance of the transport system is dependent on the transport system being sufficiently profitable to enable the industry to replace and modernize its assets and to expand to meet increasing demand. It is therefore important that the profitability of each of the main modes of transport is analyzed on a regular basis to ensure that sufficient but not excessive levels of profitability are maintained. When this is not the case the authorities will need to decide whether they need to intervene either to reduce monopoly profits, if profits are too high, or to subsidize or permit fare rises for unprofitable services. The appropriate intervention will depend upon the Institutional and Financial Framework which they have adopted. This is discussed more fully in Chapter 5.

The Consultants have also indicated that satisfactory performance of the transport system depends on the observance and enforcement of the law.

Potential Indicators

Estimated profitability of different modes of transport

It may not always be easy to gain accurate information on the profitability of private sector operators of buses and minibuses. The larger companies will treat this information as confidential and will not wish it to be published. The smaller companies may not keep normal accounting records. The Metropolitan Transport Authority may have to develop its own methodology for estimating the profitability of the different modes of transport.

Age of the vehicle fleet

One useful indicator of the financial viability of bus operators is the age of the vehicle fleet. Statistics should be compiled on the number of vehicles of different size and age. If the average age of the vehicle fleet is increasing this may be an indication of inadequate profitability.

Statistics on infringements by mode of transport

The authorities' responsible for ensuring compliance with the law should keep a record of the infringements that they have detected and the punishments which have been imposed.

5.9 GENERAL DATABASE REQUIREMENTS

In addition to the specific indicators outlined, which are intended to measure progress towards the achievement of a well-performing urban transport system, it is necessary to assemble other data that provides background and context for the specific indicators. The necessary data includes measures of city size, population and income, together with data on the road network, the vehicle fleet and the overall volume of traffic activity. Table T3 below sets out the database elements which should be collected, the principal reasons for collecting them and the authorities that should normally be responsible for collecting it. It should be noted that currently, little if any of this information is collected in any systematic way. The available data for the cities visited in given in Table 3.1.

Table 3. General Database Requirements

Data	Reasons for Collection	Collection Method	Responsibility for Collection
General Socio-Economic Data			
Population	Basic to assessment of scale of needs	Census; estimation of annual changed	Bureau of census
Population growth rate	"		
Average income	Assessment of transport demand, affordability	Survey	National Statistics Bureau / Office
Road Network Data			
Total mileage	Quality of provision assessments, budget estimation	Road authorities' records	National and local governments
National roads (within city)	"		
Municipal roads	"		
Road Expenditure Data	Budgeting, adequacy of provision	Road authorities' records	National and local governments
Maintenance			
National roads (within city)			
Municipal roads			
Rehabilitation & New Construction			
National roads (within city)			
Municipal roads			
Vehicle Fleet Data	Basic measure of provision levels	Public transport licensing authority records	Public transport licensing authority (TLB, Min Trans, CETUD)
Public Service Vehicles (No.)			
Big buses (> 45 seats)			
Midi-buses (30 - 44 seats)			
Minibuses (15 – 29 seats)			
Microbuses (7 – 14 seats)			
Taxis			
Average Age of Vehicle Fleet	Indicator of service quality, sustainability	Survey	Public transport licensing authority (TLB, Min Trans, CETUD)
Driving Licenses Currently Valid (no.)	Basic measure of provision levels	PSV driver licensing authority records	Public transport licensing authority (TLB, Min Trans, CETUD)
Big bus drivers			
Other bus drivers			
Taxi drivers			

Data	Reasons for Collection	Collection Method	Responsibility for Collection
PSV Performance	Efficiency measure	Survey or operator reports	Public transport licensing authority (TLB, Min Trans, CETUD)
Average annual km			
Big buses (> 45 seats)			
Midi-buses (30 - 44 seats)			
Minibuses (15 – 29 seats)			
Microbuses (7 – 14 seats)			
Taxis			
Average annual pass-km	Demand measure		
Big buses (> 45 seats)			
Midi-buses (30 - 44 seats)			
Minibuses (15 – 29 seats)			
Microbuses (7 – 14 seats)			
Taxis			
Average journey speeds	Efficiency indicator	Survey	Public transport licensing authority
Average public transport fares	Affordability indicator	Survey or operator records	Public transport licensing authority
Profitability of PSV services	Sustainability measure	Survey or operator records	Public transport licensing authority
PSV Working Conditions	Safety and HR indicator	Operator records	Public transport licensing authority
Safety		Accident reports	Police
Number of accidents involving PSV			
Number of fatalities involving PSV			
Environment			
Air quality	Basic measure of environmental quality	Survey	National or local government

APPENDIX A

PRINCIPAL RESEARCH FINDINGS OF THE REVIEW OF TRANSPORT SYSTEMS IN FOUR LARGE AFRICAN CITIES

DAKAR

ECONOMIC BACKGROUND

The currency in Senegal is the FCFA (*Franc de la Communauté financière africaine*), US$ 1.00 being equivalent to approximately FCFA 500.

The population of Senegal is a little over 10 million and is growing at around 2.5 percent per annum. Gross National Income (GNI) is US$ 5.6 billion. Gross Domestic Product (GDP) is rather higher at US$ 6.5 billion. GNI per head is approximately US$ 550. On a purchasing power parity (PPP) basis, GDP per head is US$ 1,600.

Government revenue accounts for nearly 20 percent of GDP and the budget shows a moderate surplus on current expenditure of 5.5 percent of GDP. However, when investment expenditure is taken into account, the budget deficit is 3.0 percent of GDP.

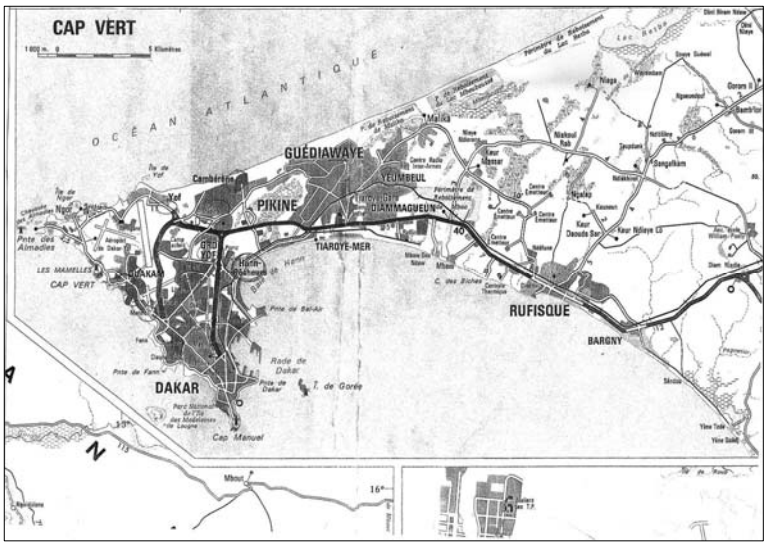
There is a long-standing balance of payments deficit, amounting to US$ 408 million in 2003, or approximately 6 percent of GDP. Total overseas debt is US$ 4.2 billion, or some 65 percent of GDP.

GEOGRAPHY

The population of Dakar and the surrounding urban areas is currently about 2.8 million, nearly 30 percent of the population of Senegal. The urban population has been growing at around 4.4 percent p.a., significantly higher than the national total of 2.2 percent, due to migration from rural areas.

Dakar was founded on a peninsular and the city has now expanded outwards in a funnel shape from this peninsular. See Map 1. Many of the newer satellites and suburbs are 30 kilometers from the centre of the city. Average journey distances to the centre are therefore longer than in many cities of comparable size.

The central business district, known as Plateau, at the end of the peninsular has a population of about 900,000. There are two major satellite towns located well to the east, Pikine-Guediawaye with a population of about 1.1 million and Rufisque a rapidly growing suburb with an estimated population of about 250,000 some 30 kilometers east of the City. It is estimated that, although the Plateau area has only about a third of the resident population of the whole area, about two thirds of the employment is located there. This leads to a massive and concentrated demand for long distance commuting trips from the satellite suburbs to Dakar City.



Map 1. Dakar and Environs

THE ROAD NETWORK

The Government of Senegal has recently dedicated increased resources to the road sector. The quality of road maintenance, whilst far from perfect, is better than in many other cities in sub-Saharan Africa. However, lack of capacity is a major problem on the major radial routes leading to severe congestion during peak hours. Road improvements, including widening of existing roads and the construction of flyovers at key intersections, are currently being carried out.

Traffic management is the responsibility of the municipality. Unfortunately, parking is poorly controlled and informal markets impinge on space on both sidewalks and roads, impeding traffic flow. A well-designed program to enforce existing regulations on road use could make a significant improvement to traffic flow.

The Institutional and Financial Responsibility for the Road Network

The *Agence autonome des travaux routiers* (AATR) is responsible for the maintenance and development of the classified network. Unclassified roads are the responsibility of the local government (*collectivité locale*). Most cannot afford to carry out maintenance and the state provides some assistance. Dakar, however, is rich enough to be able to pay for some maintenance itself.

The Road Fund is financed through the normal state budget. Currently the Fund receives FCFA 15 billion (US$ 30 million) of which FCFA 12 billion is spent on roads. This is a considerable increase on the FCFA 3 billion available a few years ago. It is however a lot less than the estimated requirement of FCFA 40 to 50 billion per annum which the AATR have estimated is necessary to cover the ongoing requirement for periodic and routine maintenance.

PUBLIC TRANSPORT IN DAKAR, THE HISTORICAL BACKGROUND

A state owned bus company, CSTC, was created in the late 1940s to provide public transit services between Plateau and the Medina area. This service was complemented by informal minibuses, or cars rapides, operating initially in the suburban areas that were not covered by the formal services.

In the early 1970s, CSTC was restructured and renamed SOTRAC. Fares were controlled and the company was obliged to offer concessions to certain groups of favored travelers (school children, pensioners etc.). The Government was unwilling to adjust fares in line with inflation and, during the Structural Readjustment Programs of the mid-1990s, the problems were compounded by the withdrawal of the tax concessions (on import duty and TVA) that the company had enjoyed. SOTRAC's financial position deteriorated and the company was unable to replace old vehicles. The fleet declined from 505 vehicles in 1987 to 200 in 1996. By this time SOTRAC was technically bankrupt. The Government therefore decided to privatize the company and a new private company Dakar Dem Dik (DDD) took over the assets of SOTRAC and started operation in 2001.

A suburban rail service on one line, running from the port of Dakar to Rufisque, was operated from 1947 to 1975, the service was then suspended until 1987 when it was reopened, as the "Petit Train Bleu" (PTB), with two trains a day operating in each direction. The service was increased in the early 1990's when additional rolling stock was purchased.

PUBLIC TRANSPORT PROVISION IN DAKAR

Cars Rapides

The cars rapides are currently by far the most common form of road based public transport. The fleet consists almost entirely of imported second-hand commercial vans, mainly Mercedes or Renault, which are converted to passenger use on arrival. The reason for converting vans, rather than buying purpose made minibuses, are partly economic – import duties on commercial vehicles are significantly lower than on passenger vehicles - and partly practical, as spare parts are readily available, and local mechanics are familiar with the vehicle types. Conversion involves cutting out windows and installing seats. The vehicles seat between 23 and 32 passengers, depending on model type. Access is through doors at the back. It should be noted that recent regulatory changes mean that, in future, only vehicles with side-doors will be allowed to be used for public transport, and the use of the current type of car rapide will gradually cease. There is no reliable data on the size of the minibus fleet, though it is popularly reckoned to be around 3,000. The average age of the vehicles is thought to be 18 years, and quality is poor.

Photograph 1. Car Rapide

According to DTT statistics, around 1,200 minibuses are newly registered each year, suggesting an average life of around 2 to 3 years.

There are thought to be around 1,300 owners of car rapides, with most owning between one and three vehicles. One owner, however, operates a fleet of 400 vehicles, while a second has 200.

The purchase of car rapides is normally financed from the operators' own funds, from interest free loans from family and friends, and from small loans from operator associations[7]

Conventional Big Buses

DDD, which took over the remnants of SOTRAC in 2001, initially had a fleet of 60 bigger buses, but at the time of the Consultants' first visit (November 2004) only about 40 were in working order. Service frequency was poor, with long intervals between buses. Breakdowns in service were frequent.

The situation has since changed dramatically. The Government of Sweden agreed to provide an 80 percent grant towards the cost of 60 new Volvo buses which will be assembled and bodied in Tunisia. The Government of Sweden will also provide technical assistance to support and monitor the maintenance of these vehicles. The Government of India has also provided 350 Tata vehicles on very favorable financial terms. The buses arrived in Dakar in the first quarter of 2005 and are now being operated by DDD. These two new agreements bring the total fleet to over 400 vehicles and have greatly increased big bus capacity and enabled a much more comprehensive service to be offered.

Taxis

There is a substantial fleet of taxis, around 10,000 vehicles, all imported second hand. The average age of the vehicles is said to be around 10 years, and renewals take place on a regular basis. Ownership is very dispersed. A small number of owners have 20 to 30 vehicles, but most only have a few units and many are owner-drivers.

Taxis work mainly on a ply for hire basis but also operate as shared taxis in peak periods.

[7] *Mutuelles d'Epargne et de Crédit* are cooperatives, which were set up by the operators. Each member pays a joining fee and a regular subscription. The *Mutuelle* provides social assistance (medical, legal fees, etc.) and can make small loans, for the purchase of vehicles or equipment. Interest rates are modest, at 7 to 10 percent p.a.; loans must normally be repaid within 12 months.

There are also illegal taxi services, known as "clandos". These are private cars which are used to provide a taxi service when not required by the owner for their own purposes. Often the driver takes the owner to work and then is encouraged to use the vehicle in a remunerative fashion until the owner needs it again.

Suburban Rail Service

The suburban rail service, the PTB, operates 19 trips per day in each direction and carries about 11,000-12,000 passengers in each direction per day. The railway is limited to one corridor but on this corridor it provides a useful service because it avoids the traffic congestion. The journey time of 45-60 minutes for the 30 km journey to Rufisque is slow, because of the poor quality of the track, but still compares very favorably with the estimate of up to 150 minutes for the journey by road in the peak period.

Modal Split

The most up-to-date information on modal split in Dakar comes from surveys carried out in 1998. These showed a daily total of 2.3 million motorized trips, of which over 83 percent were by public transport, as follows:

Mode	Percent
Cars Rapides	67.4
Bus (ex-SOTRAC)	4.9
Train	1.8
Taxis	8.9
Sub-total Public Transport	*83.0*
Private Cars	11.5
Two wheelers & others	5.5

The modal share of the car rapides is thought to have increased significantly in the last few years and now may be as much as 95 percent of the public transport. Conversely, the contribution of rail services appears to have fallen.

REGULATION OF THE SUPPLY OF PUBLIC TRANSPORT

Vehicle and Driver Licensing

Both vehicle and driver licensing are controlled by the Ministry of Transport, with a special category D license being required for drivers of passenger buses and minibuses. There are no quantitative restrictions on the issuing of either driver or vehicle licenses.

Route Allocation

In principle, routes can be franchised to private operators. The legislation allows the Government to grant a monopoly on a route, set the fares, impose service conditions and to compensate the operator for the difference between the official fares (the imposed tariff) and the costs of service (the equilibrium tariff). This was the approach taken when DDD took over the bus services run by the defunct state company SOTRAC. However, in practice, the granting of route monopolies has not protected DDD from competition from the cars rapides. Moreover, the equilibrium tariffs have not yet been calculated, although a substantial subsidy is being paid in recognition of the financial problems the company faces.

The route system for the cars rapides was set up in 1976, by a decree of the Governor of Cap-Vert, with new routes being created in the late 1970s and again in 1993. However, franchising has not yet been extended to these routes and the allocation of routes to operators appears, in effect, to be controlled by the operators' syndicate.

CETUD

In an attempt to impose a more orderly structure on the public transport system, a coordinating body for urban transport, the *Conseil exécutif des transports urbains* de Dakar (CETUD) was set up in 1997. CETUD is an autonomous body, responsible to the Ministry of Transport, run by representatives of the principal stakeholders in the public transport sector. Its operations are financed through the *Fonds de développement des transports urbains*. The state provides an annual sum of FCFA 400 million (US$ 800,000), while the local authorities and the transport operators are supposed to match the state's contribution, though it is not clear that they do so. CETUD also acts as the conduit for international aid to the urban transport sector.

In principle, CETUD can allocate routes and agree the terms of a compensation agreement with the operators, though compensation payments would require the agreement of the Ministry of Finance. It is currently developing a system of route franchises, which it is linking to the proposed program for minibus fleet renewal (see below).

In its efforts to improve service quality, CETUD has been offering training to both owners and drivers. CETUD also acts as the point of contact between the Government of Senegal (GoS) and the Official Development Assistance (ODA) agencies interested in urban transport (principally the World Bank, ADF, EC and the Nordic Fund).

Monitoring of Service Quality

There is a joint commission, including representatives of CETUD and the bus company, DDD, to monitor the company's compliance with the service agreement (convention). There is no attempt to monitor the cars rapides services at present.

Vehicle Inspections

All vehicles carrying fare paying passengers have to be inspected every 6 months. In practice, this seems to be a paper exercise, as the vehicles on the streets are clearly in poor condition. It also seems unlikely that the existing inspection centers would have the capacity to carry out all the necessary inspections if the regulations were to be rigorously enforced.

Vehicle Importation

In an attempt to improve the quality of the vehicle fleet, the importation of vehicles more than 5 years old has recently been prohibited.

Fares

The maximum fares for buses, minibuses and taxis are theoretically set by the Ministry of Finance, on the recommendation of the Dakar Urban Committee which is made up from representatives of the Ministries of Transport, of Commerce and of the Interior. The fares were last changed in September 2000.

The maximum authorized fares for the minibuses vary by route and distance. The authorised fares from Dakar centre range from FCFA 90 (US cents 18) for 12 km to the inner ring road, FCFA 120 (US cents 24) for the 25 km to the city boundary and FCFA 195 (US cents 39) to Rufisque (35 km). In practice, the system is sufficiently competitive for fares charged to be significantly lower than the official tariffs; the average fare for car rapides quoted in the consultants' survey was FCFA 91.

Fares for DDD are set at FCFA 150 (US cents 30) on all routes.

Rail fares are somewhat lower than cars rapides for similar distances, with rates of FCFA 100 (US cents 20) from the central station to Thiaroye (16 km) and FCFA 150 (US cents 30) to Rufisque.

WORKING METHODS AND CONDITIONS FOR THE CAR-RAPIDES

Most cars rapides are in service from 06.00 to about 22.00 hours. Most owners employ two drivers so that the working day is not normally excessively long. Typically a car rapide is driven into Dakar in the morning peak. The driver then chooses which route to operate for the rest of the morning depending upon his assessment of demand and traffic congestion. There is no convention on loading at terminals, with some drivers preferring to wait for a full load and others preferring to leave with space and pick up along the route. At peak periods, it may take 30 minutes to fill a bus at a terminal, but up to 150 minutes during the quiet times of day.

There are normally two assistants on each car rapide. The senior assistant takes the cash and works tow days on duty and two days off when his alternate would work in his place. A second 'student' assistant is also on board whose function is to announce the destinations and stops to the passengers. The student assistant would normally work every day.

The fare money is paid over to the driver who then pays the senior assistant FCFA 1500 (US dollars 3) a day and the student assistant FCFA 1000 a day. In addition, the assistants each receive an allowance of FCFA 1100 per day for their breakfast, lunch and dinner expenses.

Photograph 2. Cars Rapides Awaiting Passengers

The driver pays vehicle hire fees which vary from FCFA 15,000 ~ 18,000 (US dollars 30-36) per working day to the owner, depending on the capacity and condition of the vehicle. The owner arranges third party insurance and pays for all repairs. In mid-month when demand reduces, the daily hire rate is lower. The driver is responsible for fuel and lubricants. Drivers usually remain with the same owner for long periods. Drivers pay a departure charge of FCFA 100 (US cents 20) every time when leaving any municipal transport terminal, whether in central Dakar terminals or in purpose built terminals in the suburbs. The terminals are owned by the municipality but leased to private associations who maintain them and collect the charges from the drivers. The drivers' main concern was their poor net income. They also complained of the poor state of repair of many roads and of the chronic congestion in Dakar that created long delays in completing trips.

FINANCIAL VIABILITY OF BUSES AND CARS RAPIDES

DDD has faced severe operational problems, as the fleet it inherited from SOTRAC was in very poor condition. Maintenance costs have been high and revenue potential limited by the unreliability of the buses.

As noted above, the Government has recently acquired a substantial number of new buses, as part of Swedish and Indian Overseas Development Assistance, which have been transferred to DDD, bringing its total fleet to 409 vehicles. The terms of the financial arrangements between DDD and GoS are not publicly available, but the basis of the DDD concession is that it will continue to charge the same fares as the predecessor company, SOTRAC. A regular subsidy is currently being paid, although the amount is not known.

It has not been possible to obtain reliable information on the profitability of the cars rapides fleet. It is clear that it is not possible to earn sufficient to purchase new vehicles. However, the use of second hand vehicles does appear to be sustainable, as there is evidence of continuing fleet renewal.

PASSENGER SATISFACTION WITH THE PUBLIC TRANSPORT SERVICE PROVIDED (BASED ON FOCUS GROUPS AND PASSENGER SURVEYS CARRIED OUT BY THE CONSULTANTS)

General Concerns

The major concern of passengers was the extreme congestion in the peak periods. The passengers also complained that the route pattern was concentrated on radial journeys to the city centre. Inter-suburban journeys therefore frequently required the expense and inconvenience of changing.

Cars Rapides

Passengers complain that the car rapides are often dirty, badly driven, overloaded and that it is difficult to board and alight the vehicles. The drivers and assistants on car rapides are considered rude and the driving unsafe. The risk of theft or harassment was also considered greater on these vehicles. There are often problems in receiving change. There were also complaints of short-tripping (when drivers force passengers to disembark prematurely to start fresh trips) when traffic was congested and other passengers could be taken on other routes.

DDD

Passengers expressed a preference for the DDD service, mainly on the grounds that the fare was fixed and there was no need to haggle with the drivers. However, the frequency of service now offered by the DDD buses is very low because of the shortage of serviceable vehicles, perhaps once every 60 minutes on many routes, and most passengers would normally elect to take car-rapides unless they saw a big bus approaching.

Petit Train Bleu

The trains were said to be overloaded and suffer from a bad smell. The Dakar terminal was near the Port but not the central commercial districts. However, passengers valued the shorter journey times compared to road transport.

Journey Patterns and Costs

A total of 249 passenger interviews were held, of which 119 were held in central Dakar and 130 at selected locations in the suburbs. It should be noted that the use of DDD buses is considerably over-represented in the sample, and that this tends to overstate some of the average values for waiting and travel time.

Most journeys involved walking at both ends, though the average total time of 15 minutes is not excessive.

Table A. 1. Number of Interviews by Mode and Journey Stage

	Walk	Clando	Taxi	Car Rapide	Bus
Access	240	6	0	2	0
First Trip	2	43	5	97	102
Second Trip	0	5	0	28	8
Third Trip	0	1	0	8	12
Egress	249	0	0	0	0

Waiting times averaged 26 minutes, but this varied immensely between services. The average wait for a car rapide was five minutes, while the wait for a DDD service was 52 minutes. Travel times ranged from 25 minutes (clando) to 53 on DDD. On average, all passengers spent nearly 90 minutes, morning and evening, traveling to and from work.

Table A. 2. Journey Time by Mode (minutes)

	Clando	Taxi	Car Rapide	Bus
Waiting time first trip	10	14	5	52
Travel time first trip	25	31	31	53
Waiting time second trip	16	~	7	8
Travel time second trip	23	~	32	47

Fares paid varied considerably by mode, and the results confirmed the findings from informal discussions. The taxis and clandos are most expensive, with each leg costing around FCFA 230, while the cars rapides are the cheapest, averaging FCFA 90, rather lower than the maximum allowed fare. Total average one-way journey costs were estimated to be FCFA 167 (US cents 33), suggesting total annual costs (over 240 days) for the journey to and from work of FCFA 80,000 (US$ 160).

Table A. 3. Fares by Mode (FCFA)

	Clando	Taxi	Car Rapide	Bus
First Trip	229	233	89	156
Second Trip	28	~	91	149
Third Trip	231	~	~	~

PLANNED IMPROVEMENTS

The Government of Senegal with the support of donor agencies has prepared The *Programme d'Amélioration de Mobilité Urbaine*. This comprises five main components:

- Road infrastructure, safety and traffic flow
- Suburban railway development
- Credit for renewal of the urban minibus fleet

- Air quality improvement
- Institutional strengthening

In addition, direct assistance from Sweden and India will be used to improve the big bus fleet.

Road Infrastructure

The World Bank is cooperating with BAD and the EC to fund road rehabilitation. Some of this funding will assist in expanding road capacity in Dakar.

The Government is seriously committed to the program of urban transport improvements and has promised to make FCFA 74 billion (US$ 150 million) available from domestic sources (probably, but not certainly, the Road Fund). Many of the urban road improvements are part of the *grands projets du Chef de l'État*.

The Government is also considering ways of moving to a "second generation" road fund, financed by specific taxes on road users in particular fuel. This should, indirectly, assist the city of Dakar to maintain the road system in acceptable condition.

Suburban Railway Development

The PTB is to be privatized, and will have a service agreement with the Government. The track will continue to be owned by the Government.

Improvement plans involve fencing the right of way, laying a third track and providing road over bridges, to avoid crossings at grade. The PTB hopes to integrate its services with the bus system, through the appropriate use of feeder services, and it is hoped that the railway's market share can be increased to 25 percent.

CETUD Program

Renewal of Cars Rapides Fleet

There is a current, but longstanding, proposal to renew the minibus fleet, making use of a revolving credit to be provided by the World Bank. The credit, which is to be administered through CETUD, will be available to minibus operators to purchase new vehicles, to be provided by Tata from a new assembly plant in Senegal. The operators will have to combine into *Groupement d'intérêts économiques* (GIE), which will take responsibility for the loan and be given the franchise, by CETUD, to run a specified route, with specified service quality conditions. In principle, the operators could qualify for compensation payments, if the costs of running the services exceed the fares specified in the franchise. However, it is not yet certain that the MoF would agree to such payments.

The credit is for US$ 13 million, which would probably be enough to purchase around 350 vehicles, so fleet renewal would be gradual.

The proposal was first made in 1998, and progress has been slow, as there was considerable opposition from the operators, who were unhappy at being limited to a particular make of vehicle. It also proved difficult to persuade the operators to combine into GIE. However, 13 GIE have now been formed, each controlling 100 to 150 vehicles. The two major owners (Ndiaga Ndiaye and Mbaye Mane Mboup) have each formed their own GIE, while the other 11 consist of groups of owners of one to 10 vehicles.

The renewal program is now starting, with an agreement to assemble 105 Tata buses, which will be delivered to 6 of the GIE in late July 2005.

Route Allocation

Concession agreements for the car rapides routes to be operated by the vehicle renewal program, setting out fares, frequencies and operating procedures, are currently being finalized. There is, apparently, still some resistance among the other GIE to the use of Tata vehicles. However, it is hoped that it may still be possible to proceed on a voluntary basis.

When DDD was formed, it made an agreement with the state to take over the 17 routes previously operated by SOTRAC. In principle, DDD should have had exclusive rights to these routes, but its lack of capacity meant that, in practice, it shared the routes with car rapide operators. Under the program of reform, it is intended to re-establish a system where the GIE (whether car rapide operators or DDD) have exclusive rights to their routes. In principle, this should mean that there would be a new concession agreement between CETUD and DDD, to cover route allocation, subsidy arrangements and to ensure equity of treatment between DDD and the car rapide operators. However, it is not yet clear how or when this might take place.

Air Quality Improvement

The Nordic Fund is providing equipment and technical assistance to set up centers to test vehicle emissions.

OBSERVATIONS

Dakar is, in many respects, quite advanced in its efforts to improve and stabilize the public transport system. There are a number of issues arising from Dakar's experience that are relevant to the development of more general policy guidelines.

Road Infrastructure and Traffic Management

The major road infrastructure problem is the lack of capacity on the main radial routes, particularly at junctions, which is causing severe congestion at peak hours. This problem is being addressed through road widening and the building of flyovers. However, there is also a significant loss of capacity through poor traffic management. This could be significantly improved through an effective

program of enforcing existing regulations on parking, encroachment of informal markets into the roadway and traffic discipline at junctions.

Role of Formal (Big Bus) Transport Services

Both DDD and its predecessor SOTRAC faced severe financial and operating problems, essentially due to government controls on fares, compounded by the difficulties of maintaining an ageing vehicle fleet (which adds to costs and reduces revenue as the availability of the fleet falls). As a result of the failure of the formal system, the public is almost entirely dependent on the informal, cars rapides, service.

The provision of new vehicles offers a chance of a new start, but it will be most important to ensure that the long-term maintenance and replacement of the fleet is assured, either by setting fares at an appropriate level, or through formal, and enforceable, subsidy agreements.

Role of Informal Sector

The cars rapides provide an effective and dense service coverage at low cost to the passenger. Service quality, however, is poor and the system is viewed by the users as disorderly. Nevertheless, the system is financially self-sustaining due to the low acquisition costs of second-hand vehicles.

It is not yet clear whether the attempts to renew the cars rapides fleet through government intervention will work. The operators are the best judges of what kind of equipment they should use and their reluctance, to date, to accept the proposed financing scheme suggests that it may prove difficult for the operators of new vehicles to compete with the existing fleet.

System Planning and Development

CETUD's attempts to develop a more orderly public transport system have moved very slowly. It has no powers of compulsion and the attempt to link route re-allocation to the acquisition of new vehicles and the formation of GIE has met with considerable, ongoing, resistance. It might prove possible to engage those operators that have been reluctant to enter the GIE into the move towards a revised and more orderly route structure, by issuing route licenses (rather than franchises) to individual operators, provided that vehicle maintenance and service quality standards were accepted by the operators as a condition of the license.

DOUALA

ECONOMIC BACKGROUND

The currency in Cameroun is the FCFA (Franc Communauté Financière Africaine). US$ 1.00 is equivalent to approximately FCFA 500.

The population of Cameroun is 16.1 million and Gross National Income (GNI) is US$ 10.3 billion. Gross Domestic Product (GDP) is rather higher at US$ 12.4 billion. GNI per head is approximately US$ 640. On a PPP basis, GDP per head is US$ 1,800.

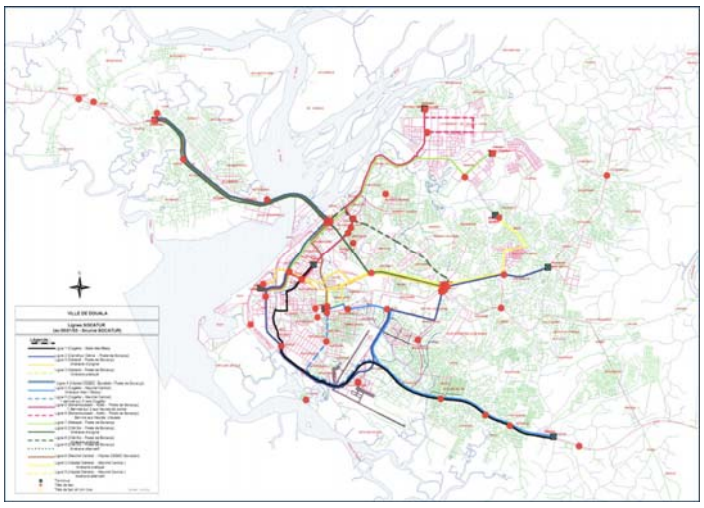
Government revenue accounts for nearly 20 percent of GDP and the budget shows a moderate surplus on current expenditure of 5.3 percent of GDP. However, when investment expenditure is taken into account, the budget deficit is 2.6 percent of GDP.

There is a long-standing balance of payments deficit, amounting to US$ 358 million in 2003, approximately 3 percent of GDP. Total overseas debt is US$ 9.2 billion, or 75 percent of GDP.

GEOGRAPHY

The last census was in 1987 and the population of Douala has grown rapidly since then. The current population of the city is not known with any certainty, but thought to be between 2.5 and 3.0 million, corresponding to approximately 17 percent of the total population of Cameroun.

Douala is a more compact city than Dakar with the bulk of the urban area confined to a distance of 15 km from the city centre. The main road system is based on radial routes, with poor orbital connections. The city grew up around the port area on the south side of the city, but there are substantial industrial and residential areas in Bonabéri to the north of the River Wouri (see Map 2).



Map 2. Douala Bus Routes

THE ROAD NETWORK

The road system has deteriorated very badly in recent years and is generally in poor condition. On-going World Bank and ADF rehabilitation programs are gradually restoring the main roads to a reasonable state, but many of the orbital routes and side roads are very badly potholed. This slows all forms of transport, and in particular, makes it difficult for the formal bus services to maintain schedules.

Douala suffers from poor traffic management. Parking is poorly controlled and informal markets impinge on space on both sidewalks and roads, impeding traffic flow. A serious program to enforce existing regulations on road use could make a significant improvement to traffic flow.

Photograph 3. Road Failure at Major Junction

The Institutional and Financial Responsibility for the Road Network

The national roads within the city are the responsibility of the national government, while the other roads are the responsibility of the city. Road maintenance is paid for by the Road Fund, which is financed from a tax on fuel.

Ten per cent of the Fund is made available for urban areas, of which the larger cities (Douala and Yaoundé) receive half. However, it appears that most of the large city funds are dedicated to Yaoundé. The balance has to be funded from local taxes, but the local tax base is very small and covers only 20 percent of the city's total expenditures. Most of the city's budget is provided by the central government, which also has financial constraints, and owes the city of Douala around FCFA 10 billion (US$ 20 million) in accumulated arrears.

The financial problems faced by the city are becoming worse and municipal resources have fallen from FCFA 25,000 per head in 1993 to FCFA 7,000 today. The strains on funds have been exacerbated by the expansion of the city, which has increased the mileage of roads to be maintained.

The World Bank has funded about 60 km of road improvements. A further 40 km will be improved in the next five years. These are mostly the main radial routes, improving access to the port, the airport and industrial areas.

The World Bank is also providing technical assistance to improve road maintenance, but is insisting that the city and central government provide adequate finance to ensure that the maintenance is carried out. The city recently faced severe problems in meeting the commitment for maintenance funds, which were only resolved by borrowing against the security of future central government payments to the city.

Photograph 4. Rush Hour in Douala Industrial Zone

The responsibilities for traffic management are spread among a number of agencies, with different groups being responsible for planning, execution and monitoring. In practice, however, it is the Police which organizes and implements any traffic management measures.

PUBLIC TRANSPORT IN DOUALA: HISTORICAL BACKGROUND

Until 1995, bus services in both Yaoundé and Douala were provided by a mixed economy company, SOTUC (Societé des Transports Urbains de Cameroun), which was owned partly by central gov-

ernment and partly by the municipalities. At that time, about 9,000 mainly 14-18 seater minibuses were also operating within the city of Douala although they were not licensed to do so.

Over the years, the financial position and operating capabilities of SOTUC had steadily worsened. Accumulated debts were in excess of FCFA 4 billion (US$ 8 million) and the company was carrying only 5 percent of the city's passenger traffic. A decision was therefore taken to close the company.

It was further decided to pursue a long-term policy of liberalization of urban transport, with the intention that operators should be allowed to compete on price, service, and route structure. It was hoped that competition between operators would obviate the need for excessive governmental regulation and that it would prove possible to run acceptable services without direct or indirect subsidies.

It was recognized, however, that there would need to be a transition phase, and the first contracts for the bus services in Douala provided for a five-year period of monopoly on fixed routes at fixed fares. It was hoped that, after this period of "infant industry" protection, the operating companies would be sufficiently well established to permit the introduction of a competitive regime.

The bidding process for the rights to operate 15 routes in Douala began in January 2000, and in January 2001 SOCATUR, a new private sector company owned by 35 Camerounian investors, began operating bus services. The contract between SOCATUR and the National Government specifies the routes which SOCATUR should operate. It also gives SOCATUR a monopoly on service in Douala for an initial period of five years, which was reinforced by the effective suppression of the illegal minibus services.

No subsidy is paid to SOCATUR and, unlike SOTUC, the company does not benefit from concessions on import duties or VAT. Fares were initially set at FCFA 125 (US cents 25) per journey.

SOCATUR purchased 109 second-hand vehicles to start operations, partly from SOTUC and partly from RATP.

PUBLIC TRANSPORT PROVISION IN DOUALA

SOCATUR

SOCATUR now operates only nine of the original 15 routes. The fleet has been reduced to 70 vehicles, the balance of 39 having been withdrawn, in part due to the damage inflicted by the poor roads. The reduction in coverage means that the formal bus system offers very sparse coverage of the city; in particular, low income areas are badly served.

SOCATUR has agreed with the Government to operate an emergency service over the bridge to Bonabéri. This was supposed to be an exclusive service supplied by SOCATUR between 0600 and 2100. A fleet of 30 second-hand French city buses were acquired to provide a two minutes frequency service. Revenue targets for the first month of operations were 80 percent met but have

since fallen to only 40 percent of targets, as the agreement has not been kept, with illegal taxi operators (clandos) and moto-taxis regularly plying across the bridge.

The failure of SOCATUR to provide an effective bus service, combined with the suppression of the minibus services, has meant that shared taxis now form the basis of the city's public transport system. There are no statistics of the number of taxis, but discussions with the taxi owners syndicates suggested that there are between nine and 10,000 in operation[8]. All the taxis are imported second-hand, usually from Europe, and are in generally poor condition.

Photograph 5. SOCATUR Bus in Heavy Traffic

The ownership of the taxi fleet is very dispersed, with over 3,000 taxi owners, of whom 1,000 are owner drivers. There are no formal taxi companies, and few individuals own more than 10 vehicles.

The taxis operate throughout the city, though some tend to follow set routes. However, the poor state of the minor roads makes them reluctant to operate in certain residential and industrial areas. There is visible excess capacity in the off-peak period, but at peak hours, there can be problems finding a taxi.

Moto-Taxis

There has been a spectacular growth in the use of moto-taxis (motorcycle taxis known in Douala as "bendskins") in recent years. Discussions with drivers and with the Ministry of Transport suggested

[8] The recent SSATP Paper Pauvreté et Mobilité Urbaine à Douala (Urban Mobility Study) gave an estimate of 6,000 to 7,000 taxis, based on the number of drivers licences issued.

that they now number more than 10,000[9]. The moto-taxis are much more maneuverable than 4-wheel vehicles and can travel on the poor roads much more easily and quickly. Most of the motorcycles are low capacity (less than 100 cc), but there is increasing use of more powerful vehicles.

The moto drivers are often young and inexperienced. Accidents, often fatal, are common, though statistics are not available. However, the large numbers of units, the ease of finding them and their speed means that they have become an important part of the city's transport system, with many personal journeys involving at least one moto leg.

Photograph 6. Moto-taxis in Operation

Minibus Services

After the initial suppression, there has been a gradual increase in the number of illegal minibus services operating in Douala. Discussions with the operators suggested that there are now around 2,000 minibuses in service, though the Urban Mobility Study suggests that there may only be 300 to 400 operating within the city. They tend to serve the residential areas with very poor roads, which SOCATUR does not cover. The import of minibuses is now banned and vehicles are kept going by a process of cannibalization.

[9] "Pauvreté et Mobilité Urbaine à Douala" (Urban Mobility Study) gave an estimate of 22,000 to 30,000, but the basis of the estimate is not clear.

Clandos

A small number of clandestine operators (clandos), provide illegal taxi services in the city. There are, obviously, no statistics, but the Urban Mobility Study suggested that there are around 200.

Modal Split

There have been no recent transport studies in Douala and the only estimate of modal split available is that of the Urban Mobility Study, based on household interviews. The Table below, extracted from the Study, shows clearly that, for most one-stage journeys, the main mode is walking (though it should be noted that most walking journeys are short-distance, personal business trips). For multi-stage journeys, the most important modes are moto-taxis and shared taxis, with other public transport modes, principally SOCATUR buses, accounting for less than 7 percent of all motorized journeys.

Table A. 4. Modal Split, by Principal Mode and Number of Journey Stages: Week Days (%)

No. of Stages	Walk	2 wheel	Car	Moto-taxi	Taxi	Taxi + Moto	Other Public	Total
1	85	2	3	5	5	0	0	*100*
2	0	0	0	31	56	5	7	*100*
3	0	1	0	8	47	23	21	*100*
4	0	0	0	0	38	52	11	*100*
Total	*70*	*2*	*2*	*9*	*13*	*2*	*2*	*100*
Motorized Only	~	**7**	**7**	**30**	**43**	**7**	**7**	***100***

Source: "Pauvreté et Mobilité Urbaine à Douala", Table 24.

REGULATION OF THE SUPPLY OF PUBLIC TRANSPORT

Vehicle and Driver Licensing

Both vehicle and driver licensing are controlled by the Ministry of Transport, with a special category D license being required for drivers of passenger buses and minibuses. Taxi drivers have to have a professional driving license (type B), and to pass an exam of "capacité" (route knowledge). There are no quantitative restrictions on the issuing of either driver or vehicle licenses.

All vehicles need to be registered. If the vehicle is to be used for carrying passengers, the owner also has to be registered as a transporter. There are no quantitative limits on the numbers of transporter licenses. Minibuses are permitted to operate on interurban routes, which allow them to carry passengers across the city boundary to satellite towns. Operation within the city is currently illegal (though this is about to change – see below) but, since 2002 about 200 special Category Licenses have been issued, although it is very difficult to acquire them. On one corridor the municipality has

recently contracted with a private organization that enables it to charge daily fees for drivers to use the corridor. The legality of the situation is not clear

Drivers of motorcycles with a capacity in excess of 100 cc need to have a driving license, though they are not required for smaller motorcycles. However, the law does not appear to recognize, or prohibit, the carriage of passengers for hire on motorcycles, and the activity is, in fact, unregulated.

Route Licensing

In principle, there is a *Comité d'organisation et suivi des transports urbains* (COSTU) in each municipality, consisting of representatives of each of the relevant ministries and the operators. COSTU has a general advisory function on matters concerning public transport, in particular the allocation of routes. However, decisions on the route structure, licensing and fares for buses are made by the Ministries of Transport and Finance in Yaoundé.

Monitoring of Service Quality

There are no formal procedures for monitoring the agreement between the Government and SOCATUR.

Vehicle Inspections

The vehicles are given a physical (safety) check every 3 months, by the Ministry of Transport. The taxi owners association said that the inspection regime was reasonably rigorous, but also took account of the realities of old vehicles and poor roads. There are no emissions checks.

Fares

The national government sets the fares for SOCATUR, which were initially fixed at FCFA 125 (US cents 25). SOCATUR then asked for an increase to FCFA 150, which was granted. However, the benefit of the increase was vitiated by the unexpected insistence of the Ministry of Finance that the company was liable to pay VAT of 18.5 percent.

A separate charge is levied on the bridge across the Wouri River.

There is a tariff for shared taxis set by the Ministry of Finance, but in fact fares are negotiable. A shared taxi stage will normally be around FCFA 150 (US cents 30) but fares for longer journeys covering several stages generally need to be negotiated.

Fares for moto-taxis are negotiable, depending on distance. Typically fares are in the range FCFA 100 to 200 (US cents 20 to 40).

Fares for minibuses are also negotiable, generally averaging FCFA 150.

WORKING METHODS AND CONDITIONS FOR TAXI, MOTO-TAXI AND MINIBUS DRIVERS (BASED ON DRIVER FOCUS GROUPS)

Taxis

Typically, an owner will have one or two taxis, which he will rent out on a time basis. The taxi driver pays a rental, and keeps the fares. Hire charges are negotiated between the owners and the drivers. A car in good condition will rent for FCFA 7,000 (US dollars 14) per 8 hour shift or FCFA 10,000 per day. Cars in worse condition will rent for 5 to 7,000 per day. The owners are responsible for all maintenance activity and the drivers for all fuel costs. Contract periods are variable and much depends on trust between owners and drivers. Regular drivers will be paid a salary of around FCFA 25,000 (US dollars 50) per month, in addition to the fares they collect.

Generally, there will be two drivers to a taxi, a head driver who holds the contract with the owner and a second driver, who, in effect works for the head driver. There are peaks in activity between 0600 and 1000, and between 1400 and 2000. The drivers can complete two trips per hour in peak (each with four passengers) and would average four passengers an hour during the off-peak. Daily kilometrage is normally 120 – 150 km.

There are 8 taxi syndicates. Owners and drivers have separate syndicates. There are no quantitative restrictions on membership. The syndicates issue a tariff card to members, which have to be displayed in the vehicle. The cards are only available from the syndicates, and the police will not allow a taxi to operate without one. The syndicates are said not to be very powerful. The Government controls the fees which the syndicates are allowed to charge their members.

Moto-taxis

Most moto drivers, in contrast to taxi and minibus drivers, generally own their own vehicles or buy them on hire purchase; a typical monthly payment would be FCFA 100,000 (US$ 200), with the purchase being completed within a year. A second-hand motorcycle can be bought for FCFA 400,000 (US$ 800).

Drivers begin work early around 0600 or 0700, and work through to 1900 to 2000, with a 4 to 5 hour break in the middle of the day. There are no recognized routes or formal pick-up points, though many drivers congregate at major junctions, when demand is slack.

Minibuses

Drivers hire minibuses from owners. The daily hire rate is about FCFA 15,000 to 20,000, (US dollars 30-40) dependant on the number of seats and the condition of the vehicles. The vehicles usually operate for around 15~16 hours each day, a second driver for the second shift. In addition they employ a conductor who works a double-shift and is paid daily around FCFA 2,000~2,500 plus a food allowance, typically FCFA 500. The head driver receives a salary from the owner usually about FCFA 35,000 ~ 40,000 per month, which he normally shares with the regular second driver.

Police fines were frequent and alleged to be a significant cost. The drivers claimed that they might have to pay up to 10 fines per day.

Drivers normally carry 30 passengers per hour during peak periods and 15 to 18 per hour at other periods. Average daily use is approximately 200 km.

Minibus drivers' main complaints were police harassment, the very poor condition of the roads used and that sometimes owners were unable to pay the agreed monthly salaries.

FINANCIAL VIABILITY OF PUBLIC TRANSPORT OPERATORS

SOCATUR

SOCATUR claim that their revenue from operations is just sufficient to cover routine operational expenses but is not sufficient to create reserves to replace the bus fleet. The costs of operation are aggravated by the high mechanical repair costs due to the poor road conditions.

SOCATUR is reluctant to petition for an increase in fares. Firstly, passengers are poor and may be unable to pay more. Secondly, the transport system is very competitive and passengers may simply transfer to other modes.

Taxis

The taxi owners were unanimous that use of new taxis is not viable, partly on cost grounds, but also because they feared the damage that a new vehicle would suffer on the roads on Douala. However, imported second hand vehicles can be made to pay, despite the high import duties charged.

They do not use bank finance, as they find the conditions too onerous. However, there appear to be no real problems in obtaining finance, either from their own resources or through "tontines" – informal credit from friends, neighbors, relations etc.

Moto-taxis

As noted above, the business is clearly financially viable, as most moto-taxi drivers find it possible to amass sufficient savings within a year to pay off the costs of their motorcycle.

Minibuses

The estimated daily revenue from minibuses is about 50,000-60,000 francs (US dollars 100-120) of which drivers have to pay 15,000-20,000 to the owners for hire of the vehicle and provide for fuel, police fines, the wage of the second driver and the conductor. The return to the owner is presumably more than sufficient to cover the cash-flow necessary to keep the vehicle on the road, at least until such time as major maintenance expenditure is required, but may not fully cover the cost of depreciation and interest payments. Unless the Government permits extra vehicles to be imported,

the returns to owners will probably increase as the stock of vehicles decreases, particularly if minibuses are given permission to operate more urban public transport services.

PASSENGER SATISFACTION WITH THE SERVICE PROVIDED (BASED ON FOCUS GROUPS AND PASSENGER SURVEYS CARRIED OUT BY THE CONSULTANTS)

General Concerns

One of the main complaints of passengers was the poor quality of road maintenance. The need for better traffic management and improved maintenance of traffic signals to reduce congestion was also stressed. They also expressed concern about the degree of police harassment of drivers, which they believed added to the costs of transport.

Another major concern was that passengers had to change vehicle too often to complete their journeys. They would prefer transport arranged so that more direct trips could be made. The need to change makes the process of getting to work more time consuming and expensive, as is borne out by the findings of the passenger surveys (see below).

Modal Choice

When given the choice passengers generally preferred the service offered by buses or taxis rather than the minibuses or the motorcycle taxis. There was a consensus among those interviewed that they would like SOCATUR to have more buses and operate more routes. Passengers valued the standard fares on large buses and disliked haggling over fares in taxis and minibuses.

Women, in particular, disliked minibuses because they were very overcrowded and uncomfortable and were difficult to board and alight, especially at peak periods. Motorcycle taxis were acknowledged to be fast and convenient but were considered to be unsafe.

The focus groups consisted of people who all used public transport for their daily journey to work, and their views did not reflect the importance of the walk mode for many of the people of Douala. However, this issue was covered in detail in the Urban Mobility Study, which generated the Table below, showing the modal split for work journeys for different income groups.

For the salaried groups, although most trips were by public transport, a substantial proportion (between 10 and 45 percent) had to walk to work. As might be expected, the poor were less likely to use public transport than the non-poor.

For the self-employed, and others, who tend to work closer to home, the percentage walking to work was significantly higher. For the non-poor, the split between walking and the use of public transport is more or less equal, while for the poor, only a minority uses public transport.

Table A. 5. Principal Mode for Journey to Work, by Poor and Non-Poor (%)

Employment	Active Poor			Active Non-Poor		
	Walk	Public Trans	Other	Walk	Public Trans	Other
Salary – formal	34	57	9	10	78	12
Salary – informal	45	55	0	32	58	10
Self-employed	66	34	0	43	55	2
Other Non-salaried	53	45	2	48	48	4
Unpaid	67	33	0	~	~	~

Source: "Pauvreté et Mobilité Urbaine à Douala", Table 6

Journey Patterns and Costs

A total of 229 passenger interviews were held, of which 74 were held in central Douala and 161 in selected locations in the residential areas.

Table A. 6. Number of Interviews by Mode and Journey Legs

	Walk	Clando	Taxi	Minibus	Bus	Moto
Access	224	2	0	0	0	0
First Trip	3	2	127	32	9	56
Second Trip	0	7	76	35	22	24
Third Trip	0	1	25	4	0	25
Fourth Trip	0	1	0	1	0	1
Egress	226	0	0	2	0	0

Most journeys involved walking at both ends, with a total time of 16 minutes, as in Dakar.

The waiting times for motos and clandos are relatively short, at 5 minutes each. The waiting time for a bus is, as might be expected given the problems SOCATUR is facing, significantly longer at 30 minutes. It is also noticeable that moto-taxi travel times are much shorter than other modes, presumably because they act as an access mode to other longer distance means of transport.

Table A. 7. Journey Time by Mode (minutes)

	Clando	Taxi	Minibus	Bus	Moto
Waiting time first trip	5	10	16	30	5
Travel time first trip	35	22	67	35	12
Waiting time second trip	11	15	15	11	10
Travel time second trip	16	25	47	16	10

The clando services were by far the most expensive, at over FCFA 450 (US cents 90) per leg. Bus services are the least expensive at FCFA 140 (for the first trip), with taxis, minibus and moto-taxis all charging around FCFA 170 (US cents 34) (for the first trip). Total average one-way journey costs were estimated to be FCFA 380 (US cents 76), suggesting an annual outlay (240 days) on the journey to and from work of FCFA 180,000 (US$ 360).

Table A. 8. Fares by Mode (FCFA)

	Clando	Taxi	Minibus	Bus	Moto
First Trip	450	179	176	140	170
Second Trip	489	184	317	111	140
Third Trip	~	213	375	~	112

Finally, the Urban Mobility Study found that transport costs, mainly for journeys to work, consumed 23 percent of the income of the poor, and 16 percent of the income of the non-poor. For the poorest of the poor, transport costs could account for over 30 percent of their income.

CURRENT DEVELOPMENTS

An urban transport study is proposed, to look at short-term traffic management solutions, and long-term network improvements. It may also consider the possibility of setting up an urban transport authority.

SOCATUR's concession expires in 2005. It is planned to replace their current city wide franchise with a system in which individual routes would be franchised to companies, rather than issuing a route license to a large number of individual operators. The details of the proposed franchising process have not yet been published.

It is also proposed to relax the regulations so that minibuses can operate more freely. It is expected that area licenses would be granted in the urban periphery and that minibuses with 15 to 30 seats would be allowed to operate on the fixed routes in the centre.

OBSERVATIONS

It is difficult to draw hard and fast conclusions on the basis of the fieldwork carried out for this study. However, there are a number of areas where the experience of Douala may help in developing more general policy guidelines.

Road Infrastructure and Traffic Management

The road system of Douala is in a serious state of disrepair and traffic management is poor. Travel speeds on all modes are unnecessarily low and the poor quality of many roads is causing serious damage to the vehicle fleet.

Restoring the road infrastructure to a reasonable condition will be a long and very costly process and ensuring subsequent maintenance will require serious financial commitments from both the city and national governments. Public transport operators will have to deal with the problems of poor road conditions for many years to come.

Improved traffic management, through the effective enforcement of existing laws and regulations, notably control of parking and street vending and ensuring effective discipline at junctions, could make a major and immediate contribution to reducing congestion. This is, at present, essentially a job for the Police.

Formal (Big Bus) Transport Services

The attempt to reinvigorate the formal public transport system by contracting SOCATUR to operate the bus services has not been very successful. The company was given a monopoly on the routes it operates, which was reinforced by the suppression of competition from minibuses. Despite this, SOCATUR has not been able to operate a full service and is not generating enough money to replace its fleet.

The problems are not really of SOCATUR's making, but arise from the operating environment. In particular:

- The controlled fares are too low, essentially for social and political reasons, and do not permit the operator to earn a reasonable return; and
- The poor state of the roads and the high degree of congestion has reduced speeds and thus both bus productivity and revenue is lower than planned.

Informal (Taxi and Moto-taxi) Services

The shared taxi system, together with the moto-taxis, is viewed by many passengers as unsatisfactory, being uncomfortable, disorderly and possibly unsafe. However, the services taken together are remarkably effective, in the sense that they provide services throughout the city and passengers can find transport within a very short time. The ubiquity of the service is a tribute to the inherent flexibility and enterprise of the large numbers of individual owners and operators in this highly competitive market.

However, it is also clear that mass transit using small vehicles is inherently inefficient and fares are necessarily higher than they would be with a properly functioning bus or minibus system.

Minibuses

Minibuses play an important role in the public transport systems of most African cities and the possibility of their legal reintroduction to Douala is to be welcomed. Operating costs per passenger will be considerably lower than for taxis and moto-taxis, and they can potentially offer high frequency services on routes where passenger volumes would not justify the use of big buses.

As with the taxi and moto services, the involvement of large numbers of individuals in ownership and operation provides strong incentives to keep overheads low and operations efficient. However, it can also lead to poor maintenance and neglect of passenger safety and comfort. Accordingly, it would be sensible to ensure that the legalization of the minibus services is accompanied by the establishment (and enforcement) of reasonable standards for vehicle maintenance.

Route Licensing and Franchising

The current proposals to legalize minibus operations and to let new contracts for the operation of formal bus routes all appear to involve franchising of routes to companies, which would then have a monopoly on the route, in return for charging a fixed fare. This approach will make it difficult for individual minibus operators to apply for route franchises, unless they can form some kind of joint venture with other operators (proven so difficult in Dakar). There may, in any event, be a shortage of companies with sufficient capacity willing to bid.

To avoid these problems, consideration could be given, as a first step, to issuing route licenses to any qualified operator, and allowing multiple independent operators on each route. Competition between operators, in conjunction with appropriate regulation on vehicle standards, would ensure service frequency and quality, and would help keep fares down. It would also permit the newly legalized minibus operators to establish themselves, and possibly form combines for a future franchising regime.

Fare Levels

Normally, the improvement of service standards will require fares to increase. However, given the inherent inefficiencies of a taxi and motorcycle based transport system and the multiple stages for most passenger journeys currently undertaken in Douala, it is possible that, with the introduction of legalized minibus services, service quality can improve with no increase in total travel costs.

KAMPALA

ECONOMIC BACKGROUND

The currency in Kampala is the Uganda Shilling (USh). US$1.00 is equivalent to 1940 Uganda Shillings approximately.

The population of Uganda was estimated at 25.4 million in 2003. It has grown rapidly from 20.75 million in 1997 an annual average increase of 4.2 percent. In 2004 the population was estimated to have increased by 2.97 percent. The Uganda Gross Domestic Product in 2003 was about US dollars 6 billion giving a GDP per capital of 236 US dollars per annum. However on a purchasing power parity basis GDP per capita is estimated at $1,400.

Domestic Government Revenue in the financial year 2002/03 is estimated to be about 12.1 percent of GDP. Current Expenditure was estimated at about 13.4 percent of GDP and Development Expenditure at 9.6 percent of GDP. Thus combined Current and Development Expenditure exceeded domestic Government Revenue by 10.9 percent. Grants to the Government for Budget and Project Support were equal to 6.9 percent of GDP leaving a balance of 4 percent to be financed from other sources.

There was a deficit on trade and services of US$ 1,034 million in 2002/03. This was offset by current transfers of US$ 745 million and a surplus on the capital account of US $342 million.

GEOGRAPHY

The present population of Kampala and the surrounding urban areas is currently about 2.0 million, about eight percent of the total population of Uganda. The population of Kampala City increased by 56 percent between the two censuses of 1991 and 2002, an average annual growth of 4.5 percent per annum. The growth in the adjacent Wakiso district in this period was even higher at 5.5 percent per annum. This trend is expected to continue both because of the high natural population growth and by migration from other parts of the country.

Kampala is situated close to the north shore of Lake Victoria (See Map 3). The city is built on hills surrounding the city centre. The density of housing and population is relatively low. Population is concentrated around the historic radial routes out of the City Centre.

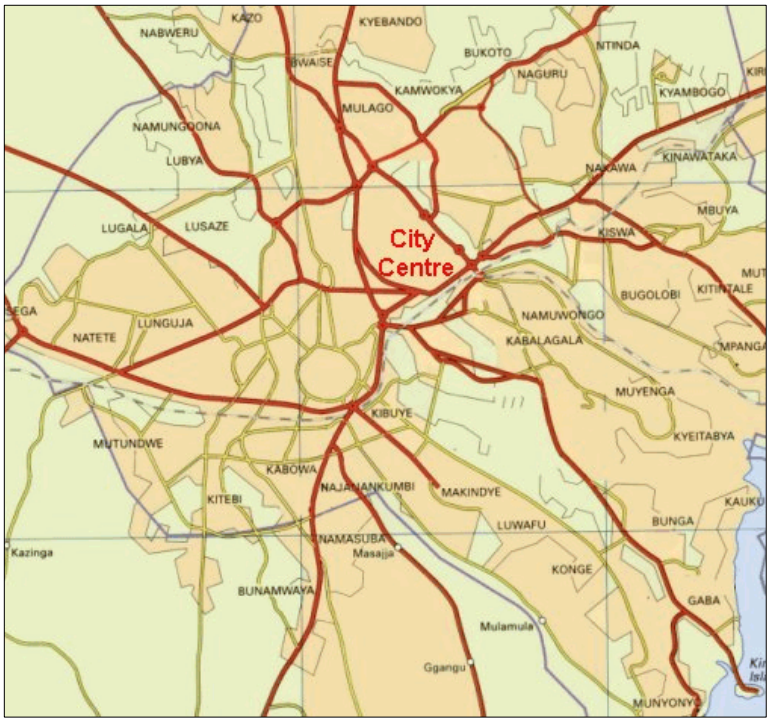
THE ROAD TRANSPORT SYSTEM

Available data on the transport system in Kampala

The main source of up-to-date data on the traffic system in Kampala is the Kampala Urban Traffic Improvement Plan (KUTIP) prepared by Rites Ltd in June 2003. This includes the results of a number of surveys carried out in 2001.

Road Network

The road system in Kampala is somewhat limited. Some of the main radial routes are wide highways but others are narrow and therefore heavily congested. A survey of 116 km of the principal road system carried out for the KUTIP showed that less than 30 percent of the network had four or more lanes. There is also a marked absence of footpaths; over 60 percent of the surveyed network had no footpath on either side. Where footpaths are provided they are often taken over for commercial purposes forcing pedestrians back into the carriageway. Many residential areas are situated in hilly districts not well served by road.



Map 3. Kampala

The quality of road maintenance is variable and the absence of effective traffic management makes congestion worse. The congestion within the main minibus terminals often spreads out onto the adjacent City Centre road network. A survey of 54.7 km of roads in Kampala carried out for KUTIP showed that journey speeds were relatively high in the outskirts but quite low in the central area.

Over half the surveyed road network had speeds of less than 20 km per hour.

The estimated distribution of journey speeds was as follows:

Table A. 9. Journey Speeds in Kampala

Journey Speed (km/hr)	Road Length (km)	Percentage	Cumulative Percentage
0-10	6.6	12.1	12.1
10-20	21.1	38.5	50.6
20-30	19.19	36.4	87.0
30+	7.1	13.0	100.0
Total	**54.7**	**100.0**	

Source: RITES October 2001

Road Accidents

The Uganda Police Traffic Department records 4,280 road accidents in Kampala in 11 months of 2000 of which 150 were fatal and 1,166 classified as serious.

The Institutional and Financial Responsibility for the Road Network

The responsibility for the road network in Kampala is shared between the Ministry of Works, Housing and Communications which has responsibility for the national roads which make up many of the main radial routes into the City, the Kampala City Council and the adjacent Districts of Wakiso and Mukono which are responsible for all other roads in the metropolitan area. The Kampala City Council is however short of financial resources and has to rely on Central Government support for any major expenditure.

The Road Agency Formation Unit (RAFU) has been set up as an agency of the Ministry of Works, Housing and Communication. It has an important advisory role. There are plans that RAFU should have its own hypothecated funds which could be allocated for road maintenance throughout Uganda. The Ministry of Finance has however been against allocating Government revenues specifically to one dedicated purpose believing it is important to maintain the flexibility to allocate funds where they are most needed.

PUBLIC TRANSPORT IN KAMPALA, THE HISTORICAL BACKGROUND

The privately owned Uganda Transport Company (UTC) held the exclusive franchise for bus services in Kampala until its nationalization in 1972. At that time its only competition came from shared taxis based on saloon or estate cars. Following its nationalization, and the period of national chaos prior to the establishment of the present Government in 1986, UTC both contracted and focused more closely on its long-distance services. As such, the market for urban transport services in Kampala became open to private sector operators, mostly using small minibuses though a few Kenyan sourced midi-buses were also deployed.

Early market entrants earned high returns that then attracted additional investment until the market saturated. At that stage, the Uganda Taxi Operators and Drivers Association (UTODA) emerged to bring order to the market through self-regulation and control of the terminals. UTODA benefits from strong political patronage, with some senior officials now having become major fleet owners. Individual vehicle owners have been marginalized and the Taxi Owners Association is no longer active in Kampala.

During the period of transport supply shortage, Uganda Railways Corporation ran a very limited suburban passenger service on the main line from Jinja. It is unlikely that this was ever profitable, and has been discontinued for some years.

In 1994 a commercial vehicle distributor established City Link as a private-sector large bus operation. This had some 40 vehicles in service, with finance committed for a further 80 buses. However UTODA was able to organize effective competition to this initiative. City Link did not help itself by mimicking the minibus services on the fill-and-run principle rather than operating scheduled services, and it shortly collapsed. Feedback from focus groups indicates that the City Link services were popular, but were too thinly spread over the network to provide a reliable service.

PUBLIC TRANSPORT PROVISION IN KAMPALA

Minibus Services

The main supply of public transport in Kampala is now by minibuses, which are known locally as *taxis*. Kampala City Council estimated that in 2003 there were nearly 7,000 minibuses based in the Greater Kampala Metropolitan Area, of these approximately 5,000 were used for local services with the remainder used for inter-urban services throughout the country. The majority of the minibuses have 14 seats with a few larger vehicles.

In addition to the minibuses there is the usual supply of conventional taxis. There are also a considerable number of motorcycle taxis and a few bicycle taxis. The motorcycle taxis operate throughout the city but are particularly used to provide access to residential areas which have poor or no road access.

Modal Split

It was estimated in 1997 that 26 percent of the vehicle flow was public transport, with 55 percent private transport. It was estimated that the share of passengers using public transport was 70 percent with 30 percent using private cars, heavy vehicles, motorcycles or bicycles. No figures were given for the number of walking trips, although observation suggests that considerable numbers make long journeys to work on foot.

The KUTIP survey recorded very high flows of minibuses on some roads. Some examples are given below.

Table A. 10. Minibus Traffic Volumes by Location

Location	From	To	Peak Hour	% of total flow	24 hours	% of total flow
Kampala Road (Uganda House)	City Centre	Jinja	518	51	5,982	34
	Jinja	City Centre	530	38	6,826	32
	Total		**1048**	**43**	**12,808**	**33**
Nsambya Road (Shell)	Nsambya	Clock Tower	449	23	3,053	24
	Clock Tower	Nsambya	269	37	**2,552**	28
	Total		**718**	**27**	**5,605**	**26**

KUTIP have estimated that on the Kampala Road the share of minibuses in the total traffic counted was between 38 percent and 41 percent, the share of cars varied between 33 percent and 35 percent, and motorcycles between 10 percent and 12 percent. Further out on the Ntinda Road the share of motorcycles, many of which would be motorcycle taxis, increased to between 21 percent and 41 percent.

REGULATION OF THE SUPPLY OF PUBLIC TRANSPORT

Vehicle and Driver Licensing

New public service vehicles have to be licensed by the Transport Licensing Board, an agency of the Ministry of Works. The minibuses based in Kampala are either supposed to be licensed for urban or inter-urban routes. There are however no limits imposed on the number of vehicles which can operate on either route and in practice vehicles seem to switch between urban and interurban services, particularly at weekends and holidays.

The Government of Uganda published a Statutory Instrument in June 2004 requiring seat belts to be fitted to all minibuses and used by all passengers.

A special group D license is required to drive any public service vehicle including minibuses. Drivers must be over 25 years old and must receive instruction from an instructor licensed by the Director of Transport and Communications to provide instruction in driving this type of vehicle.

Route Allocation

The Transport Licensing Board has the duty to "furnish to the Minister once in every year a list of routes and packages of routes covering the whole of Uganda, selected and assembled so as to provide transport services to meet reasonable passenger demand and which will be reasonably efficient and economic either as listed singly or otherwise for both large and small prospective operators."

The Licensing Board is then expected to take into account its findings, to grant operators the necessary omnibus license to:

a) run a service for the carriage of passengers over such fixed route or routes as the Board may direct;

b) run a scheduled service over such routes at such frequency and regularity as the Board may direct.; and

c) to incorporate such intermediate stops as the Board may direct.

The Transport Licensing Board therefore has considerable power to determine the routes operated by different operators and the quality of service provided. In practice it devotes more effort to monitoring and regulating the inter-urban routes particularly the large bus routes than the minibus routes in Kampala. Licenses to operate minibuses in Kampala do not specify particular routes or times of operation. The license does specify whether the minibus should operate town or more distant country routes. However in practice minibus operators appear to switch between town and country routes depending upon the demand. The Licensing Board does not try to restrict the number of minibuses operating in Kampala.

Monitoring of Service Quality

No Government organization is currently concerned with monitoring service quality, although UTODA (see below) will have a good appreciation of the level of service relative to demand on different routes

The Role of UTODA

The Uganda Taxi Operators and Drivers Association (UTODA) plays a very important role in the de facto regulation of the minibus industry in Kampala. All operators and drivers are expected to be members of this association which was set up to further their interests. As a result UTODA has very considerable power over the industry.

In 1986 UTODA won a contract from the Kampala City Council to manage the two main minibus parks in Kampala. They have retained this contract ever since 1986 and today they have parks and offices in 27 districts. UTODA have to pay Kampala City Council USh 300 million (US$ 155,000) every month, but are reputed to be USh 2 billion (US$ 1 million) in arrears.

UTODA charge the minibus drivers a fixed daily fee on their first entry into the main taxi terminals. They also charge an exit fee on each departure that varies depending upon the length of route and hence the fare paid. Drivers also have to pay a fee to UTODA if they pick up passengers at the intermediate bus stops that are supervised by UTODA staff. Finally, members have to pay a monthly fee of USh 20,000 (US$ 10.30). One operator estimated that these charges cost him USh 17,500 per day in total.

It was reported in the newspapers in March 2004 that over 800 members of UTODA had requested the Commercial Court to refund over 2 billion Uganda Shillings which they stated had been collected from them illegally. UTODA officials are reputed to have invested some of its surplus cash flow in the purchase of real estate in Kampala.

Vehicle Inspections

All public service vehicles have to be inspected by the Transport Licensing Board inspectors annually before issue of the appropriate vehicle license.

Fares

There is no State control of fares, but UTODA defines standard fares for each route. Specimen fares quoted were USh 300-500 (US cents 15-25) to Nateete (6 km), USh 700 to Mukono (22 km), USh 1,200-1,300 to Entebbe (40 km). However the actual fares paid by passengers are determined by the taxibus operators depending upon the state of the market. Fares increase in the peak periods and at times of high demand, such as just before Christmas when supply also goes down, some urban taxibus drivers find it more profitable to switch to interurban routes. At quiet periods, though, passengers can negotiate fares down by bargaining before boarding.

Photograph 7. Kampala Central Taxi Terminal

The motorcycle taxis charge USh 500-1000 shillings (US cents 25-50) per journey. Generally these will be relatively short journeys either in the City Centre or connecting areas not well served by taxibuses with the taxibus network.

WORKING METHODS AND CONDITIONS FOR MINIBUS DRIVERS

Drivers hire minibuses from owners for a daily charge. The drivers are responsible for providing fuel and paying the charges for using the UTODA terminals. The drivers tend to work long hours although in the off peak period much time is spent waiting to fill up at the minibus park. On an inspection visit to the main minibus terminal in Kampala the Consultants were told that there might be 20 minibuses waiting to load for one route and that the expected queuing time at the terminal could be more than 90 minutes. UTODA have estimated that the minibuses on local routes within the Kampala Metropolitan Area make on average about five round trips per day and may carry about 150 passengers per day.

FINANCIAL VIABILITY OF PUBLIC TRANSPORT OPERATORS

It is generally agreed that the owners of minibuses at present do not earn sufficient to make it worthwhile investing in new vehicles. The Consultants interviewed one owner whose family has been involved in the provision of minibuses for over 10 years. He confirmed that whilst it had at one time been a very profitable activity this was no longer the case. A few years ago he owned 10 vehicles but this had now reduced to three as he gradually withdrew from the business.

PASSENGER SATISFACTION WITH THE SERVICE PROVIDED

Minibuses

Public transport passengers in Kampala have very little choice. Unless they are prepared to use the motorcycle or normal taxis they have to use the minibus service.

Photograph 8. Traffic Congestion in Kampala

The Consultants found that there was considerable dissatisfaction with the service offered. One particular problem is that the vehicles tend to wait at the terminal until they are fully loaded. This means that passengers who want to board at other stops a little distance from the terminal often cannot do so because the minibuses are still full, though extra passengers may be taken on beyond the licensed capacity.

The passengers also intensely disliked the uncertainty as to the level of fare that they would have to pay. They did not know what this would be until they boarded the vehicle. This meant that poorer passengers making the journey home after work did not know whether they could pay or whether they would have to walk.

In general the passengers thought that the service offered by the minibuses were poor. Female passengers were also concerned about the likelihood of harassment and complained that the conductors tended to encourage rather than try to suppress such behavior when it was observed. There was however some sympathy for the drivers whom passengers realized did not find it easy to make a satisfactory living. There was also a feeling that UTODA extracted too much revenue from drivers and that this inevitably increased the fares which passengers had to pay.

Large Buses

Despite the fact that Kampala has not been served by larger buses for 10 years (and then only briefly) there was a strong consensus in favor of reintroducing big buses. This was partly because of dissatisfaction with the level of service offered by the minibuses and partly because of the feeling that traffic congestion might be reduced with fewer bigger buses. It might also have reflected the fact that the possibility of a private company starting to operate bigger buses has been aired in the newspapers.

Affordability

The affordability of public transport is clearly a concern to many passengers and it is believed that large numbers walk long distances to work because they cannot afford to pay the minibus fares.

NON-MOTORISED TRANSPORT

The facilities provided for those using non-motorized transport are generally very poor, particularly outside the historic city centre where many important routes do not have adequate sidewalks. There appears to be little obvious concern for trying to improve the safety of those needing to walk alongside or cross busy roads. The same applies to provision of facilities for cyclists, particularly in respect of secure parking. Statistics from the Uganda Police Traffic Department show that there were 1,294 recorded accidents between pedestrians and vehicles. The majority (660) was with private cars but 314 were with minibuses and 169 with motorcycles, many of which would have been motorcycle taxis,

CURRENT DEVELOPMENTS

Road Infrastructure

In June 2003 the Government published the Kampala Urban Traffic Improvement Plan. This was prepared by foreign consultants and includes detailed and relatively inexpensive plans to improve the management of traffic in the Central Area of Kampala.

The Government, with the help of foreign consultants, has also nearly completed a National Transport Plan, which includes a Master Plan for the Greater Kampala Metropolitan Area. This contains longer term and relatively expensive plans to improve the working of the whole urban fabric, including better coordination between transport and land use planning, developing improved public transport and considerable expenditure on new and improved roads.

Operation of Bigger Buses

In 2003 another private investor, Easy Bus, emerged with plans for 200 buses for the core urban routes in Kampala linking minibus interchange stations on each of the seven main radial routes into

the city. Despite support from the Uganda Investment Authority, both bureaucratic delays in local government and the lobbying power of UTODA have so far thwarted this initiative.

The Government has not as yet agreed to support any specific project to bring back big buses although it appears from our conversation with various Government ministries that in principal they would welcome such schemes. UTODA has recently asked private individuals to purchase 28-seat midi-buses to help ease congestion, having earlier promised to make such investments itself to enable hire purchase by operators.

UTODA have also indicated that they have plans to build peripheral minibus terminals in the suburbs to try and restrict the congestion from the increasing number of minibuses entering the city centre. They have stated that these would be modern terminals with shopping arcades, public car parks and petrol stations and that they would probably change the meaning of the word downtown, since less people would find it necessary to come into the city at all.

OBSERVATIONS

Kampala is the smallest of the four cities we visited but is growing very rapidly. It is the only city which was not served by large buses. There are a number of areas where the experience of Kampala may help in developing more general policy guidelines

Road Infrastructure and Traffic Management

Kampala has grown very rapidly from a relatively small city, the population in 1980 was under 500,000, to a much larger city. As a result it did not inherit a large city road system. Although some roads have been improved many important routes are still narrow two or three lane roads. These roads are particularly congested and ought to be improved as soon as capital funds become available. In the mean time it is important that the use of these roads is optimized. This requires sensible traffic management at the key junctions and careful supervision to make sure that vehicles, particularly minibuses, do not stop at inappropriate points. The problem of controlling commercial activity immediately adjacent to these roads and of preventing the commercial activity encroaching too far onto any footpaths also needs to be tackled.

New development is continuing to spread outwards from Kampala into the surrounding areas. Although funds for investment are limited it is important that a road system of sufficient capacity is provided to serve these areas. This will require at the very least that the road system required to serve these areas is planned and that the land for such routes is reserved. It will be much more expensive to provide roads if development is allowed to proceed in an ad-hoc fashion.

The Case for Reintroducing Formal (Big Bus) Transport Services

The surveys carried out for the KUTIP have shown that there are very high minibus flows. On one road flows in one direction of over 500 vehicles per hour were recorded. Minibuses made up 40

percent of the total vehicles using the road. There would be significant benefits in terms of reduced traffic congestion if a substantial proportion of these minibuses could be replaced by larger buses. Big buses also ought to be able to provide a more economical service whilst still maintaining acceptable frequencies on the main routes served by large numbers of minibuses.

The Consultants' discussions showed that there was strong public support for reintroducing big buses although a regular big bus service has not operated for many years. It is known that a number of promoters have considered reintroducing big buses. It is suspected that one of the main reasons why they have not done so is concern that they would be subject to intense and possibly unfair competition from minibus operators supported by UTODA. The reintroduction of big buses is therefore likely to require some form of Government guarantee that they will be allowed to operate on their selected routes without unreasonable harassment.

Oversupply of Minibuses

The analysis has shown that minibus operation is not currently profitable. This may partly be because UTODA is extracting too much from drivers in return for the services it provides. It also may reflect an oversupply of such vehicles. It has been reported that even on very short routes minibuses only make about 5 round trips per day and may travel considerably less than 100 kilometers per day. Whilst the whole minibus fleet may be required at the heart of the peak, it is very much underoccupied for most of the rest of the working day. It would almost certainly be more economical and allow a cheaper service to be provided if the supply of minibuses were reduced, even if this meant that a lower percentage of the peak demand could be met. In this situation the peak could be expected to spread so that the average number of passengers carried by the reduced minibus fleet would increase.

The Role of UTODA

UTODA, which started as an association to protect owners and drivers interests, has become extremely powerful. It has de-facto assumed the responsibility for planning and supervising the operation of all public transport services in Kampala. This may not be in the interest of the public, or many of those working or investing in the provision of public transport.

The Government of Uganda has preferred not to closely regulate the minibus system in Uganda presumably because it believed that the best solution was to allow a competitive market to develop. There is however always a strong risk that if the Government does not regulate the public transport market others may try to do so. It is therefore vital to make sure that the effect of any "unofficial" regulation is predominantly beneficial rather than harmful to the interests of those using public transport. This may require close Government scrutiny to make sure that Operators Associations do not unreasonably exploit any monopoly powers they may have obtained.

Fixed or Flexible Fares

Public transport passengers in Kampala indicated that they particularly disliked not knowing in advance the fare that they would have to pay. They also resented the fact that fares increased at times of the year such as Christmas when demand was high and supply reduced as vehicles switched from intra-city to intercity routes. In some ways this might be considered to be the natural effect of competition working to balance supply and demand in a free market. Many economists have argued that such pricing flexibility is overall beneficial to all transport users and should be encouraged. The strength of public feeling against rapid and uncertain changes in fares should not however be ignored.

NAIROBI

ECONOMIC BACKGROUND

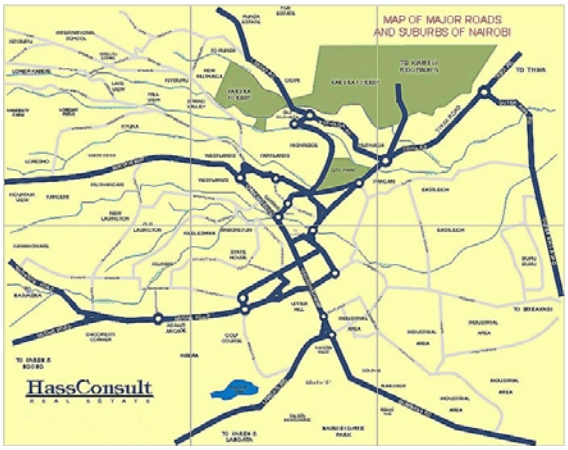
The currency is the Kenya Shilling (KSh). US$1.00 is equivalent to approximately 76 KSh.

The population of Kenya is estimated at 32 million. The population growth rate which had been one of the highest in the world has now fallen to 1.14 percent per annum.

The Kenya Gross Domestic Product in 2002 was about US dollars 12.3 billion giving a GDP per capital of 385 US dollars per annum. However on a purchasing power parity basis GDP per capita is estimated at $1,000.

Government Revenue and Grants in 2002 represented 12.1 percent of GDP. Current Expenditure was estimated at 21.0 percent of GDP and Government Expenditure at 23 percent of GDP. There was a surplus of US$ 75 million on the balance of payments current account.

GEOGRAPHY



Map 4. Nairobi and Environs

The current population of Nairobi and the contiguous urban areas outside the city boundary is estimated at about 3 million. Although by far the largest city in Kenya, the population of Nairobi and its immediate environs is only about 10 percent of the total Kenyan population. The population can be expected to continue to grow rapidly over the next ten years, both because of the continued expected population growth and because of migration. The City does not have any major rivers or high mountain ranges, so that there are few geographical impediments to the expansion of the city, although the terrain in the north-west is distinctly hilly.

THE TRANSPORT SYSTEM

Available Data on the Transport System in Nairobi

The Kenya Institute for Public Policy Research and Analysis (KIPRA) has recently completed an Urban Public Transport Study for Nairobi. The study included a household travel survey in which

7,000 users of urban transport from 2,105 randomly chosen households were interviewed. This was supplemented by traffic counts and delays studies at major intersections and roadside origin and destination studies at eight locations. The survey included interviews with 455 randomly selected drivers and conductors of public transport vehicles, plus waybill surveys in which research assistants rode in public transport vehicles to record passenger numbers, journey mileage and time. This will provide an extremely valuable source of data. At the time of writing this report the final study report had not been completed although it is expected imminently. A brief Executive Summary which described the study methodology and a limited number of key results was available.

The Institute of Policy Analysis and Research published in 2004 three interlinked papers on the minibus industry.[10] These three papers include the results of detailed interviews with 43 minibus owners, drivers and conductors, 30 of which operated urban services in Nairobi.

JICA are currently carrying out an urban transport study for Nairobi.

Road Network

The road network is based around a series of radial routes out from the original Central Business District. Although not designated as such there is a mainly dual lane inner ring road around the outside of the Central Business District so that it is possible for longer distance journeys using the main radials to avoid the heart of the Central Business District. This ring road does however suffer from severe congestion at key intersections. There is a reasonable network of other non-radial routes although there is no completed intermediate ring road, and the long-mooted bypasses have never been started. The network of non-radial routes is more limited to the north-west where it is more hilly. In total Nairobi City Council is estimated to have a network of 1,643 km of paved and 211 km of unpaved road.

[10] The Institutional and Organizational Structure of Public Road Transport in Kenya: Patrick O Asingo, IPAR Discussion Paper No 050/2004.
The Role of the Matatu Industry in Kenya; by Ndungu P. Kimani, Thomas N. Kibua and Muyundo Masinde, IPAR Discussion Paper No 053/2004.
Matatu Industry in Kenya; Preston O. Chitere, IPAR Discussion Paper No 055/2004.

The quality of road maintenance is variable with problems of flooding at times of heavy rain. Traffic management and signal control at key junctions is relatively basic and could benefit from updating, and several key signals are no longer operational. There is considerable congestion particularly at some of the key junctions near the Central Area and adjacent to new shopping areas which have not been well designed to cater for the level of traffic which they generate. Overall traffic congestion is normally not excessive for the size of city, except at times of flooding. There is however very little spare capacity and congestion could become a much more serious problem as Nairobi continues to expand.

Photograph 9. Failure of Traffic Management in Nairobi

The Institutional and Financial Responsibility for the Road Network

The responsibility for the road network in Nairobi is shared between the Ministry of Roads and Public Works, which has responsibility for the national roads which make up many of the main radial routes into the City, the Nairobi City Council and other District councils which are responsible for all other roads. The Nairobi City Council is however short of financial resources and has to rely on Central Government support for any major expenditure.

The Kenya Roads Board is responsible for advising the Ministry of Roads and Public Works on the allocation of funds for road maintenance (but not new road development). It also has an important role in monitoring expenditure on road maintenance. The Roads Board has 5 government and 8 private sector members. The main source of its revenue is a fuel levy. The Board advises the Government as to the rate at which they believe the levy should be set.

The money collected is split 16 percent equally to each Parliamentary constituency, 24 percent between the Districts based on a formula which reflects need (i.e. population, miles of paved road etc), 57 percent to the Roads Ministry, 3 percent for own expenses. It has now been agreed that a portion of the fund will be given directly to the five largest cities, including Nairobi, which receives only 1 percent of the Fund under the current formulae.

PUBLIC TRANSPORT IN NAIROBI: THE HISTORICAL BACKGROUND

Until 1973 Kenya Bus Services, which was 75 percent owned by United Transport International, and 25 percent by Nairobi City Council, had the sole monopoly right to provide bus services in Nairobi. It did this using full-sized buses. In the late 1960s it began to face increasing competition from illegally operated pick-ups and minibuses known as *matatus*. In 1973 President Kenyatta issued a decree which allowed 'matatus' ferrying up to 25 passengers to operate without licence, effectively ending United Transport's monopoly of public transport, although it was still the only company permitted to operate full sized buses.

Despite the decree, Kenya Bus Services retained its exclusive franchise for conventional bus services until the mid 1990s. However this was further devalued when, in 1986, the government launched its own bus company, Nyayo Bus Services to provide urban services in Nairobi and certain other towns. However despite the supply of buses under grant or concessional aid, together with other tax and duty exemptions, this company collapsed as a result of peculation and mismanagement.

In November 1991, Stagecoach Holdings Limited (a major and rapidly expanding United Kingdom bus company) bought United Transport's share holding in Kenya Bus Services Limited. Stagecoach expanded the fleet in the short term, but were then unable to sustain profitability in the liberalized business environment. In October 1998, a consortium of local investors acquired Kenya Bus Services Limited from Stagecoach Holdings.

PUBLIC TRANSPORT PROVISION IN NAIROBI

Matatus

The main source of public transport is the matatu, which are mainly 14 seater minibuses based on Japanese light vans. However a substantial number of 25 to 39 seater midi-buses, locally bodied on light-truck chassis, are also operated. It is estimated that there are 10,000-11,000 matatus and midi-buses operating in Nairobi.

Bus Track

The Bus Track division of Kenya Bus Services now owns a fleet of about 270 single deck vehicles. These have 59 to 65 seats but are no longer allowed to carry standing passengers although they were designed to do so. Because of shortage of spares Bus Track are only able to place about 220 vehicles

in service on any day. They operate over 22 radial routes from the City Centre. Bus Track carries nearly 150,000 passengers per day, down by a third since the regulatory reforms earlier in 2004. Consultants working on the Master Plan for Urban Transport in the Nairobi Metropolitan Area estimated its modal share as 15 percent of PSV passengers.

Metro Shuttle

Kenya Bus Services also operates Metro Shuttle. This division was established in 2001 to provide a better quality of service and comfort that was designed to attract the car commuter as well as the higher income bus passenger. New midi-buses were purchased, and particular attention had been paid to seat comfort and spacing. A premium fare is charged that has found ready acceptance in the market. The market segmentation concept had since been imitated by other operators. In overall terms however the Metro Shuttle services only cater for a very small percentage of the demand when compared with the bigger buses operated by Bus Track and the very large number of matatus; its modal share estimate is 1.5 percent.

Bicycle and Motorcycle Taxis

In the hillier outer suburbs there is limited use of bicycle or motorcycle taxis to provide connections from areas with poor road access to the main public transport network. Motorcycle taxis are not however as popular in Nairobi as Kampala, and are not used in the central business district. However a limited number of motorized trishaws (*tuk-tuks*) do provide services in this area.

Railways

Kenya Railways at the present time operates 5 commuter trains a day inbound in the morning peak and outbound in the evening peak. Although these trains are well loaded they only cater for a very small proportion of the total public transport demand.

Modal Split

The survey carried out for the KIPRA study showed the following modal split

Walking accounts for almost half of all trips. Of the non-walking trips two thirds are by matatu, with the Kenya Bus Services Bus Track carrying nearly 5 percent. Private cars carry 14 percent of the non-walkers.

Table A. 11. Modal Split in Nairobi

Mode	Number of Trips	% of Total Trips	% of Non Walking Trips
Walking	3,452	47.8	
Matatu	2,592	35.9	68.8
Private Car	529	7.3	14.1
Bus Track	184	2.6	4.9

School Transport	150	2.1	4.0
Other	117	1.6	3.1
Company Transport	88	1.2	2.3
Metro Shuttle	38	0.5	1.0
Kenya Railways	37	0.5	1.0
Other city buses	19	0.3	0.5
Taxi	11	0.2	0.3

REGULATION OF THE SUPPLY OF PUBLIC TRANSPORT

Vehicle Licensing

All public service vehicles require a public service vehicle license as well as the normal vehicle license. An applicant for public service vehicle licenses must present a certificate signed by a police officer (of or above the rank of Assistant Superintendent) certifying that the applicant is a fit and proper person to hold such a license. The owner must also demonstrate that the vehicle has been inspected by an authorized officer.

Seat Belts

In the last twelve months the Government has decided to apply the laws relating to both the operation of buses and minibuses more stringently. One particularly significant change is that it is now insisting that all public service vehicles must have seat belts fitted to every seat and that these seat belts must be used. This regulation has been taken to mean that no standing passengers are allowed, but this is not stated explicitly. The Traffic Act still empowers the Registrar to determine the maximum number of passengers, whether sitting or standing.

In the case of large buses, the effect of this regulatory interpretation has been particularly severe. These vehicles had traditionally been designed and licensed for 100 passengers with a 50/50 standee/seated ratio permitted for operation within the city boundary. Now, in order to maximize capacity, they have had to be converted from standee layouts with two entrances and a wide gangway to a conventional bus configuration that is no longer appropriate for intensive urban services. Even so, the resultant reduction in their licensed capacity can be as much as 40 percent. Midi-buses, that had been permitted one standing passenger for every four seats, have also suffered an effective reduction in their capacity. In the case of matatus their capacity now relates to the seats available, rather than the rated carrying capacity in kilograms divided by 65. This has resulted in a reduction in around 25 percent.

Crew Licensing

Drivers and conductors of public service vehicles need a license. Other than the obvious condition that the driver has a valid driving license the main extra conditions required to obtain a license are that a driver is over the age of 24 and the conductor over the age of 18. Drivers and conductors

must also have a certificate signed by a police officer (of or above the rank of Assistant Superintendent) certifying that the applicant is a fit and proper person to hold such a license.

Route Licensing

Before they can start carrying fare paying passengers the owners of public service vehicles whether matatus, midi-buses or full sized buses have to apply to the Transport Licensing Board indicating the route they wish to operate. Provided the owner can demonstrate that the vehicle is roadworthy a short-term license is normally granted immediately. The application for a longer-term license is then "gazetted" (published) and objections to granting the license can be made. The application is heard at the next regular session of the Transport Licensing Board. The Board is made up of the Chairman, representatives of different Provinces and transport specialists appointed by the Board. The Board in making its decision considers the level of supply already available on the route. At present partly because of the recent changes in the enforcement of regulations relating to overloading the Board follows the presumption that there is a shortage of supply and will normally grant all applications.

The matatus are not allowed to enter the heart of the Central Business District in Nairobi. This is a long-standing prohibition which is designed to prevent excessive traffic congestion. Both divisions of Kenya Bus Services are allowed to enter the Central Business District and terminate their services there.

Monitoring of Service Quality

No Government organization is specifically concerned with monitoring service quality, although this would be a factor which would be considered by the Transport Licensing Board in considering applications for new licenses. However at present all new licenses are granted.

Fares

There is no State control of fares which are determined by Bus Track and the matatu / midi-bus drivers depending upon the state of the market. Bus Track, however, act to hold fares down, and fares are higher on routes that they don't operate.

The fares charged by matatus vary with the level of demand on the route at the particular time. Off-peak reductions are normal. On the other hand, fares may be hiked during bad weather or at times of congestion. A typical fare for the 12.5km from Kangemi to the City Centre is KSh 30 (US cents 40) in the peak, reduced to KSh 20 (US cents 26) in the off-peak,

Bus Track also stated that their fares were set by market forces although they may be less inclined to change fares in the short term in response to demand pressures such as those brought on by adverse weather conditions. They offered off-peak fare reductions on most routes, but have a minimum-fare policy set at KSh 20. Kenya Bus Services adopt a policy of showing the fare on a board on the driver's window so that potential passengers know what they will have to pay.

Kenya Railways charge fixed fares which are generally much less than the fares charged by the matatus.

WORKING METHODS AND CONDITIONS FOR MINIBUS DRIVERS

The minibuses provide more than 90 percent of the total supply of public transport in Nairobi and provide employment directly and indirectly for 30,000 to 40,000. It is therefore important to examine their working methods and the conditions of employment of those providing this vital service.

Hours Worked

Drivers hire minibuses from owners for a daily charge. The drivers are responsible for providing fuel. The drivers tend to work long hours although in the off peak period much time is spent waiting to fill up at the terminals. Professor Chitere in his recent study of the Matatu Industry in Kenya interviewed matatu drivers and conductors, mostly working in Nairobi. He found that of a total of 109 drivers and conductors interviewed, 43 percent of drivers worked 7 days a week, 41 percent 6 days a week and all but one of the remainder 5 days per week. He found that 64.5 percent of drivers and conductors worked more than 13 hours per day and a further 16.4 percent worked 10-12 hours per day.

The Route Associations also have a number of "squad drivers and conductors". These drivers do not work for one particular owner but are available to fill in when the regular driver needs a break. Professor Chitere estimated that 41 percent of drivers and conductors were squad drivers. It is probable that the squad drivers spend less time actually driving than the regular drivers. They may however spend a lot of time waiting around at the terminals so as to guarantee their place in the queue for the work that is available.

Remuneration

It was estimated by the Matatu Owners Association that in the course of an average day the revenue collected in a 14 seater minibus would be about KSh 7,000 (US$ 92). Fuel would cost about KSh 2,500 (US$ 33) and the owner would expect about KSh 2,500 this would leave about KSh 2,000 (US$ 26) for the driver, conductor and any payments made to a squad driver.

New Legislation

The Government has recently tightened the laws controlling the operation of buses and minibuses. Legal Notice 161 stated that with effect from 31st December 2003 every driver and every conductor of a public service vehicle shall wear a special badge and uniform. The badges are provided by the Registrar of Motor Vehicles upon payment of a prescribed fee. Legal Notice 161 also stated that from the 1st February 2004 every driver of a public service vehicle should undergo compulsory testing after every two years to ascertain his or her competence. Every owner of a public service vehicle should employ one driver and one conductor who should be security vetted. Every conductor or

driver of a public service vehicle should be paid a permanent salary by the owner of the public service vehicle. It remains to be seen whether this last requirement, which would radically alter the relationship between owners and drivers, can in fact be enforced.

FINANCIAL VIABILITY OF PUBLIC TRANSPORT OPERATORS

It is very difficult given the fragmented nature of the ownership of the road based public transport service to obtain any precise financial information about the profitability of current public transport operations. This applies to Kenya Bus as well as the matatus as the operation of the individual Kenya bus routes has effectively been franchised to individual Route Managers.

Matatus with 14 Seats

After discussion with the Matatu Owners Association, the Consultants concluded that the costs to the owner of operating a vehicle including third party insurance, the necessary licenses and vehicle inspection fees plus expenditure on tyres and regular maintenance might amount to about K KSh 920 (US$ 12) per day. Given the daily charge to the driver of KSh 2,500, this gives a useful cash margin to the owner of about KSh 1,580 (US$ 21) per day or KSh 474,000 (US$ 6,200) per year.

It has been estimated that the average price of a 5-7 year old second hand vehicle is approximately KSH 900,000 (US$ 11,800). This would suggest that provided the vehicle escaped serious accident or a major maintenance requirement the capital cost could be recouped in about two years. The average working life of an imported 5-7 year old vehicle should be considerably more than this suggesting that at current fare levels the import of 14 seater matatus should be profitable. The results are however very sensitive to the anticipated daily revenue. If this were to fall the drivers would be unable to pay such a high vehicle rental and the profitability of owning minibuses would become much more marginal.

Matatus with 35 Seats

The Government has been trying to encourage the use of larger vehicles, in particular a locally bodied 35 seat matatu built on a truck chassis. These vehicles are however considerably more expensive since they have to be bought new at an estimated cost of about KSh 3.5 million (US$ 46,000). The owner will normally have to borrow from a commercial investor who will insist on comprehensive insurance. At present this costs about KSh 700,000 (US$ 9,200) a year, much more than the third party insurance normally taken out on smaller vehicles. The Consultants felt that the insurance industry was overcharging since it was basing premiums on the experience of insuring inter-urban buses where there was a much greater risk of serious high-speed fatal accidents. The Consultants were told by the Matatu Owners Association that many of those who had bought bigger matatus in the last two years would soon be bankrupt.

Kenya Bus Services

Kenya Bus Services does not publish accounts. The big bus routes are operated by 22 independent groups (mainly led by former KBS employees) who act as 'agents' for KBS and employ their own staff (drivers, conductors and running-repair mechanics). The main reasons for adopting this approach were to divorce KBS from the direct employment responsibilities for a highly unionized workforce (that had built up privileges over a number of years in excess of those found in the wider industry) and to pass on the revenue risk of the operations to third parties who would be in a better position to manage these.

It was the view of the Business Division Manager for the Bus Track division of Kenya Bus that since the change in the rules prohibiting standing passengers Bus Track had ceased to be a financially viable business. The current fleet is old, the average age in excess of 10 years and it is unlikely that they will be replaced. How long they can continue to operate before a shortage of spare parts starts to lead to a steady decline in the service offered is difficult to determine.

It is claimed that the higher quality Metro Shuttle operation for which Kenya Bus started using new 32 seat midi buses (on an Isuzu light truck chassis) has been profitable, and is now being copied by other operators.

Kenya Railways

The Consultants were told by Kenya Railways that their suburban services were not profitable.

PASSENGER SATISFACTION WITH THE SERVICE PROVIDED

Users' expectations are inevitably constrained by the service to which they have become accustomed. During the course of the study the Consultants discussed with a number of informed participants the extent to which the service provided met users expectations. They also held three focus groups in different parts of the City.

It was found that

- Most passengers are concerned about the level of traffic congestion and the consequent lengthy and unpredictable journey times. They are however somewhat resigned that little can be done about this;
- Passengers intensely dislike the system whereby the matatu fares vary according to the strength of the demand and the nature of the weather;
- Many potential passengers cannot afford to pay the fares charged, particularly since standing passengers have no longer been permitted;
- The Metro Shuttle service has proved popular with the more affluent sectors of the community who are prepared to consider using the Metro Shuttle instead of the car

There were mixed views about the decision not to permit standing passengers on the Kenya Bus Services and to restrict the number of passengers on the matatus. The increase in fares as a result of the change was not welcomed although those that could afford the increase welcomed the improved comfort and greater feeling of security. There was however a number of passengers who could not afford the extra fare and as a result now have to walk to work. The Consultants were also told of at least one example where a commuter had decided that with the increased fare it was no longer worth traveling to work. He had therefore given up his job and was seeking employment nearer home even though this would be difficult to find.

The affordability of public transport is a key issue in Nairobi. It was estimated that even before the recent increase in fares, nearly 50 percent of the population walked to work, most for several kilometers.

The public transport routes in Nairobi tend to all follow the main radial routes out of Nairobi. This means that passengers wishing to reach the main industrial area will normally have to change vehicles and thereby have to pay two fares.

In a recent study the Kenya Institute of Policy Research (KIPRA) have found that whilst the predominant demand is along the main radial routes, and as such is well served by the current public transport network, there is a still significant demand for orbital routes which are currently not provided.

NON-MOTORIZED TRANSPORT

The facilities provided for those using non-motorized transport are generally poor particularly outside the historic city centre where many important routes do not have adequate sidewalks. There appears to have been little obvious concern for trying to improve the safety of those needing to walk alongside or cross busy roads. The same applies to provision of facilities for cyclists. This may now be beginning to change with the Government realizing that providing basic facilities for walkers is important in reducing accidents and improving the quality of life of the urban poor.

RECENT PROPOSALS FOR CHANGE

The National Transport Policy Committee appointed by the Minister of Transport and Communications has recently published its Recommendations on Integrated National Transport Policy which includes a number of proposals for change.

These include:

- setting up a Metropolitan Transport Authority to coordinate and harmonize management and provision of public transport and be responsible for infrastructure planning, services planning, tariff regulation, and route network planning;

- encouraging a shift to high occupancy vehicles by public transport operators and redesigning the urban traffic flows to create dedicated infrastructure for the exclusive use of public transport vehicles;
- incorporating non mechanized and intermediate modes of transport in the urban road network;
- Incorporating commuter mass transit infrastructure within the major urban centers; and
- ensuring development and implementation of local transport plans that are fully integrated with urban and regional land use plans.

OBSERVATIONS

There are a number of areas where the experience of Nairobi may help in developing more general policy guidelines.

Road Infrastructure and Traffic Management

The road system in Nairobi was well designed to meet the needs of a smaller urban area with less car ownership. It is now, however becoming increasingly congested and traffic flow can breakdown when roads are flooded as a result of heavy rainfall. There is a vital need to improve the management of the current system and to give priority to large capacity public transport vehicles.

Nairobi City Council, which might be expected to take the prime responsibility for traffic management is very short of finance and does not have the staff to do this. The Government therefore needs to consider how effective traffic management can best be introduced. Chapter 5 of this report suggests that one way to do this would be to introduce a Metropolitan Roads or Transport Authority. The National Transport Committee has recently indicated that it supports setting up a Metropolitan Transport Authority.

Facilities for Non Motorized Transport

A high proportion of the population cannot afford motorized transport. Many make very long journeys to walk. It is important that their needs are not forgotten. Often relatively cheap improvements can do much to improve the safety and comfort of pedestrians.

Providing Affordable Public Transport

There is sometimes a clear trade off between the quality and cost of public transport. The evidence from Nairobi shows that the policy of insisting that all passengers use seat belts has improved the quality of public transport. However transport fares have risen as a result and this in its turn has meant that some previous users of public transport now have to walk

The conditions in Nairobi are now such that it should be possible for large buses operating on the main corridors of demand to provide a public transport service at a lower cost than with minibuses. The Government should therefore actively promote the development of such services. It could be one of the first tasks of the proposed Metropolitan Transport Authority to determine the routes on which such vehicles might operate. Wherever possible special purpose bus lanes should be identified and reserved for their use. The affordability advantage of using large buses would be enhanced if they were designed to take a significant proportion of standing passengers. This is the norm in most major cities in Europe and if the vehicles are properly designed should not compromise safety.

Providing a Higher Quality Public Transport Service

The success of Kenya Buses' Metro Shuttle service has shown that whilst many users of public transport require above all an affordable public transport service (which in the absence of subsidy means low cost), there is also a market for a higher quality service. The provision of such a service has the particular benefit that it will attract some passengers away from private cars or taxis. The resultant reduction in road congestion will benefit all other road users including the users of lower cost bus services.

APPENDIX B

VEHICLE OPERATING COST ESTIMATES

ESTIMATED COSTS OF OPERATING DIFFERENT KINDS OF VEHICLE

Table B. 1. Illustrative Operating Costs for Different Types of Vehicle

	Shared taxi	Minibus (New)	Minibus (5 Years Old	Large Mini-bus	Standard Bus
Passenger Capacity	4	14	14	35	100
Capital Cost (US$)	15,000	20,000	8,000	40,000	80,000
Years in Service	7	7	4	9	12
Interest Rate %	8	8	8	8	8
Cost per year	1410	1880	1775	3761	2946
Days operated per year	300	300	280	300	300
Cost per day operated	4.70	6.27	6.34	12.54	9.82
Crew Cost Per Shift	10	16	16	18	20
Shifts Per Day	1.5	1.5	1.5	1.5	1.5
Crew Cost Per Day	15	24	24	27	30
Insurance Per Day	5	8	6	15	30
Total fixed daily costs	24.70	38.27	36.34	54.54	69.82
Kilometres operated per day	270	250	240	240	220
Total fixed cost per mile	0.0915	0.1531	0.1514	0.2272	0.3174
Fuel cost per km	0.4	0.6	0.7	0.9	1.5
Tyres and maintenance cost per Km	0.03	0.06	0.09	0.14	0.20
Total variable cost per mile	0.43	0.66	0.79	1.04	1.7
Total cost per km	0.5215	0.8131	0.9414	1.2672	2.0174
Total cost per seat km	0.1304	0.0581	0.0672	0.0362	0.0202
Estimated load factor (both directions) %	65	65	65	65	55
Cost per passenger km	0.2006	0.0893	0.1035	0.0557	0.0367

Source: Consultants Illustrative Assumptions Based on Representative Costs

APPENDIX C

PEAK AND OFF-PEAK VEHICLE OPERATING COST ESTIMATES

ESTIMATED COSTS OF OPERATING VEHICLES IN PEAK AND OFF-PEAK PERIODS

Table C. 1. Comparative Cost of Catering for Peak and Off-Peak Demand. An Illustration for a Representative Minibus Service

	Off Peak	Peak	All Day
Hours per day	12	3	15
Demand per hour (peak direction)	1000	3000	
Demand per hour (off peak direction)	800	1200	
Demand per day	21,600	12,600	34,200
Round trip journey time (hours)	2	2.75	
Seats per vehicle	14	14	14
Average Passengers in peak direction	10	14	
Vehicles required	200	589	589
Cost of Providing Service	**Option A**	**Option B**	
	Sufficient capacity for off-peak only provided	Sufficient capacity for peak provided	
Vehicles required	200	589	
Daily Capital cost of vehicles (see Table B1) (US$)	1,254	3,693	
Other fixed daily costs (see Table B1) (US$)	6,400	10,554[1]	
Variable cost (see Table B1) (US$)	33,000	52,446[2]	
Total cost per day (US$)	40,654	66,693	
Passengers carried	25876[3]	34,200	
Cost per passenger	1.57	1.95	
Marginal cost per extra peak passenger (US$)		3.13[4]	

Source: Consultants Illustrative Assumptions Based on Representative Costs

[1] Based on assumption that fixed daily cost for vehicle required only for 3 peak hours is one third fixed daily cost of vehicle used for 15 hours

[2]Based on assumption that variable cost for vehicle required only for 3 peak hours is one fifth of variable cost of vehicle used for 15 hours

[3]Full off peak demand and 200/589 of peak demand

[4]Extra cost of Option B/Extra passengers carried in Option B

APPENDIX D

WORKSHOP REPORTS

WORKSHOP REPORTS

INTRODUCTION

Following the completion of the Draft Final Report (DFR), workshops were held in all 4 study cities in June 2005. The schedule is shown in Table D.1 below.

Table D 1. Workshop Schedule

Location	Date
Nairobi	14 June 2005
Kampala	16 June
Douala	21 June
Dakar	24 June

Participants included representatives of the government, the operators, other parts of the private sector and civil society non-government organizations (NGO). The participants are listed in Annex 1 to this Appendix.

The objectives of the workshops were to present the main findings of the DFR and to solicit comments from the participants, in particular their views on the recommendations of the report and their suggestions for how to implement those recommendations. Each workshop lasted half a day, with approximately one hour being dedicated to the consultants' presentations of the main report and the relevant city report, and two hours to discussions and comments from the workshop participants. (The consultants' presentations are shown in Annex 2 to this Appendix.).

MAIN POINTS OF DISCUSSION: NAIROBI

Role of City Council

The representatives of the City Council stressed the need to integrate the planning of bus routes with long-term land-use plans. The current plan dates back to 1973, but is in the process of being revised. They also noted that, currently, the licensing authorities do not consult the City Council on transport matters, despite the fact that it is mandated to plan and manage urban transport.

They also noted that the growth in private car use was a major contributor to the congestion in the city and that more needed to be done to meet the needs of non-motorized transport, principally pedestrians.

In the discussion that followed, there was agreement of the need to take due account of land-use development in transport planning. There was also a general recognition of a "democratic deficit"

in the planning and management of urban public transport, and an acceptance that the City Council, the other local authorities in the metropolitan area and other stakeholders, should have a voice in the matter. Unfortunately, although the Transport Licensing Board had been invited to the workshop, there was no representative present, so it was not possible to explore their reaction to this suggestion.

Fares

The representative of the Ministry of Roads and Public Works noted that if fares were to be set as part of the franchise process, it would be necessary to introduce escalation clauses to take account of increases in input costs.

Grouping of Small Operators

There was general acceptance of the benefits of encouraging the independent operators to combine into groups, and it was noted that earlier reports had recommended something similar. It was also suggested that the operators' associations could do more to share the technical expertise already available in the sector.

The difficulties of financing new vehicles for small-scale operators were noted, and it was suggested that the process of grouping small operators into companies or cooperatives could help facilitate access to finance.

Safety

The representative of Bus Track noted that the Government had loaded much of the cost of safety measures onto the operators, in particular the fitting of regulators and the abolition of standing passengers, which had seriously reduced the revenue of his company. He noted that the main victims of accidents involving buses were pedestrians, sometimes due to their own carelessness and sometimes due to a lack of facilities, such as sidewalks, which were the government's responsibility to provide.

Long-term Development

A number of participants expressed some interest in developing rail based systems, noting that the city was expanding and was expected to spread 20 to 30 km out from the current CBD. The consultants noted that such systems have proved very expensive elsewhere, and that it would be more practical to ensure the development of bus corridors which could be converted to LRT or similar, in the future, when volumes of traffic were sufficient to justify them.

Institutional Changes

Many of the participants complained that there were too many different agencies involved in the urban transport sector. There was general acceptance that it would be difficult to reform the planning and management of the urban transport system within the current framework, and that it

would be necessary to develop new institutions, such as the Metropolitan Transport Authority (MTA) proposed in the report, to license vehicles, plan and manage routes, and become involved in traffic management. There was also a suggestion that it could become involved in driver licensing and training. Finally, it was also suggested that the MTA would need to have enforcement powers. However, there was little or no discussion of the time that would be needed to make such an institution effective.

It was also suggested that the regulation of the urban bus industry should be undertaken by an independent regulator, rather than by a section of the Ministry of Transport as at present.

Implementation Problems

The participants expressed some concern about the practicality of implementing any of the report's recommendations, as there was no national body directly identified as the "client" or "owner" of the study. The consultants explained that SSATP was a joint venture of donor agencies and the national governments in the region. The report was intended to give general guidance to all the member states, not just the countries visited during the study. In principle, the recommendations should be brought to the attention of the relevant ministries by the SSATP representative (who, unfortunately, was unable to attend the workshop).

More generally, it was noted that implementing the recommendations would involve several government bodies working together and could eventually also involve the transfer of powers to a Metropolitan Transport Authority. This would almost certainly mean that the prime initiative would have to be at presidential level, as is currently happening in Ghana, with the formation of a Presidential Commission to reform the control of the urban transport system.

MAIN POINTS OF DISCUSSION: KAMPALA

Role of UTODA

UTODA objected to the text of the city report, saying that it over-stated their earnings. They also pointed out that the City had failed in its attempt to recover the money they said was owed by UTODA, as no proof could be provided[11].

UTODA went on to note the need to control the public transport industry, but argued that this should not be the responsibility of a new organization, but should be done by the stakeholders. They thought that they should be left to regulate the industry. Other participants suggested that all stakeholders (not just the operators) should be involved in industry regulation

[11] In a brief private discussion after the workshop, UTODA attempted to convince the consultants that the statements in the report were untrue, but provided no evidence that could persuade the consultants to change the text.

The representative of the Uganda Private Road Users said that the report had given a good overview of the present situation, but lacked the historical perspective, which would explain better how the present situation had arisen. In particular, political factors had been very important in the development of UTODA. He noted that Kampala City Council had abandoned any attempt to regulate the industry and expressed concern that the profits of the industry were not being ploughed back, which resulted in poor quality services and the impoverishment of the drivers.

Other participants expressed the view that not enough was being done by UTODA to improve the quality of services, and that an independent regulator was required. It was suggested that UTODA was taking too much out of the industry.

It was also suggested that it would be desirable to separate the provision of infrastructure (notably bus terminals, currently run by UTODA) from the provision of services. Additional parks were needed to reduce the time spent walking to take transport.

UTODA said that they were considering developing additional parks, and that they were also encouraging the use of larger buses.

Traffic Management

The Police representative noted that there was some evasion of regulations on parking and vending activities on sidewalks. He also noted that many vendors had been licensed by the city council and moving them from the sidewalks might require new regulations.

One participant noted that a substantial amount of road space was lost to parking and that off-street parking should be developed.

Affordability and Fare Controls

There was general agreement that the government should not involve itself in trying to control or subsidize fares. That should be left to the market.

One participant noted that the 25 percent tariff on bus imports discouraged the development of public transport.

Institutional Development

The RAFU representative explained the proposals to set up a Transport Master Plan Unit, at both national and local level. Within this unit, there would an implementation unit, which would become involved in planning public transport developments.

It was also noted that there was a separate study, examining the possibility of setting up a multi-sector transport regulator, which would undertake many of the functions of the proposed Metropolitan Transport Authority.

The consultants argued that was a need to create a body to coordinate the very complex activities involved in developing urban public transport. Nevertheless, there was a widely expressed view that the development of public transport could best be handled within the existing institutional framework. It was suggested that many of the coordination problems could best be handled through joint committees.

Road Infrastructure

The RAFU representative noted that the GoU had recently agreed to set up a National Road Agency, which should start operations next year. It would initially deal only with national roads, but could later extend its operations to cover urban and district roads. The KCC representative noted that, although he was in favor of the creation of a National Road Agency, it was inevitable that it would concentrate on national roads. The current funding arrangements were inequitable, and more money should be devoted to urban roads.

Rail Infrastructure

It was suggested that, in the long-term, it would be necessary to develop rail transport in Ugandan cities. The RAFU representative noted that the Master Plan allowed for such development.

Industry Consolidation

The consultants noted that the case for industry consolidation was that it would help spread risks among operators and reduce the costs of finance and insurance. The participants expressed the view that Ugandan operators were used to working independently, and that consolidation would involve management problems. UTODA said that they were considering how best to rejuvenate cooperatives. However, the view was also expressed that if the market or regulatory structure was appropriate, the operators would naturally tend to consolidate, without official encouragement.

MAIN POINTS OF DISCUSSION: DOUALA

Objectives of the Study

A number of participants raised detailed questions about traffic management and enforcement, in particular parking and control of moto-taxis, and wanted to know what the consultants had proposed to deal with these questions. It was then pointed out that the study dealt primarily with institutional, regulatory and financial matters and had not been designed as a technical study of traffic problems in Douala. The consultants noted, however, that in making a fair assessment of the problems facing the public transport sector, it had been necessary to consider general aspects of urban transport, in particular traffic management and infrastructure problems, although it had not been possible to consider them in detail.

Parking

Loss of road space to parking was recognized as a problem by the participants. Reduction of street parking space had been attempted, but there was very little space available for off-street parking. It was suggested that the introduction of parking charges could help reduce on-street parking and could give an incentive for the provision of off-street parking.

Moto-taxis

A number of participants expressed concern about the dangers of moto-taxis both to passengers and other road users, due to erratic and inconsiderate behavior of the drivers. It was noted that the moto-taxis services had blossomed as a consequence of the poor condition of the city roads, and such services were not found in Dakar and Nairobi, where roads and transport services were better. It was likely that, once the roads improved, the moto-taxis would lose business.

Roads

There was general agreement that the poor state of the roads was a major problem for the city and was impeding its development. There was also a clear sense that the funds allocated by central government were insufficient, and that Yaoundé was unfairly favored by central government.

The transport operators, both SOCATUR and the taxi syndicates, noted that the poor state of the roads was a major cause of damage to their vehicles.

Fiscal Costs

Both SOCATUR and the taxi syndicates complained about the high level of charges levied on the purchase of vehicles and on spare parts. There was a general feeling that transport services should be given exoneration on at least some of the charges, such as VAT and import duties. It was pointed out that urban transport was subsidized in most western cities.

Financing Vehicle Purchase

In the context of the costs of transport operations, it was noted that in other cities (notably Kampala), leasing companies have been set up, to purchase vehicles (both new and second hand) for leasing to operators.

Road Fund

Many of the operators were unhappy with the number of charges levied upon them, and expressed concern that the revenue from these charges was not going towards improving the roads. It was pointed out that, at present, all taxes raised by central government, by law went into the central treasury, and the funds for roads were taken from this central resource. However, the government had now decided to make an exception for roads and the Road Fund would, in future, be financed

from specific charges levied on road users. A number of participants stated that they would be happy to pay the charges necessary to improve the road system.

Franchising

A number of participants accepted the proposition that the city should move towards franchising bus services. However, they also felt that they needed more information as to how this could be done. The consultants noted that the design of an appropriate network and the setting of franchise conditions would require a detailed, city-specific, technical study.

Red Tapes

The taxi syndicates were very vocal in their condemnation of the activities of the police, who they alleged, extorted money from them for minor infractions. The consultants noted that the allegation had been included in the report, but they were not able to confirm or refute it, as they (naturally) had no firm evidence of the scale of the practice.

Metropolitan Transport Authority

There was a clear sense that there was an immediate requirement for a locally based regulatory agency to be responsible for improvements to the urban transport system. It was also suggested that, in the context of decentralization, the local authorities should play a more important role in the organization of urban transport.

It was noted, by SOCATUR, that any such body would have to have the necessary enforcement powers. It should also be used to ensure complementarity in transport services.

Concern was expressed about how such a body could be financed. The consultants noted that a regulatory authority would not be too expensive to run, and could almost certainly be funded by small charges levied on the operators. However, setting up such an authority would require legislation and that could take some years.

Training

The taxi syndicates expressed the view that more could be done to assist with training. The consultants noted that, in Dakar, the new metropolitan transport authority was providing all aspects of operator training, and something similar could be done in Dakar. It was also noted that there was a need to develop a transport ethic, so all those involved in the industry would accept their responsibilities to other operators and, most particularly, to the users.

Recommendations

Finally, the workshop made 6 recommendations.

1. A Douala based metropolitan transport authority should be set up as soon as possible

2. The government should consider introducing complementary measures, such as financial incentives and exoneration from taxes, to encourage the purchase of vehicles for use in public transport.
3. There should be special fiscal measures to support urban transport
4. Additional training (capacity building) should be provided for transport operators
5. The local authorities (Mairie) and the local private sector should participate in the Road Fund / Agency planning for works on urban roads.
6. The local authorities need additional technical and financial capacity in order to deal with problems of urban transport.

MAIN POINTS OF DISCUSSION: DAKAR

Translation and Other Textual Points

It was noted that in some areas, such as modal split, more up-to-date information was available. The consultants noted this point and promised that they would be corrected in the final version.

Coverage of the Report

A number of participants expressed a desire for more detail on the transport situation in Dakar and for more specific proposals to deal with the problems facing the city. The consultants pointed out that the study was primarily centered on institutional, regulatory and financial questions, and was intended to provide general guidelines for other cities in Africa, which were not so far advanced in their programs of urban transport reform.

Road Infrastructure – PAMU Program

The representative of the Institute for Transportation and Development Policy (ITDP) argued strongly that the road construction program undertaken by PAMU was not sufficient, and that much more would have to be invested in infrastructure. He was greatly in favor of developing a system of major corridors (*axes lourds*) and making provision for bus lanes. He thought that the city should avoid spending large amounts of money on rail based solutions, such as metros.

The World Bank representative pointed out that the PAMU program was the first major road infrastructure program undertaken in the city for many years. Further work may well be required, but PAMU was an important step in overcoming the backlog. The Bank also noted that infrastructure expansion alone would not solve the transport problems; an integrated approach, involving traffic management and coordination of transport and land-use planning would be required.

Pollution

ITDP noted that there was some information available on air pollution caused by transport within the city and argued that the lack of action to control it was due a lack of political will. CETUD pointed out that action was being taken as part of the PAMU program, with the installation of pollution monitoring points and new inspection stations to check and correct vehicle emissions. It would also be necessary to develop a program to improve the quality of fuel, for example by reducing the levels of sulphur and lead.

Network Planning

It was noted that an effective long-term development of public transport would require a detailed technical study, to ensure that best use was made of strengths of road and rail systems. It was noted that bus or car-rapide services could be used as feeders to an improved suburban railway.

Fleet Renewal

It was pointed out that there were often good reasons for using second hand vehicles. Initial costs were low, and there was a local industry devoted to the conversion and maintenance of such vehicles.

The operators present noted that the World Bank financed renewal program involved the payment of a large deposit, which was difficult for many operators to raise. Further, there was no experience of working with Tata in Dakar at present.

CETUD noted that the decision to use a common vehicle for the fleet renewal program had been taken in consultation with the transport operators, and that the specification for the vehicles had been developed by a panel of independent experts.

Fares

A number of participants spoke in favor of fare controls, as being important to protect the passengers. It was also noted that, under the future convention between CETUD and DDD, there was the possibility of providing a subsidy to compensate for the difference between long-run costs and fares.

Enforcement

A number of participants argued that there was a lack of enforcement of existing regulations and a need to ensure that drivers followed the rules of the road. The representative of the Police noted that there had been a recent improvement, with the introduction of a dedicated Traffic Police, but that it was difficult to persuade the public to follow the rules. He noted, in particular, the difficulties in getting drivers to use seat belts and to desist from using mobile phones when driving. He also noted that, while the use of the sidewalks for vending blocked the flow of pedestrians and was also,

usually, illegal, the custom was long-established and it would be very difficult to overcome; there were no alternative locations for the vendors.

CETUD Program

CETUD noted that 500 operators had already agreed to join the GIE. The procedures for allocation of route franchises was not necessarily linked to the acquisition of new vehicles, as it was accepted that there could be a mix of old and new vehicles on the franchised lines. It was understood that it would not be possible to renew the whole fleet in the short term.

It was also noted that an important, and successful, part of the CETUD program was the training of operators, as part of the moves to professionalize the transport industry.

Finance

It was noted that the report did not cover the specific problems faced by the transport industry in financing the purchase of vehicles. It was suggested that this perhaps should be covered in a separate study, which could examine the possibility of setting up a new financial institution, specializing in transport finance.

The SSATP Technical Adviser noted that the proposals for the Road Fund included an allocation for urban transport. He suggested that, in light of the interest shown in the question of financing vehicle purchase by the participants, the consultants could extend their treatment of this topic.

APPENDIX D. ANNEX 1

WORKSHOP PARTICIPANTS

List of Workshop Participants

Family Name	First Name	Organization	Position
		Dakar	
Mdiaye	Lamine	AATR	Représentant
Thiam	Elhadji M	ADEETU (*Association des Consommateurs*)	
Kabir Sow	Mohamadou	ADM	Représentant
Gueye	A.	Agence de Développement Municipal	Représentant
Diagne	Djibril	APIX / DGT	Directeur GT
Sene	Col. Abdoulaye	ARO	Directeur
Diene	Ibra	Association de Financement du Transport Urbain	Président de l'Association de Financement des Transporteurs
Kane	A.Cire	CETUD	Conseiller juridique
Thiam	Ousmane	CETUD	Président du CETUD et de l'Assemblée Plénière
Sagna	Pascal	CETUD	Conseiller Technique
Abdoulaye	Sy	CETUD	Conseiller Technique
Faye	I.	Chauffeur Rufisque	Représentant
Ndiaye	Y	Commune Bargny	Membre du Bureau du Maire
Gaye	Abdou	Commune de Diamniadio	Conseiller Municipal
Diop	Mbaye	D.P.E.V.U.	Chargé de Programme
Boisssy	Aime	DAT / Ministère Urbanisme et Aménagement du Territoire	
Sene	Doudou	DAU / Ville Dakar	Conseiller Technique
Diao	M. Kane	DGT / NIETSMI	Représentant
Ndiaye	Samba	Direction Régionale des Transports Terrestres	Chef du Service des Mines
Ndiaye Gyeye	A	DPEVU	Représentant
Mbaye	M	DPS	Ingénieur
Nbaye Ka	Mamadou	DTP	Représentant
Diagne	Soudou	DTT	Conseiller technique
Gueye	Fatou	DUA / MUAT	Représentant
Ndiaye	Ibrahim	ESP / CUREM	Représentant
Seck	Mbacke S	ESP / CUREM	Représentant
Faye	Roger Marcelin	ESP / UCAD	Chercheur
Wane	Mme Raqui Wane	Horizons Assurances	Assureur Directrice Horizons Assurances
Diop	Mbareck	Institute for Transport Development	Country Director
Sane	Col. Nfally	Police de Circulation	Commandant
Ousmane	Seye	Pool TPV	Représentant
Ousmane	SY	Pool TPV	Représentant
Mamadou	LY	RACT ENDAGRAF	Responsable Programme Transport

Family Name	First Name	Organization	Position
Benmaamar	M	SSATP	Senior Transport Adviser
Khouma	Gora	Syndicat - Transporteurs Routiers CNTS / FS	Président
Abdoulaye	LY	Ville de Guediawaye	Représentant
Seck	Alhadji Ale	Ville de Pikine	Représentant
Diou	Christian	World Bank	Sr Municipal Engineer
Diouf	Ibou	World Bank	Transport Specialist

Douala			
Sime	Pierre		Président National des Transporteurs
Ngando Moukala	Jean-René	Agence de Développement de Douala	Directeur
Gleave	G.R	ASI	Team Leader
Sowe	J	Auto-École	
Lissom	B.	Cameroun Tribune	Journalist
Bchala	Charlemagne	Cameroun Tribune	Reporter Photographer
Saidou	A.B	CCIMA	Sec-General
Bakyono	Anne Marie	CEA - Centre Afrique	Economist
Komegue	J.	CEBEC	
Fansi		Cible	Directeur
Kagou	Yves	Cible	
Tsafack		Communauté Urbaine de Douala	
Yamdjeut	G	Communauté Urbaine de Douala	CVT
Yango	Jean	Communaute Urbaine de Douala	DGT
Toue Evini	Albert	Communauté Urbaine de Yaoundé	Engineur Genie-Civil
Ndje	J-M	Communauté Urbaine de Yaoundé	Urbaniste
Kengnie		CSYNATCAM	Président
Kamdem	Armand	CUAD 5	Représentant de la Mairie - Douala 5
Tchato		CUAD2	Maire - Douala 2
Tchuisseu	Jean	CUAD2	Chef du Cabinet - Maire
Mbongue	E.A.	CUAD4	Chef des Services Techniques
Kom		Délégation Provinciale des Transports	Représentante du Délégué Provincial
Ngassa Happi	Leopold	FESETRACAM	Vice-Président Fédéral
Ebopoisse	Alex	GICAM	Dir BAS
Ngomahobe		GIDETEC	Délégué
Foko	Fernand	La Missive	Journalist

Family Name	First Name	Organization	Position
Fojeph	Hercule	L'Autre Journal	Journalist
Elangue	Charles	Le Satirik	Journalist
Metoulk	J	Mairie Douala V	
Oloune	R	MINDUH	Représentant
Ebongue		MINEPI	
Lissom		Ministère des Transports	Rep SSATP
Ngo Mandong	Odette	Ministère des Transports	Représentante DTT
Ngo	B.M.V	MINPLAPDAT	Cadre
Zanzg	L	MINTATD	Membre
Ngaissa Rabah		ORGASYNTUC	Président Provincial
Tchoffo	Mesmin	Radio Venus	Journalist
Tahouer	Theodore	SECTRACOUCAM	
Kamgoue		SESIC	
Pemechou	Alice	SN CHAUTAC	
Kounajou	C	SNCHAUTAC	Délégué
Tata	D.	SNCHAUTAC	Président Provincial
Lozifo		SNPTCBC	
Fomassa	Joseph	SNPTCBC	PDTN
Ekitike		SOCATUR	Responsable Commercial
Nouloby	L	SOCATUR	DRHA
Benmaamar	M	SSATP	Senior Transport Adviser
Tchokouha		STV	Technicien
Yentgwe mbimou	A	STV	Technicien
Mmorh	Elisabeth	STV	Journalist
Nyatcha	L	STV	Journalist
Tchengang		SYNAABUCOM	President
Ketchadji	Roger	SYNACTUICAM	President
Yetchang	Edouard	SYNATAW	President
Tchokouha	Seraphim	SYNCHAURAC	Coordinateur
Diamte	Appolos	Synejetcam	President National
Dignou	Thomas	SYNETCAM	President Provincial
Wandji	Robert	SYNEXTUICAM	
Feumba	J-P	SYNITURCAM	Secrétaire Général
Ngangou		Synjaoluian	Président
Tchendo	T.	SYNPROCETAC	Trésorier
Fotie	Samuel	SYNPROTAXCAM	Président
Nyam	Dennis	Syntinercam	
Kimote	T	Transport Kimote	Transporteur
Misnguire	T	Transport Msinguire	Transporteur
		Kampala	
Ogwang	MHO		
Gleave	Graham R	ASI	Team Leader
Barrett	Ian	ASI	Consultant
Oketch	M.L	Daily Monitor	

Family Name	First Name	Organization	Position
Damuzgade	Sophie	Farmers Voice	Journalist
Lule	Charles	Impact FM	Radio Journalist
Ochieng	E.O.	International Development Consultants	
Byandala	Abraham J	Kampala City Council	
Semakula	Merewooma	KCC - Kawape	Vice Chairman
Elangot	Joseph	MEMD	
Sebyala	Mohammed	Ministry of Finance	Senior Finance Officer
Adiko	Charles	New Vision	Reporter
Cohen	Irvin	RAFU	
Kirunde	Saul	Spear Motors - UMIA	
Magambo	Seth	Spear Motors - UMIA	
Okiror	J.P.	The Development Analyst	
Tibayungura	Gabriel	Traffic Police	
Musorce	John B.	Uganda Bureau of Statistics	
Opiyo	Peter	Uganda Bureau of Statistics	
Marlone	Dan N.	Uganda Consumers Protection Agency	
Kwamusi	Paul	Uganda Private Road Users Association	
Sseggane	John	Uganda Revenue Authority	
Ndyomugyeni	John	UTODA	National Chairman
Ibabaza	Rev. Atwune	UTODA	
Ahumuza	Patricia	Victor Motors - UMIA	
Ocaya	Victor	World Bank	

Nairobi			
Gleave	Graham R.	ASI	Team Leader
Barrett	Ian	ASI	Consultant
Chiuri	C.M.	City Council of Nairobi	City Engineer
Ogut	Christine E	City Council of Nairobi	Assistant City Engineer
Kagamba	E.H.M.	City Council of Nairobi	
Mwangi	J.K.	City Council of Nairobi	C.A.E (Transport Unit)
Adolwa	P.S.	City Council of Nairobi	Director City Planning
Muema	Rose	City Council of Nairobi	AD (City Planning Department)
Gichana	Paul	CMC Motors	Sales Manager
Rema	Ezekiel	Federation of Slum Dwellers	Chairman
Mwangi	H.M	Hossaro Assessors	Assessor
Ngirau	L.	Institute for Democracy & Governance	CEO
Chitere	Preston	IPAR	Policy Researcher
M'mboyi	Felix	JICA Study Team	Evaluation Adviser
Koto	Masato	JICA Study Team	Public Transport Planner
Mwangi	S.	JICA Study Team	Engineer
Kariuki	Fred	KAM	Industrial Economist

Family Name	First Name	Organization	Position
Ouma	Fred	Kenya Alliance of Residents Associations	
Kiptoo	Charles	Kenya Bus Services	Bus Division Manager
Kiarie	Charles K.	Kenya Matatu Drivers & Conductors Association	
Mwangi	D.N.	Kenya Matatu Drivers & Conductors Association	
Kyalo	D.J.	Kenya Police (Traffic)	Commandant
Gakubia	J.K.	Kenya Roads Board	Engineer
Owegi	Fred	KIPPRA	Assistant Analyst
Kipkazi	Wilson	KNCC&I	Chairman Transport
Kibui	John	Matatu Owners Association	Executive Secretary
Kimutai	Simon	Matatu Owners Association	National Chairman
Kamau	I.N.	Ministry of Transport	
Mibey	Elizabeth C.	MoRPW	
Kimani	J.M.	MoRPW	Senior Economist
Ngare	S.M.	MoRPW	
Macharia	Simon	OSDC	Consultant
Leyland	Jo	SIDA	Consultant
Opiyo	Tom	University of Nairobi	Lecturer