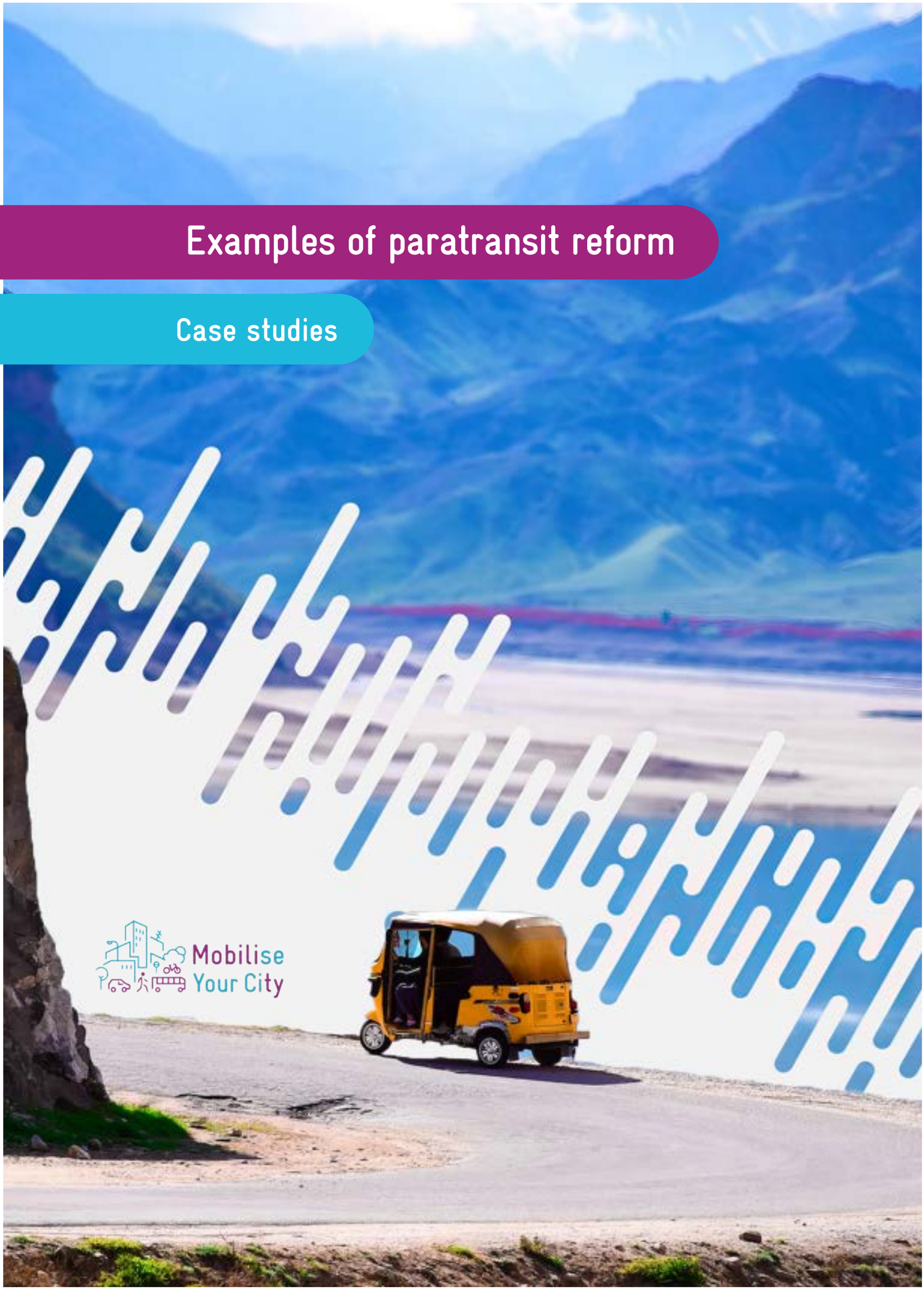
Examples of paratransit reform

Case studies



Mobilise Your City

For more information:

MobiliseYourCity Partnership Secretariat
www.mobiliseyourcity.net

e-mail: contact@mobiliseyourcity.net

Título: Reforming paratransit – Catalogue of practical measures

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Authors: Solène Baffi, Teddy Delaunay, Noémi Mené, CODATU; Jean-Pierre Lannes, Clément Musil, Pauline Bogey, Espelia; **Julien Allaire, Pablo Salazar-Ferro, Transitec**

Contributors: Lise Breuil, Anne Chaussavoine, François Carcel, Benjamin Fouin et David Margonsztern, AFD; Sasank Vemuri, Mateo Gómez et Saman Tariq, GIZ - MobiliseYourCity Secretariat; Eleonore François Jacobs et Inès Bourdon, CODATU – MobiliseYourCity Secretariat; Dominika Kalinowska, Patricia Mariano, Zacky Ambadar, Maulana Ichsan Gituri et Ari Nova Firnanda, GIZ; Bertrand Goalou et James Leather, ADB; Joachim Bergerhoff and Conrad Richardson, SMMR project; Subhadeep Batthacharjee, WRI; Rémi Desmoulière, GustaveEiffel University/CESSMA; Bert Fabian, UNEP; Elmer Francisco, Elmer Francisco Industries; Ravi Gadepalli, Independent Consultant; Rizki Herdian et Ferdinand Marterer, Egis Rail; Robin Kaenzig, Transport Economist; Ruslan Karabukaev, GoDee; Gaurav Mittal, University of Singapore; Veng Kheang Phun, Institute of Technology of Cambodia; Joemier Pontawe, Department of Transportation – Philippines; Varun Varghese, Hiroshima University

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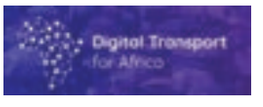

Why a paratransit toolkit?

This document is aimed at decision-makers, transit planners, consultants and policy-makers responsible for integration in the urban transport sector, working to promote sustainable, inclusive, efficient, and high-quality mobility systems. Its aim is to help stakeholders consider paratransit in these systems in a coherent and integrated manner.

Paratransit is an essential mode of transport – and often the only public transport available – in many towns and cities in the Global South. Therefore, better integrating paratransit into urban mobility systems is a key challenge if we want to achieve fairer and more sustainable urban mobility for everyone.

Improving the integration of paratransit means meeting three key challenges for the sector, which can sometimes be contradictory: optimising the efficiency and quality of the service provided; improving working conditions for operators; and controlling negative externalities, particularly in terms of environmental impact and accidents. To achieve these objectives, we must first identify the relevant levers that will enable decision-makers and transit planners to reform paratransit services in an acceptable manner to all stakeholders in order to build a sustainable and inclusive mobility system.

This publication therefore aims to provide decision-makers and transit planners with practical tools for planning and implementing paratransit reforms. The MobiliseYourCity toolkit consists of four documents:

- Tool I – Understanding paratransit – Global overview and local challenges
- Tool II – Conducting a paratransit diagnosis – A practical guide with 6 key questions
- Tool III – Reforming paratransit – Catalogue of practical measures
- **Tool IV – Examples of paratransit reform – Case studies**

The aim of this document (Tool IV in the toolkit) is to provide decision-makers and transit planners with practical examples of reforms – or attempted reforms – of paratransit from around the world. These projects generally share a number of objectives, including improving service quality, working conditions for operators, and air quality. Depending on the context, local authorities may use various levers to introduce measures in the sector. By analysing these projects, we can identify what solutions have been introduced and what knock-on effects have been observed that were not necessarily anticipated by the local players. The 11 case studies presented herein are intended to illustrate the systemic component of the paratransit sector, to learn from both the successes and the limitations observed on an international scale, and to identify the levers that have made it possible to introduce solutions that benefit all players in the ecosystem.

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In Kenya, the difficult task of regulating paratransit

Nairobi		
	Population	5.9 million
	Area	700 km²
	Governance	Nairobi City Council 17 constituencies 85 wards
	Modes of transport	Minibus (*matatus*) Bus Train Taxis
	Modal shares (2013)	Walking: 39.7% Matatus: 28.4% Bus: 12.2% Train: 0.2% Private car: 13.5% Other: 5.9%

Background: The Kenyan government's takeover of the public transport sector

In the early 1980s, the Kenyan authorities sought to regain control of urban transport regulation. To achieve this, they laid the foundations for a public regulatory framework with the Traffic Act of 1982, which governed the use of road infrastructure and public transport activities, reaffirmed the legality of matatus, and required operators to obtain Public Service Vehicle (PSV) licences to carry passengers. Since then, to be authorised to operate passenger transport services, owners have been obliged to obtain a PSV licence for each of their vehicles, drivers, and ticket inspectors. The licence is granted for a fixed route, which is the only route along which the operator may provide their service.

Qualitative and quantitative regulation of the sector with the Michuki rules

In 2003, an amendment to the Traffic Act (Legal Notice no. 161) introduced the so-called "Michuki" rules, which define a set of quality of service and vehicle standards. In particular, the Michuki Rules require operators to:

- have their vehicle inspected every two years;
- provide seat belts for passengers;

- install a speed governor set at 80 km/h;
- paint yellow stripes and display the route authorised by the PSV licence on their vehicle;
- display the photo and identity of the driver and ticket inspector, who must wear a specific uniform.

In addition to these rules, the Michuki Rules require *matatu* owners to pay their crews and provide them with a legal employment contract. Lastly, the adoption of the Michuki Rules in 2004 made it illegal to operate vehicles with fewer than 24 seats and required owners of larger vehicles to modernise their fleets (reduction in occupancy rates, safety equipment, visual identification of vehicles). This measure, which creates an additional barrier to access the public transport market, is justified by the Ministry of Transport as a means of addressing the proliferation of operators, in order to reduce the number of small vehicles in operation, alleviate congestion, and improve road safety.

When the new regulations came into force, vehicles with fewer than 24 seats were forced to suspend operations, as the majority of transport services in Nairobi had been provided by vehicles with 14 seats. Owners of larger vehicles without sufficient resources to modernise their fleets were also forced to suspend operations. However, those owners could quickly comply with the rules. As a result, the number of vehicles on the road declined rapidly, the number of passengers in each vehicle felt (as a result of occupancy regulations), and passengers safety improved, with an immediate reduction in the number of road accidents.

Greater spatial inequalities

However, the Michuki Rules could not be applied in the long term. To be able to continue operating, operators were forced to double fares, forcing residents to take fewer trips or use other modes of transport, particularly walking. The new legal requirements therefore helped reduce some of the negative externalities caused by paratransit systems, but also significantly worsened inequalities in accessibility and reduced overall transport service across the country, forcing the government to backtrack after only a few months (Mithulla, 2013).

Since 2003 and the introduction of the Michuki Rules, 14-seat minibuses have continued to grow in popularity and now account for the majority of the *matatu* fleet. Moreover, almost all paratransit operators are still paid per day. Only certain relatively cosmetic rules remain (wearing uniforms, visual identification of vehicles). On 17 July 2020, the Kenyan High Court of Justice ruled that the government's decision to ban minibuses with fewer than 25 seats was unconstitutional. On the one hand, the ban jeopardised the jobs of thousands of Kenyans and, on the other, the drafting of the law was not subject to any public consultation process, which is required by the Constitution. Though essentially of symbolic value, this court decision nevertheless confirmed that the Michuki Rules, which were supposed to improve the quality of services and working conditions for paratransit employees, were a failure.

Key points		
	Objective(s) to be achieved	• formalise the sector • improve working conditions • improve service quality
	Tools	• identification of operators • introduction of specifications • fleet renewal and increasing vehicle capacity • reduction in the number of operators and employees
	Knock-on effects	• quantitative reduction in transport services
	Problem areas	• poor assessment of the sector's business model • passengers' limited financial resources • uncoordinated implementation of the reform

In Douala, attempts by local authorities to open a dialogue with players in the paratransit sector

Douala	**Population**	3.7 million
	Area	923 km²
	Governance	Douala Urban Community (DUC)
	Modes of transport	Motorbike taxi Taxis Bus
	Modal shares (2018)	Walking: 35% private 2-wheelers: 4% Taxis: 12% Motorbike taxi 40% Private car: 5% Other: 4%

Background: motorbike taxis, essential services that remain very informal

Douala, Cameroon's economic capital, currently has a population of 3 million, who mainly travel on foot (modal share 34%) and by motorbike taxi (modal share 40.4%). With almost 2 million journeys made each day, the around 100,000 motorbike taxis operating in the area provide over 60% of the city's motorised travels. These services therefore play a major role in the mobility system, particularly due to their ability to access areas inaccessible to taxis and public transport. Against a backdrop of high unemployment, the motorbike taxi sector is also a major source of employment for many Cameroonians. However, motorbike taxis also cause many negative externalities, including poor road safety. Few drivers have driving licences, insurance, registered vehicles, number plates, operating licences or protective equipment. For the majority of motorbike taxi drivers, these documents are impossible to obtain because they do not have an identity card. Some drivers provide paratransit services as a second job in addition to their primary source of income. As a result, many drivers receive no training and often find themselves in very precarious situations.

The diversity and sheer number of people involved in the motorbike taxi sector means that the sector is fragmented and difficult to organise. At present, there is very little control on the part of national and local authorities; due to a lack of financial and technical resources, they are unable to regulate either the quality or quantity of services. The lack of any real barriers to market entry has led to a profusion of motorbike taxis, exacerbating competition between drivers and encouraging them to engage in dangerous practices (not respecting the highway code, aggressive driving, carrying multiple passengers at a time). As most drivers are not registered, the public authorities in Douala have decided to penalise drivers who break the law.

Taking paratransit operators out of the informal sector

To reduce the negative externalities caused by motorbike taxis in the region, the Douala Urban Community (DUC) has undertaken an action programme to restore confidence in the sector, recognise its role in the mobility system, and improve working conditions and quality of service. To achieve this, in 2017 the DUC embarked on an action programme to promote the formalisation of the motorbike taxi business. This programme has two main objectives. Firstly, the DUC intends to count and register drivers in order to quantify the actual services offered and to establish a digital paratransit database. Secondly, the programme aims to give drivers the opportunity and the necessary resources (particularly financial) to obtain all the administrative documents required to operate a motorbike taxi service (a National Identity Card, an A licence, and a vehicle registration). Drivers carrying out these administrative formalities are issued with a uniform with their registration number and a colour specific to the district or area within which they are authorised to operate. This programme came to fruition in autumn 2017 with the Annual Douala Mototaxi Awareness Seminar, entitled "Mototaxis – from the informal to the formal!". The event brought together many public and private stakeholders in the sector, including 3,000 drivers. In all, the programme will have resulted in the registration of around 10,000 drivers in the country, that is, around 10% of the workforce in Douala. As a result, only a minority of drivers have been formalised under this scheme, while the vast majority continue to operate outside of the regulations.

Nevertheless, the programme has had a number of positive outcomes. First of all, nearly 10,000 drivers have seen their situation improve by obtaining legal status to operate and, as a result, are at least partially out of the informal sector (reduced risk of corruption, ability to access other jobs, banking, and social insurance). A follow-up programme has also been established to help drivers acquire driving licences. Lastly, this programme has enabled dialogue to be re-established between motorbike taxi drivers and the Douala Urban Community, in particular, creating a platform for collaboration between the various players in the paratransit sector, an essential prerequisite for new action programmes.

Since the municipal elections in February 2020, the new executive of the DUC has been even more committed and has stepped up its investment in paratransit, particularly through a programme to combat "urban disorder". A project to develop parking areas for motorbike taxis (called "camps") at the busiest intersections in Douala has been conceived and budgeted for (around FCFA 530,000 million). These improvements should make it possible to better handle passenger flows at the camps and reduce the accident rate by improving traffic management. In addition, the DUC intends to create a municipal maintenance centre offering drivers access to pooled resources to maintain their vehicles. Finally, in connection with the BRT project recommended under the Douala Sustainable Urban Mobility Plan (PMUS 2019), financed via the MobiliseYourCity programme, the DUC also intends to invest in a scrappage scheme designed to encourage fleet renewal and reduce the number of vehicles. Through this programme, the DUC hopes to encourage drivers to turn to new sectors of activity as part of the BRT project.

Key points		
	Objective(s) to be achieved	• formalise the sector • improve working conditions • improve service quality
	Tools	• identifying and registering operators • support and assistance with administrative formalities • fleet renewal via a scrappage scheme
	Knock-on effects	• disparity in status between "formalised" operators and those not included in the programme
	Knowledge area	• identifying operators and building a dialogue with them before introducing other reform measures

The Lagos BRT: between institutional reform and paratransit integration

Lagos	**Population**	11.8 million
	Área	1 093 km²
	Governance	
	Modes of transport	Minibuses (okadas) Bus Train Taxis
	Modal shares (2015)	Walking: 38% Okadas: 45% Bus: 1.4% Train: 1% Private car: 11% Bikes: 2% Other: 1.6%

Context: fragmented governance of the transport sector

In 1999, the Governor of the Lagos region, with the support of the World Bank, undertook a reform of the Lagos urban transport system, which at the time was suffering from a lack of mobility services, major inequalities in access to urban space, and high levels of congestion and pollution.

After many years, the creation of the Lagos Area Metropolitan Transport Authority (LAMATA) in 2002 was the crucial step in this project. Under the supervision of the Ministry of Transport, the creation of LAMATA was a condition imposed by the World Bank for the local government to obtain loans to finance a Bus Rapid Transit network. The creation of LAMATA was intended to reduce institutional fragmentation and the lack of efficiency and coordination among the hundred or so local authorities involved in regulating transport services, which fell under various ministries and local and federal governments. Until now, most of these authorities have implemented their policies and action programmes in isolation, without coordinating with others operating in the same area.

This new institution has been entrusted with a number of functions, as LAMATA is simultaneously responsible for regulation, managing major roadways, planning and coordinating of public transport projects, building the BRT network, coordinating and administrating the transport sector, as well as the financial management. LAMATA is also responsible for establishing safety standards and specifications for equipment and vehicles, technical inspec-

tions of vehicles, and operating licences. In terms of funding, LAMATA's resources come from central and federal government grants, international partners such as the World Bank and the French Development Agency (AFD), and fees collected from road users and paratransit licences.

Establishing trust and a dialogue between LAMATA and operators

One of LAMATA's first and most important challenges was to intervene within the sphere of influence of the National Union of Road Transport Workers (NURTW), a federation created in 1978 to bring together public transport companies and transport workers' unions. The NURTW was initially opposed to the BRT network, fearing that it would lead to a loss of market share for its members. To ensure the economic viability of BRT, the government wanted to protect the network from competition with the paratransit. However, with more than 1.5 million members, the NURTW was the dominant player in the Nigerian urban transport sector and had close ties with Nigerian politicians, giving it significant influence over government decisions.

An agreement was finally reached between LAMATA and the NURTW: a public-private partnership was negotiated, under which the professional organisation would become the main operator of the BRT system. Under the terms of the contract, LAMATA would provide the infrastructure, while the NURTW would purchase most of the vehicle fleet (100 buses out of 125), manage operations and maintenance, and assume all operating and commercial risks for 7 years. The agreement also stipulated that the NURTW members would be trained and employed to operate the BRT network. This accord was decisive in enabling the BRT system to be inaugurated in 2008. Before reaching the agreement, LAMATA undertook a major communication campaign and engaged in dialogue with paratransit operators in order to demonstrate that it wanted to support them and did not want to see their livelihoods disappear. After conducting a series of seminars to gather operators' opinions and identify their needs, LAMATA undertook a vast project to renovate roadway infrastructure and transport facilities (bus shelters, car parks, and depots) in order to improve working conditions for operators. This infrastructure renovation programme was decisive in the subsequent establishment of the PPP.

The Lagos BRT-lite project

It is important to note that the NURTW's political clout has also influenced certain technical and operational aspects of the Lagos BRT-Lite service. Indeed, the design and operation of the system differs from certain standards traditionally associated with BRT projects, notably in the decision to allow paratransit operators to use dedicated BRT lanes in certain areas. More specifically, this highlights the fact that the principle of non-competition between paratransit and BRT was retained, though this was certainly justified considering the lack of mobility services in the area.

According to the World Bank, the BRT network has brought numerous benefits to Lagos' mobility system:

- journey times on the completed section have been reduced by an average of 25 minutes;
- fares on the BRT section have been halved;
- PRM accessibility has been significantly improved;
- 2,000 direct jobs (drivers, conductors, ticket inspectors, mechanics) and 10,000 indirect jobs (parking management, various services, catering) have been created;
- greenhouse gas emissions have been reduced by around 13% to 20%.
- The PPP has been an important factor in the success of the project, as it has enabled the establishment of a public transport network that does not require any operating subsidies from the public authorities.

Limits of the BRT project and LAMATA

However, problems with operation and maintenance soon arose, both because of the inexperience of the operators trained by the NURTW, and because of problems with the design of the infrastructure, which led to conflicts between users, particularly regarding priority and traffic management, resulting in reduced operating speeds. These problems are primarily related to the design of the BRT infrastructure and network, as well as insufficient subsidies for operations.

With regard to the governance of the sector, the creation of LAMATA, which aimed to establish an authority capable of coordinating all stakeholders in the mobility system, is considered a success on several counts. However, there are certain limitations. Firstly, LAMATA's human (around 150 employees) and financial resources are limited and have proven insufficient to enable it to fully manage, maintain, and expand the transport infrastructure needed to meet the mobility demands of the region's growing population. It should be noted that the Lagos State government has struggled to obtain the federal budget allocations that were intended for LAMATA. Observers have also noted a lack of transparency in many of the authority's projects, which has reduced their attractiveness to international private groups, even though PPPs are one of LAMATA's preferred options for financing its projects. In addition, the excessive centralisation of resources and decision-making power within LAMATA may, in time, pose a problem or at least result in reduced efficiency. Given the size and population of the Lagos metropolis, which comprises 16 local authorities, effective governance also means relying on local authorities and strengthening their ability to manage transport operators locally.

Key points		
	Objective(s) to be achieved	• improve and diversify the quality of services • a quantitative increase in transport services • develop an integrated urban mobility system
	Tools	• formalisation of professional organisations to include operators in the BRT project • modernisation and renovation of transport infrastructure • implementation of a public-private partnership • creation of a transport authority in Lagos
	Knock-on effects	• political and economic power of the paratransit sector, opacity of decision-making
	Problem area	• fragile economic model • credibility of the new transport authority in Lagos
	Knowledge area	• Collaborative approach and financing package for the original project

The minibus renewal programme in Dakar

Dakar		
	Population	3 million
	Area	550 km²
	Governance	CETUD Communes Arrondissements
	Modes of transport	Minibuses (cars rapides) Minibuses (AFTU) Buses (DD) Trains (PTB) Taxis-clandos Coming soon: Commuter rail and BRT
	Modal shares	Walking: 70% Minibus (cars rapides): 5.9% DDD: % Train: % Taxis: 2.6% Taxis-clandos: 2.6% Private car: 3.7% 2 wheels: 0.8% Other: 2.8%

Context: pronounced urban sprawl and inadequate transport services

Senegal's capital, Dakar, is home to a population of around 3.2 million; since the early 2000s, its population growth has been twice as fast as the national average. This intense urbanisation is leading to a process of peri-urbanisation and urban sprawl, resulting in longer commutes and greater dependence on public transport. In Dakar, around 70% of daily journeys are made using public transport, which is comprised of a diverse range of public and paratransit operators.

Until the mid-2000s, public transport consisted of the public bus company, Dakar Dem Dik (DDD), operating around 600 80- to 100-seat buses on 24 routes, as well as suburban trains run by the Petit Train de Banlieue (PTB). This public transport network was supplemented by around 20,000 taxis operating under contract with regulated fares. The paratransit sector, with a fleet of 2,500 to 3,000 minibuses known as *cars rapides*, accounted for more than 80% of public transport demand in 2010. Lastly, this minibus network was supplemented by taxis known as *taxis-clandos*, operated by private individuals completely outside the law (without a licence and without paying tax).

Since the early 2000s, public transport services in Dakar have been in overall decline and are insufficient to meet growing demand. On the one hand, DDD's bus fleet has been deteriorating for several years due to strict government control over fares, which prevents the company from properly maintaining and renewing its vehicles, while the company's governance has been regularly called into question. On the other hand, the *cars rapides* are profitable enough to cover operating costs, but not enough for their owners to invest in maintaining or renewing their vehicles.

In response to the decline in the quality and quantity of public transport services across the country, in the early 2000s, the Senegalese government, with the support of the World Bank's Sub-Saharan Africa Transport Policy Programme (SSATP), embarked on an ambitious programme to finance the renewal of the fleet of *cars rapides*. The programme was supported by the Dakar Urban Transport Executive Council (CETUD), the Dakar urban transport authority set up by the Senegalese government in 1997 to coordinate the activities of all stakeholders involved in managing urban transport in Dakar.

The creation of the Dakar Urban Transport Executive Council (CETUD)

The Dakar Urban Transport Executive Council is under the technical supervision of the Ministry of Land Transport and under the financial supervision of the Ministry of Economy and Finance. This body is responsible for implementing and monitoring the application of the public transport policy for the Dakar region as defined by the national government, and for organising and regulating public transport supply and demand[1]. Though its competence is limited to the Dakar region, at the request of the national government or local authorities, CETUD can also provide assistance in the design and implementation of urban transport projects for other local authorities. It also acts as an executive agency for projects negotiated by the Senegalese State. As part of its mandate, CETUD sets routes and specifications for operators, as well as criteria for admission to the profession of public transport operator and for skills development. It draws up the fare policy, coordinates the various modes of transport, and manages the project to renew Dakar's minibus fleet in order to combat pollution. The authority is supported by a Plenary Assembly, consisting of representatives from the national government, local authorities, and the private sector, as well as a Permanent Secretariat. However, it is important to note that, unlike the national government, local authorities have very little involvement in the management of CETUD's operations.

Minibus fleet renewal programme

The aim of the minibus renewal programme is to formalise paratransit operators' activities, professionalise their operating methods, and modernise the fleet of outdated and unsafe *cars rapides*. This renewal programme is based on a scrappage bonus scheme, loans granted on the condition that owners join in professional organisations, a training programme for operators, and operating contracts establishing routes and fares. The format and content of this programme were completely new at the time, as in the early 2000s Dakar was the first city in sub-Saharan Africa to mobilise public funds to support and formalise the activities of paratransit operators.

More specifically, under this programme, with the help of a loan from the World Bank (IFC), the Senegalese government financed the purchase of new minibuses, entrusting their operation to the owners of the *cars rapides* which in return, formed cooperatives or economic interest groupings (EIGs) and took collective responsibility for repaying the loans. Government funding covered 75% of the purchase price of the new vehicles, with owners paying the remainder. Under this scheme, 14 EIGs were set up, representing a total of 245 vehicle owners. These 14 EIGs formed the Dakar Urban Transport Financing Association (UTFA), through which owners could not only purchase vehicles, but also set up support services (human resources management, maintenance, accounting, insurance, etc.). For each new vehicle purchased through the UTFA, owners scrapped an existing vehicle and received a bonus in return. The Indian company Tata International was awarded the contract to supply the minibuses, while assembly and maintenance were entrusted to the Senegalese company SENBUS.

To benefit from the programme, each EIG obtains a concession contract from CETUD which obliges the EIG's members to comply with the constraints and requirements associated with their public service mission (regularity, punctuality, comfort, safety, compliance with official fares, etc.). In return, the EIG obtains exclusive operating rights on the specified route. Vehicle owners have also received fleet management training. Drivers and fare collectors have received training in user management, vehicle maintenance, and operations (adherence to fixed routes, stops, fares, issuing tickets, ending the practice of solicitation). These contracts give CETUD the right to monitor the provision of services and oblige operators to provide CETUD with operational and financial data.

[1] Nonetheless, it is important to specify that CETUD is not authorised to issue operating permits for minibuses and is not a signatory to the agreement with DDD.

Introduction of ticketing and salaried employment

The introduction of a ticketing system is one of the project's key innovations. While the operation of *cars rapides* is based on the "target system", the introduction of ticketing within the UTFA network makes it possible to ensure revenue is traceable and to introduce salaried employment. When a passenger boards the vehicle, the ticket collector issues a ticket indicating the route for which the passenger has paid. These fare collectors are recruited by the vehicle owners, who also employ ticket inspectors to check that there is no fraud. The inspectors are employed by the *Centre d'Appui à la Professionnalisation des Transports* (Support Centre for the Professionalisation of Transport), known as CAPTRANS, which was set up under the minibus renewal programme to pool management of operations. Until relatively recently, fares were paid exclusively in case; for the last few years, however, cashless payment for UTFA bus fares has become more common, supported by several digital payment operators (Transpy, Amarante, Sudpay).

Proceeds from ticket sales are paid back to the vehicle owners. This system is consistent with the logic of salaried employment: the driver has a guaranteed monthly salary (the average salary is FCFA 80,000), as well as a fixed daily bonus of FCFA 2,000 (for all drivers); in some cases, drivers may also receive a share of the profit as a bonus. The fare collector is also paid directly by the vehicle owners; the average salary is FCFA 60,000. Drivers and passengers must also be covered by a Transvie mutual insurance scheme.

Evaluation of the programme

The programme got off to a slow start, as owners were reluctant to form EIGs and to use minibuses made by a manufacturer not yet known in Senegal. On the other hand, the 25% down payment imposed by the World Bank was considered unachievable for owners with limited financial resources. This obstacle was subsequently resolved, creating a mutual insurance scheme to provide additional coverage. Nevertheless, the first tranche of vehicles was delivered in December 2005; after more than a decade, the results of the programme are quite remarkable: 65% of the fleet has been replaced in three successive phases, and CETUD is currently preparing the fourth phase. The UTFA's services are popular, representing 36% of public transport journeys, while surveys carried out in 2015 by CETUD indicate a route and fare compliance rate of around 97%. More broadly, the modal share of regulated transport (UTFA, DDD, PTB, city taxis) has risen from around 20% at the end of the 2000s to over 50% today.

However, the level of service offered by regulated operators is still insufficient to meet demand: journey times are too long, operating hours are too short, and frequencies are too low; the productivity of each vehicle is limited, and many parts of the city are still not served by regulated transport. Overall, this programme, which is based on a scrappage scheme, has not increased overall public transport capacity. It should also be noted that the UTFA does not systematically provide data on its operations, which has forced CETUD to commission specific studies to monitor operators. In terms of working conditions, the move towards salaried employment and the introduction of social insurance coverage are helping to improve working conditions. However, in practice, not all owners comply with the conditions imposed as part of the renewal programme. One of CETUD's current initiatives concerns the development of a professionalisation scheme that would make membership in CAPTRANS, MECTRANS (a mutual savings scheme), and Transvie compulsory. Lastly, CETUD is unable to guarantee the monopolies on particular routes granted to the EIGs, which face illegal competition from *taxis-clandos* and *cars rapides*. This competition calls into question the operational and financial viability of UTFA and DDD operations.

Extending the programme to "taxis-clandos"

In 2015, CETUD decided to launch a new experimental initiative, known as "TATA Magic", designed to professionalise and modernise the *taxis-clandos*. The "TATA Magic" programme bears many similarities to the *cars rapides* programme, in that grouped owners into EIGs, encouraged them to replace their vehicles via a scrappage bonus and support from the public authorities in the form of bank loans, and imposed service quality obligations (regularity, comfort, safety, official fares) under concession contracts for each route allocated to the EIGs. The programme initially involved around twenty 8-seater TATA Magic vehicles allocated to two EIGs. More spacious and comfortable for users, these vehicles can carry more passengers, thereby providing more revenue for operators. An umbrella organisation bringing together the EIGs was created, called the Suburban Taxi Network.

Passengers' enthusiasm for this new type of vehicle and the satisfaction expressed by owners – who have improved their operating results – has encouraged CETUD to extend the programme to a fleet of around a hundred units. By the end of 2016, 101 TATA Magics were already operating in the departments of Pikine and Rufisque, with two other EIGs created when the fleet was increased. CETUD was tasked with approving routes, defining the minimum number of vehicles on each route, and providing initial training for operators and their employees. With CETUD's support, an electronic ticketing system was set up by the EIGs, making it easier to manage revenue and obtain data for planning purposes. The pilot project has had a number of positive effects in terms of organising operations, managing revenue, and reducing competition. However, the drivers are not salaried and do not have social insurance coverage, while the *taxis-clandos* continue to operate in competition with TATA Magics. Nevertheless, in October 2019, CETUD decided to extend the programme to the whole Dakar area to continue the replacement of the *taxi-clandos*.

Key points		
	Objective(s) to be achieved	• Improving service quality • Increasing transport services • Formalising the sector and improving working conditions • Improving air quality
	Tools	• Creation of professional organisations and pooling of resources among operators • Renewal of the vehicle fleet with scrappage incentives and loans on favourable terms • Professionalisation of operators and social insurance
	Knock-on effects	• Competition between paratransit services (UTFA) and informal transport services (*taxi-clandos*) • Difficulties in monitoring and evaluating the fleet renewal programme and operators' activities
	Problem area	• Lack of profitability on some routes, requiring reconsideration of the business model, at the risk of not serving less lucrative areas • No (or insufficient) quantitative increase in supply
	Knowledge area	• Creation of a virtuous circle between operators and CETUD • Dynamic vision of the sector: gradual introduction of measures and tools to support reform of the sector, inclusion of new transport services • Systemic vision for the sector: modernisation of the sector through the professionalisation of operators

In Shanghai, initiatives to help paratransit operators to improve access to outlying areas

Shanghai		
	Population	27.8 million
	Área	6 340 km²
	Governance	City and province 17 districts 114 towns 3 cantons 103 sub-districts
	Modes of transport	Trains Metro Tram Bus Ferry
	Modal shares	Walking: 24% Public transport: 33% Private car: 27% Bikes: 16% Other: 1.6%

Context: the rise of commuting in China

Urban mobility supply and demand in Shanghai was particularly low throughout the Maoist period. The social and professional lives of the city's inhabitants were centred around *danwei* ("work units"), which played a considerable role in everyday mobility practices. Workers generally lived and worked at the *danwei*, which also provided essential services (meals, health care, childcare, etc.). As a result, the vast majority of residents lived and worked in the same place and thus moved around very little on a daily basis. In this context, public transport services were virtually non-existent in most Chinese cities, and cycling was widespread. By freeing individuals and businesses from the constraints imposed by the Maoist regime, the reforms implemented in China in the late 1970s led to an explosion in mobility, whether geographical, professional, or residential.

The emergence of mobility services in Shanghai took place in a context of rapid growth and urban sprawl. This process led to a sharp increase in overall mobility and longer journeys, at a time when the government's industrial policy encouraged a transition from a city of bicycles to a city of cars. To compensate for the lack of public transport, the municipal authorities initially encouraged the development of taxi companies *(zuzhu qiche*) from the late 1980s onwards. These publicly owned companies experienced exceptional growth in their vehicle fleets in the first half of the 1990s.

This growth in travel demand also led to the emergence of ad hoc transport services, called *banche*, which developed primarily in the outskirts of cities. There are three types of these services:

- independent operators' contract with the residents of a given area to provide them with a bus service to and from work. These public transport services are thus private and not accessible to everyone.

- hypermarkets have also introduced public shuttles linking residential areas to shopping centres.
- independent operators also run minibus services, albeit on an informal basis, as this sector – which does not officially exist – is not regulated.

Since the early 2000s, in order to adapt to the city's rapid growth and cope with the increase in road traffic, the Shanghai government has undertaken an enormous programme to develop bus services and build metro lines, which have gradually changed the structure of the public transport system. However, the development of the public bus and metro network has not alleviated the high demand for travel; on the contrary, the pressure on public transport has intensified. In response to this growing demand, the authorities have launched a number of action programmes aimed at capitalising on paratransit services.

A subsidy programme for paratransit services

In 2011, a public transport development strategy was introduced, the "last mile project", which aims to grant short lines in isolated residential areas to private paratransit operators in order to improve access to the metro network for the residents of these areas. The *banche* operators still set their own timetables, frequencies, and routes, but they do receive government subsidies to cover some of their operating losses. Between 2011 and 2012, almost a hundred operating concessions were awarded to *banche*. However, the subsidies are still very low: operators only provide services at peak times, and there are still not enough (in terms of both frequency and capacity) to meet demand. Some "residents' committees" – the lowest level of government in China's administrative structure – have also contracted services to the *banche*. Many residents' committees are now issuing calls to tender for independent contractors to provide shuttle services. The services expected from the provider are defined via a participatory process involving residents, who play an active role in planning the service.

However, there is still no legislative or regulatory framework for these transport services organised by residents' committees, which operate in parallel with public transport services, without any real integration. Furthermore, in the absence of regulation, operators use old vehicles to reduce operating costs, most drivers are not trained, and many shuttles do not have official passenger transport permits. The use of paratransit services in Shanghai therefore seems to be a temporary solution to compensate for a lack of supply, and will probably be replaced by conventional transport services.

Key points		
	Objective(s) to be achieved	• Increasing transport services • Improving accessibility in neighbourhoods not served by high-capacity modes of transport
	Tools	• Public authorities take on some of the commercial risk via subsidies
	Knock-on effects	• Poor quality of service • No off-peak transport services • Insufficient subsidies to attract enough operators
	Problem area	• Insufficient regulation
	Knowledge area	• Definition of specifications by users themselves

In Kigali, the regulation of minibuses and mototaxis by creating competition FOR the market, and not ON the market

Kigali		
	Population	2.2 million
	Area	809 km²
	Governance	City/Province 3 districts 35 sectors
	Modes of transport	Motorbike taxi Minibus Shared taxis Bus
	Modal shares	Walking: 52% Public transport: 16% Cars and 2-wheelers: 32%

Context: RURA, a highly independent transport authority with the resources to reform the sector

In 2001, the Rwandan government created the Rwanda Utilities and Regulatory Authority (RURA), responsible for regulating public services on a national scale. Following its creation in 2001, RURA undertook a series of reforms aimed at fundamentally transforming the operation of the public transport system in Kigali. The approach adopted by RURA to regulate the Kigali urban transport market was to move from a system based on competition *on* the market to one based on competition *for* the market. RURA's objective was not to eliminate paratransit or to create a public transport company from scratch, but to encourage operators to become more professional and to improve services by granting them a monopoly.

As Rwanda has a highly centralised political system, most decisions affecting its capital, Kigali, are taken at the national level. This logic of centralised authority also prevails in the urban transport sector. However, the City of Kigali is involved in regulating the sector: the city's engineering department is responsible for much of the management and maintenance of urban public infrastructure, such as roads, bus shelters, and pavements. The level of

independence and autonomy enjoyed by RURA remains quite unique and largely explains the ambitious reforms it has carried out. It has its own budget, its own board of directors, reports to no ministry, and is accountable only to the executive branch of central government.

Urban transport reform: modernising the fleet and organising competition for the market

From 2003, RURA undertook a series of reforms that profoundly altered the urban transport market. First of all, it required operators to obtain a licence to operate in Kigali. Shortly afterwards, new requirements and conditions for obtaining these licences were introduced (annual technical inspections, installation of safety equipment and meters, visual identification of vehicles). In 2010, the RURA banned the import of minibuses into the country and simultaneously required operators to withdraw their fleets of the vehicles, which were considered unsafe and unreliable and contributed to congestion, and to equip themselves with higher capacity vehicles. Minibuses were banned altogether on major routes and were gradually withdrawn from secondary routes in favour of vehicles with around 30 seats. As a second step, RURA has also withdrawn 30-seater vehicles from main routes, in favour of 70-seater buses.

In 2013, RURA undertook a new series of reforms based on the recommendations of the National Transportation Master Plan. The central element of the 2013 reforms is the division of Kigali into four transport zones. These zones were then awarded through a tender process to four operators who were granted concession contracts for a period of 5 years. This model of regulation and of competition for the market was inspired by the system developed in Singapore: the city was divided into two distinct areas served under concession contracts, which enabled the local authorities to control operators more effectively and impose quality of service requirements. Following the same logic, RURA made the award of operating monopolies conditional on requirements in terms of routes, fares, frequency, and visual identification of vehicles. It also introduced a system of incentives and penalties to encourage operators to comply with the specifications. Finally, it demanded that speed governors be fitted to every vehicle to improve road safety.

The role of ICT in urban transport sector reform

Investment in Information and Communication Technology (ICT) is central to Rwanda's economic development strategy. For several years, the Rwandan government has been investing massively in the development of infrastructure and the provision of online services to improve citizens' access to essential services. In the urban transport sector, RURA and the municipality of Kigali have required Kigali operators to equip all their vehicles with free Wi-Fi access, as well as a "tap-n-go" ticketing system deployed by the AC Group. The local authority has also installed an information system at bus shelters, with screens providing real-time information on timetables, routes, bus locations, and waiting times.

Regulation of the motorbike taxi sector

The motorbike taxi sector was also reformed. Faced with a high number of applications and the fragmentation of the industry, RURA initially suspended the issue of motorbike taxi licences to private individuals and reserved the allocation of these licences to drivers who were members of a company or cooperative. This reform led to the creation of motorbike taxi cooperatives such as the Rwandan Federation of Motorbike Taxi Operators (Ferwacotamo). Regulation of the motorbike taxi sector in Kigali is now based on a system quite similar to that implemented in Douala, Cameroon and in Olongapo City in the Philippines. The city of Kigali has been divided into several zones,local RURA offices issue motorbike taxi drivers with operating licences and numbered protective vests, with a specific colour for each zone. Each year, RURA defines the number of operating licences it allocates to each district of the city. That makes it easy to check that drivers are working within their zone while reducing internal competition.

A somewhat limited approach to regulating the sector

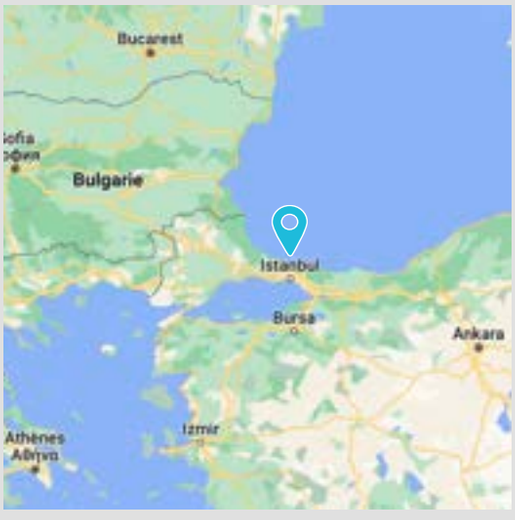
These reforms have had a number of beneficial impacts on Kigali's mobility system. In particular, they have led to a significant increase in the number of public transport passengers (from 250,000 in 2013 to 450,000 in 2016), while the number of lines in Kigali's public transport network has almost doubled, from 42 in 2013 to 78 in 2016. RURA's method of regulating minibuses nevertheless has certain limitations, in particular the division of the city into four zones and the ability of operators to balance profitable and unprofitable routes within their zone. In addition, RURA has imposed fleet renewal requirements on operators without providing financial support or subsidies, but by making it easier to obtain bank loans, the interest rates on which remain high (around 20%). The acquisition of new vehicles was made even more difficult by the fact that some operators had not yet paid off their existing vehicles. As a result, operators have been forced to reduce the frequency and level of service in certain areas.

As the first generation of contracts came to an end, an economic analysis of the network was carried out by Transitec, ODA, and GoMetro under the aegis of the Ministry of Transport, RURA, and the City of Kigali in anticipation of renewed calls for tender for transport services in the four Kigali zones. The aim of this second generation of contracts is to increase the modal share of public transport by improving the frequency of service, overhauling the fare structure, improving the management of road and pedestrian traffic to increase the operating speed of buses, and improving support for private operators to renew their rolling stock. To reduce operating costs without subsidising operators, the consortium responsible for the economic analysis proposed that RURA and the city of Kigali invest in the creation of municipal depots and maintenance centres and that the supply of spare parts for vehicle maintenance would be subsidised. Finally, the city of Kigali is playing an increasingly important role in regulating the sector. For example, it is behind major initiatives such as the "car-free day", the establishment of pedestrian zones, the creation of bus-only lanes, and the funding of studies on a planned BRT network.

Key points		
	Objective(s) to be achieved	• Improving the quality of paratransit service • Improving safety conditions • Professionalising the paratransit sector and reducing competition between operators
	Tools	• Regulation through licensing and setting specifications • Fleet renewal and a ban on vehicle imports • Creating concessions and awarding monopolies • Introduction of a ticketing and SAEIV system
	Knock-on effects	• Decline in transport services • Reduction in the number of operators
	Problem area	• Poor assessment of operators' business models, better accounted for in the second phase of reform • Insufficient support for local operators from the authority responsible at the national level
	Knowledge area	• Modal shift of some city residents following improvements in service quality • Competition for the market, not on the market

In Istanbul, the failure of a programme to consolidate operators and integrate services

Istanbul		
	Population	14.8 million
	Área	2 650 km²
	Governance	Municipality 39 districts
	Modes of transport	Metro Light rail Tramway Funicular Suburban trains Ferries
	Modal share	Non-motorised transport: 49% Private transport: 15% Public transport: 36%



Context: fragmented transport services provided by the private sector

Istanbul's mobility ecosystem encompasses a wide variety of public transport services. Most of these services are provided by private operators, accounting for 93% of public transport services in Turkey's economic capital in 2012. There are three types of service: *dolmus* (8-seat shared taxis), minibuses (23 seats), and school transport and company shuttles operated by private companies.

The *dolmus* offer a good quality of service, both in terms of journey times and comfort. Fares, routes, and time-tables vary, as drivers wait until their vehicles are full before starting the journey *(dolmus* means "to be full" in Turkish). The range of services is extensive at peak times and very limited at off-peak times. Most vehicle owners are self-employed, have little capital, and belong to a single chamber of paratransit operators, the Esnaf Odasi, which also represents taxi drivers. On each route, the vehicles have a more or less uniform visual identity to inform passengers of their destination.

Minibuses, on the other hand, are larger vehicles that offer a poorer quality of service. Often, drivers drive dangerously and ignore traffic rules. The service quality is mediocre, as the vehicles are overloaded, the operating speed is low, and the routes are excessively long, to capture as many customers as possible. Passenger information is often illegible, while the services, which are primarily concentrated on the most profitable routes, compete directly with public transport.

The programme to professionalise and integrate minibus services

In the early 2010s, the municipality of Istanbul embarked on a process of formalising the minibus sector through a programme to organise operators into cooperatives. The government's intention was to integrate public and private services by setting a common fare for public transport and minibus services, using a single ticket. An intelligent transport system was implemented to provide users with real-time route information via variable message signs installed at bus stops and on vehicles. The programme also included the provision of deposit and maintenance facilities so that owners could store and maintain their vehicles. To improve road safety, a training programme was to be offered to minibus drivers, along with a package of social benefits intended to improve their living and working conditions (medical and social insurance, etc.). Finally, there were plans to optimise minibus routes to relieve congestion on main roads, improve spatial coverage, and reduce competition with public buses. At the same time, an increase in the quantity of transport services was planned. As part of the operator consolidation programme, the cooperatives were responsible for pooling revenues and costs, purchasing and maintaining the vehicles, and managing staff. These organisations were also supposed to obtain operating concessions for specific routes, while the system of individual operating licences granted to a single owner was to be abandoned.

The limits of the programme

This programme of grouping operators has reportedly produced relatively few conclusive results in Turkey. Only a minority of them have joined cooperatives, and they mainly play a political role, opposing reform and lobbying on behalf of their members. Among the obstacles to reform is the fact that the authorities have frozen the allocation of individual operating licences for several years. Since then, these licences have been the subject of speculation, and any plans to revoke them have been met with fierce opposition. Only a few cooperatives on the outskirts of Istanbul and in secondary cities have reportedly succeeded in encouraging operators to pool vehicles and revenue.

Key points		
	Objective(s) to be achieved	• Improving service quality • Integrating various public transport services • Professionalisation of the sector • Improving service
	Tools	• Grouping operators into cooperatives and social insurance for operators • Concession contracts to replace operating licences • Fare integration across different services • Providing passenger information • Providing infrastructure (parking spaces, maintenance centres)
	Knock-on effects	• Refusal to give up individual licences because of their value, linked to quantitative regulation of the sector • The cooperatives created under the reform represent only a small proportion of operators
	Problem area	• Undemocratic operation of the professional organisations that have been established

In Freetown, institutional and operational reform of paratransit

Freetown	**Population**	1.5 million
	Área	189 km²
	Governance	Municipality
	Modes of transport	Minibus Shared taxis Motorbike taxis Rickshaws Bus
	Modal share (motorised)	Minibuses: 23% Cars and 2-wheelers: 18% Shared taxis: 22% Motorbike taxis: 13% Rickshaws: 12% Bus: 12%

Context: A mobility system dominated by paratransit

With almost 85% of the market, the private sector is the main provider of public transport services in Freetown, the capital of Sierra Leone. The mobility system is made up of four main types of paratransit services:

- *poda-poda* are minibuses carrying around 15 passengers, accounting for 28% of trips
- shared taxis also account for 28% of trips,
- *okadas* are motorbike taxis, accounting for 16% of trips,
- *kekes* are three-wheelers, accounting for 14% of trips.

Okadas and *kekes* are the modes of transport that have experienced the strongest annual growth (20% over the last 10 years), due to the low vehicle acquisition costs, their ability to serve areas of the city inaccessible to cars, low barriers to market entry, and high unemployment. The Sierra Leone Road Transport Corporation (SLRTC) is the local public transport company, providing around 9% of public transport journeys. In recent years, SLRTC's productivity and revenues have declined significantly. The reason is the low fares imposed by the government at a time when the company is facing rising fuel costs and a reduction in its fleet for maintenance reasons.

The paratransit sector is organised around associations and unions representing the owners of each of the various modes. These associations are themselves organised around specific routes and are generally based around a station or terminus. Each route is operated on a *fill-and-go* basis to share the market among operators. The fare charged for each line is generally controlled by the government after negotiation with the associations. However, when fares are kept too low, operators shorten or modify routes. These transport services are not integrated, and the revenue collected is not centralised. No transport services other than those provided by the SLRTC issue tickets.

Fragmented public governance

From an institutional point of view, governance of the sector is atomized and fragmented among several overlapping and uncoordinated public stakeholders. Several government ministries and departments are responsible for planning, financing, managing, implementing, and enforcing regulation in the urban transport sector.

The main public stakeholders in the transport sector are:

- the Ministry of Transport and Aviation (MOTA), which has overall responsibility for planning and policy;
- the Ministry of Works (MOW), responsible for the construction and maintenance of the main road network via the Sierra Leone Roads Authority (SLRA);
- the Sierra Leone Road Safety Authority (SLRSA), responsible for issuing permits to all vehicles and drivers, and for traffic management;
- the Sierra Leone Road Transport Corporation (SRLTC), the public bus operating company;
- the Freetown City Council (FCC), responsible for providing commercial vehicle depots, designating parking areas, and regulating parking;
- the Sierra Leone Police, responsible for monitoring operations and enforcing regulations;
- the Road Maintenance Fund Administration (RMFA), which oversees the management of funding for periodic and routine road maintenance, while the Ministry of Finance (MOF) provides policy guidance on tolls.
- Two government bodies, the SLRA and the RMFA, collectively manage all classified roads. At national level, the RMFA is primarily responsible for strategy as well as planning, monitoring, and financial management in the sector. The SLRA is responsible for carrying out works, including procurement, warranties, and engineering on the primary network.
- In 2019, with the support of the World Bank, the public authorities undertook a project to reform institutions and formalise the paratransit sector. The project has both governance and operational components, the main objectives of which are to optimise and modify routes, replace vehicles, and improve infrastructure.

Institutional reform: creation of a Transport Organising Authority and participation of all stakeholders in the sector

The aim of the institutional reform is to give the public transport company, SLRTC, the role of national transport organising authority, thereby unifying all the powers and responsibilities relating to regulation of the transport sector. Ultimately, the SLRTC aims to bring together representatives of the various ministries, agencies, and local authorities, as well as private operators and the non-profit sector (associations of businesses and passengers). As such, decisions will have to be taken in agreement with representatives of the local transport ecosystem and its users. The plan places particular emphasis on the inclusion of private stakeholders and civil society in the decision-making process and in the implementation of regulations. The SLRTC will no longer serve as the local transport operator and will transfer its assets and rolling stock to the Freetown City Council. Its role will then be to award public contracts, monitor and evaluate operating concessions granted to private transport operators, and define service quality requirements for these operating concessions.

Operational reform: initiate a process of formalising transport operators and replacing vehicles

As part of the operational reform, vehicle owners are required to form associations or create companies in order to obtain concessions from the SRTLC to operate routes. They must also agree to comply with certain standards and objectives for service quality, to be defined jointly by the SLRTC and the associations. A pilot project is currently being rolled out on Freetown's two main transport corridors. On each of these two corridors, concessions for three different routes will be awarded to different associations. To help these associations comply with the specifications, the SLRTC first embarked on an ambitious programme aimed at significantly improving the urban transport environment by investing in a number of infrastructure, equipment, and service projects (bus stations and terminals, bus stops, pedestrian bridges, depots, and maintenance centres), including dedicated public transport lanes, improvements at intersections, and restrictions on HGV traffic. The public authorities have thus taken the first step and have demonstrated their desire to support paratransit stakeholders and to assist them in their processes of formalisation and improvement.

The second part of the pilot project aims to create an integrated fare system, in particular to help operators renew their vehicle fleets. The main challenge is to move from a disorganised, cash-based payment system to a centralised, cashless payment system. To achieve this, the SLRTC plans to enter into a contract with an independent private company that will be responsible for implementing the ticketing system, centralising and redistributing revenue to operators based on the number of kilometres covered. For the moment, the pilot project involves 250 operators, and should eventually involve 450. Regarding working conditions, subsidies granted to loss-making operators should prevent internal competition. Moreover, revenue will be distributed on a daily or semi-daily basis, as most operators find themselves in precarious situations. Finally, to facilitate the transition and limit job losses, the public authorities will offer training courses to enable operators to retrain and work in deposits and maintenance centres.

Key points		
	Objective(s) to be achieved	• Improving service quality • Professionalising the sector • Integrating various transport services
	Tools	• Replacement of vehicles • Optimisation of operations • Infrastructure improvements and investment • Redistribution of revenue among operators • Support for operators, including retraining • Improved working conditions
	Problem area	• Taking account of all operators in the sector • Analysing operators' business models • Long-term financing of the programme

In Manila, jeepneys and the Public Utility Vehicle Modernization Program

Manila	**Population**	13 million
	Área	620 km²
	Governance	City Council 6 districts
	Modes of transport	Minibuses (jeepneys) 3-wheel shared taxis Elevated metro Commuter trains Ferry
	Participación modal	Walking: 9% Public transport: 44% Private car: 45%

Background: modernising the traditional jeepney fleet

The Philippines has a population of around 100 million, over 60% of whom lives in urban areas. The metropolitan region of its capital, Manila, the country's main economic hub, is made up of 16 cities and has a population of around 13 million. In this particularly densely populated region (20,000 people/km² in 2015), and despite relatively low levels of car ownership compared with other South-East Asian countries, Manila's mobility system is primarily structured around road transport. With annual growth in the number of cars of around 7% since the early 2010s, it is the fastest-growing market in South-East Asia. The city faces particularly high levels of congestion and pollution, while the public transport services in the area are largely insufficient to meet daily travel needs.

Manila's public transport services are diversified, comprising mass transit services, public bus services, and various paratransit services. The Manila Light Rail Transit System, the mass transit network in Metro Manila, consists of just four lines and the network's capacity is subsequently inadequate given that most of the population relies on public transport for their daily travel needs. At the same time, Manila's paratransit system is made up of buses and *jeepneys*, as well as numerous taxis, motorised tricycles, and *trisikads* or *sikads*, non-motorised two-wheelers. Road transport services are dominated by *jeepneys*. The 55,000 on the road in Manila can carry between 12 and 32 passengers and account for around 40% of motor vehicle journeys. The *jeepney* sector, considered to be a cultural symbol of the Philippines, is particularly fragmented, with over 43,000 franchises issued by the authorities on more than 900 routes and 75% of *jeepney* operators own just one vehicle. This fragmentation of the sector makes it particularly difficult for the government to regulate. It is also one of the main contributors to greenhouse gas emissions in the Philippines, as well as being one of the largest providers of jobs in the region.

The Public Utility Vehicle Modernization Program

Since the mid-2010s, the authorities have embarked on a programme to professionalise and modernise the *jeepney* sector in order to reduce its negative externalities, enhance its integration with mass transport services, and reduce residents' dependence on private motor vehicles. The first reforms were initiated in 2017 as part of a partnership with the MobiliseYourCity programme. The Public Utility Vehicle Modernization Program (PUVMP), which aims to bring about major structural changes over a ten-year period (2016-2026), is based on two main objectives:

professionalising the sector and renewing vehicle fleets. The professionalisation aspect of the PUVMP programme is based on introducing concession contracts, with contractors organised into cooperatives, in order to strengthen the pooling of fleet maintenance as well as the computerisation of operations management, in particular through a ticketing system. The fleet modernisation programme involves setting standards for vehicles (age, Euro IV emissions standards or electric vehicles, capacity, safety, equipment, and on-board services), and implementing a fleet renewal programme through a scrappage bonus and a financial support scheme to help owners renew and consolidate their fleets. Ultimately, this project should enable all *jeepneys* to be gradually replaced by modern minibuses or buses.

The Public Utility Vehicle Modernization Program: A generally positive assessment

The implementation of the PUVMP began in 2018 with a pilot project on an initial experimental line. The pilot project was subsequently extended to more than twenty lines in Manila and 80 lines across the Philippines. Initial results show that the programme has helped improve operators' productivity and profitability. Each cooperative has a contract with MetroManilla, which transfers to them the revenue collected via the ticketing system on board, which then they pass on to the owners who are members of the cooperative. This new business model has changed the relationship between owners and crew members, particularly following the abolition of the *target system*. Now, each crew member receives a fixed income, though slightly lower than before. However, crews work shorter shifts, and each vehicle is used by two separate crews. This rota system has made it possible to increase the crews' hourly rate as well as the range of services, and consequently to improve the quantity and quality of service. The introduction of higher-capacity vehicles and an increase in the number of hours travelled has also boosted revenues.

Renewing the *jeepney* fleet requires significant initial investment from owners in order to acquire electric vehicles. An analysis of the financial viability of the operation conducted by the GIZ showed that for owners, the return on investment exceeded that of owners who bought traditional *jeepneys*, based on a vehicle life of 15 years. This improved return can be achieved through the financial support provided by the scrappage scheme, bank loans, and economies of scale achieved by pooling vehicle maintenance.

A successful pilot project, but difficult to replicate on a larger scale

While the programme has been a success overall, it is important to note that the twenty *jeepney* routes covered by the PUVMP are new routes, which did not previously see any service. Going forward, the programme will be expanded to cover pre-existing lines. However, funding for the expansion of the programme remains an issue to be addressed. For the moment, the financial resources invested by the government and banks can at best provide for around 14,000 new *jeepneys*.

Key points		
	Objective(s) to be achieved	• Improving service quality • Improving air quality • Improving working conditions for operators • Integration with mass transit
	Tools	• Fleet renewal and support for the purchase of electric vehicles • Professionalisation of operators and the creation of cooperatives • Establishing a salaried workforce
	Knock-on effects	• Barrier effect for operators who cannot obtain financial support from donors and local authorities
	Problem area	• A business model that is difficult to replicate and is only viable when there is no competition from other modes of transport or other operators • Cost of electric vehicles and difficulties in sustaining and extending the vehicle purchase subsidy scheme
	Knowledge area	• Increasing the available supply while improving working conditions for operators

Transjakarta and angkots: integrating paratransit into a BRT network

Jakarta		
	Population	10.5 million
	Área	664 km²
	Governance	City/ Province Provincial government 5 administrative municipalities
	Modes of transport	BRT Bus Metro Commuter trains Rickshaws Minibus (angkot) Taxis Motorbike taxis (ojeks)
	Modal shares (2009)	Non-motorised: 23% Public transport: 36% Private car: 41%

Context: A variety of modes, more or less regulated

The Indonesian transport system is particularly diverse, comprising a wide variety of conventional (minibuses, buses, BRT, metro) and informal (two and three-wheelers, minibuses) transport services. In rural areas and areas with poor road access, only paratransit services are available. In urban areas, particularly in the Jakarta metropolitan area, there are formal public transport services as well as *bemo*, *becaks*, and *ojeks*, which are operated by individuals who do not have an operating permit issued by the authorities.

- **Informal public transport**

Omprengan are minibuses operated by unlicensed operators. As a general rule, these minibuses serve fixed routes, though they can stop to pick up or drop off passengers at any time.

Bemo are motorised tricycles that can seat up to 7 people. Once authorised and subject to an operating permit system, the *bemo* are now unregulated. At the end of the 1990s, following the creation of the *angkot* services, the Jakarta government stopped issuing operating licences to *bemo* owners, and their numbers fell sharply.

Becaks are non-motorised three-wheelers with a covered front seat. The slowest mode of transport in Indonesia, *becaks* are authorised by the public authorities, though their drivers do not have operating licences.

Ojeks are motorbike taxi services that generally carry a single passenger. Though *Ojeks* account for a relatively small modal share, there are very large numbers of them. The authorities do not recognise the existence of *ojeks*, which are not officially authorised to operate and are therefore considered illegal.

- **Public transport**

Indonesian legislation classifies public transport according to whether or not there are fixed routes operated on a regular basis, making a distinction between non-scheduled transport, which operates on demand *(bajaj*, taxis, and tourist buses), and scheduled transport (Transjakarta buses, smaller buses, and *angkot* minibuses). These smaller buses and *angkot*s are 24-seater and 16-seater vehicles, respectively, operated by independent operators affiliated with professional organisations, most of which were set up in the 1970s.

From formalisation to the decline of paratransit

In the 1950s and early 1960s, Jakarta experienced significant urban growth, accompanied by a shortage of mobility services. The public authorities consider paratransit services (buses and minibuses) to be undesirable in the long term, as there are too many of them, their performance is mediocre, and they cause road safety issues. In the short term, however, they provide an essential service to meet demand, and the Jakarta municipality has therefore opted to regulate the sector by requiring operators to modernise their fleets and organise themselves into professional organisations. Operators are now required to have operating licences, and local authorities have required them to comply with fixed routes, stops, and fares and have introduced colour-coded systems so that passengers can identify routes.

Until the late 1990s, these bus services played a dominant role in Jakarta's mobility system; they generated a large number of jobs, and although vehicle ownership was fragmented, all owners were required to join a professional organisation. A common feature of both public *(angkot*) and non-public *(bemo)* minibus services is that they are operated by drivers with a high degree of autonomy. The latter do not work under the direct control of the public authorities or even of the professional organisation of which they are members. The primary form of contractual relationship between the owner and crew is the *target system*, while crews work in precarious conditions that lead them to prioritise profitability. Already strong internal competition intensified in the early 2000s, when road congestion became even more pronounced, and some city residents switched to private modes of transport (cars, motorbikes). This situation increases the pressure on operators, who then adopt dangerous driving practices.

Making the most of informal transport to improve access to the BRT network – two successful experiments

In the early 2000s, the public authorities set about developing a new mass transport network in Jakarta. This project, primarily inspired by Bogotá's BRT network, received the support of the United Nations, which encouraged and financed technical exchanges between Jakarta and several Latin American cities. The first line of the Transjakarta BRT network was inaugurated in 2004, and over the next decade, 10 new lines were built. In addition to the BRT and bus networks, a metro system has been under construction since the early 2010s, financed by loans from the Japan International Cooperation Agency (JICA). One of the consequences of this new project is that the working conditions of minibus operators have become even more difficult following the introduction of the BRT, and as new mobility services based on digital platforms have become more widespread.

In the second half of the 2010s, Jakarta's transport planning policies underwent a change: while it was previously thought that minibuses were destined to disappear in the long term, the public authorities began to consider how they could complement the Transjakarta network (particularly following a number of conflicts between minibus and BRT operators). The government then decided to invest in a reform project based on integrating the BRT and intermediate bus (24 seats) networks using the *trunk and feeder* model. This model was inspired by the system introduced a few years earlier in Guangzhou, China, and widely promoted by the Indonesian office of the Institute for Transport and Development Policy (ITDP). An initial experiment was launched in 2015 on five bus routes, most of which overlapped with the Transjakarta corridors. In the experiment, bus operators were allowed to use dedicated BRT lanes for some of their routes, then to branch off to serve areas not covered by the BRT network or to connect multiple BRT corridors without forcing passengers to transfer. All owners who had previously operated on the selected routes could take part in the trial, though their access to BRT-only lanes was conditional on purchasing new vehicle models designed to be able to run both on and off the dedicated lanes. This experiment also provided an opportunity to test a new business model for operators: from then on, Transjakarta would pay the professional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organisation to which the owner belongs a fee calculated according to the number of kilometres travelled by each vehicle. The cooperative would then redistribute these sums among its members, deducting drivers' salaries and operating costs. The crews therefore became salaried employees and were recruited by the cooperatives without the involvement of the vehicle owners.

This programme was subsequently extended to other corridors, and a second experiment with minibus services *(angkots*) was set up. The experiment involved changing the minibus routes to transform them into feeder services. These changes have been accompanied by fare integration between the *angkot* and BRT services, allowing users to use the same season ticket for both the BRT and the integrated *angkot* services. This scheme, first trialled in 2017 on ten routes operated by one cooperative, was then extended to routes operated by several other cooperatives. The integration of the two services was limited to peak hours, during which the *angkots* on the affected lines shortened their routes to serve only those segments not served by the BRT.

Transjakarta's introduction of specifications has allowed certain operational problems to be resolved, with the threat of penalties having led to improvements in service quality. In particular, the switch from the target system to a fixed remuneration system has made it possible to introduce timetables and fixed routes and to limit dangerous driving or practices such as soliciting. In addition, drivers receive driving training from Transjakarta and training on sexual harassment and protecting vulnerable passengers.

As of 2019, Transjakarta is the longest BRT network in the world (244 km) and since 2015 it has more than doubled its daily ridership to 950,000. This attractiveness is due to the successful integration of the BRT network with bus and minibus services, which has extended the network's services, accessibility, and ridership. The integration of the various services also has an impact on BRT ridership, with an estimated 20% of daily passengers coming directly from the *angkots*.

Reforms with unequal benefits for operators

For operators, participation in the first minibus trial was conditional on the purchase of new buses. This requirement created a major barrier to entry and excluded many owners with no investment capacity other than that derived from the sale of their old buses. The experience of integrating the BRT and *angkot* networks has had little impact on owners, who have maintained similar levels of income. On the other hand, crews have seen their average pay fall.

Key points		
	Objective(s) to be achieved	• Improving service quality • Regulation of the sector's various transport services • Improving working conditions for operators • Integration with mass transit
	Tools	• Fleet renewal • Integration into the BRT network: operating on dedicated lanes • Fare integration • Establishing a salaried workforce
	Knock-on effects	• Barrier effect for owners with insufficient capital • A failing business model for drivers and crews, who have seen their revenues fall
	Problem area	• Taking account of the diverse statuses and business models of operators in the paratransit sector
	Knowledge area	• Enhanced attractiveness and increased patronage of the BRT network served by paratransit services

In Mexico City, giving paratransit operators a role in the BRT network

México		
	Population	9.2 million
	Area	1 485 km²
	Governance	Mexico City 16 districts
	Modes of transport	BRT Bus Metro Commuter trains Minibus Trolleybus Tramway
	Modal shares	Non-motorised: 1.4% Public transport: 77.9% Private car: 20.7%

Background: building a diversified range of transport services in Mexico City

The development of public transport in Mexico City has been marked by several distinct periods. During the 1920s, the paratransit sector began to develop, particularly with the introduction of *peseros* (microbuses) and *colectivos* (minibuses). These services are tolerated, although not regulated, and operators are gradually organising themselves into trade associations serving specific routes or stations. In the 1950s, the government decided to create a public transport service by developing a tramway project, which quickly proved unsuitable for the city's size and rapid growth. This rapid growth in demand started in the 1950s explains the development of public and private transport services, during which the public authorities changed their position with regard to paratransit. Initially, the authorities encouraged the development of *pesero* and *colectivo* services by legalising them and giving operators' associations official responsibility for regulating the sector. The associations also allocated operating licences for the routes for which they were responsible and supervised operators providing services outside this framework; they also organised fleet operations and infrastructure use (stops and stations), kept employee records, and facilitated the introduction of shared services for operators. The number of vehicles increased over this period, from around 4,000 in 1950 to over 10,000 in 1984.

The early 1980s marked a new turning point in the construction of Mexico City's public transport system. The authorities (both national and local) then invested massively in public transport: they rolled out trolleybus networks and then invested in the construction of metro lines. In 1981, all concessions previously granted to the operators' associations were revoked and the operators were required to join a decentralised national public company, Ruta 100, which would be responsible for managing all city bus services. Ruta 100's goal was to optimise and professionalise the paratransit sector, which remained highly fragmented, and to weaken the powerful federation of operators' unions (Alianza de Camioneros), which controlled 90% of paratransit services. This transition has led to relatively little protest, mainly due to the improved working conditions for operators. The creation of Ruta 100 corresponds to a period known as the "golden age", during which all public transport in Mexico City was controlled by the government, which invested massively in the sector to increase coverage and improve the integration of services.

This “golden age of public transport”, made possible by the oil boom of the 1970s, was short-lived. At the end of the 1980s, the country was faced with a major economic crisis, which led the government to adopt austerity measures and reduce its investment in the transport system. These reforms resulted in higher fares and a rapid deterioration in supply, while unemployment rose from 5% to 15% and wages fell by an average of 65%. This economic crisis gradually led to the disappearance of the Ruta 100, which became official in 1995. Following the liquidation of Ruta 100, the public authorities adopted an approach based on deregulation, allowing paratransit to develop freely. Following the government’s partial withdrawal from the transport sector, the paratransit sector consolidated and became particularly organised and politically powerful. In 1998, the 22,000 *peseros* and 3,000 *colectivos* accounted for around 65% of all motorised journeys, while the 3,500 vehicles making up the public transport fleet represented only 12% of the modal share.

The Metrobús BRT network, a catalyst for paratransit reform

The end of the 2000s marked a new turning point in the regulation of Mexico City’s mobility system. The government adopted a new strategy based on the desire to restructure the paratransit sector by implementing a fleet renewal programme and establishing a network of exclusive rights-of-way on which high-capacity buses would run, operated by a public operator (Metrobús), but also by private operators who had previously provided paratransit services. There are also plans to establish financial compensation for operators whose licences and permits are bought back by the government. The introduction of the project was opposed by several professional organisations, which organised strikes and demonstrations, some of which were violent.

Faced with opposition from paratransit operators, the local authorities are engaging in negotiations to include operators in the design process for the BRT network to minimise conflicts and promote the integration of minibus operators into the new Metrobús network. This integration strategy is based on:

- The gradual implementation of the project and the organisation of preliminary negotiations on each corridor with all affected stakeholders.
- The decision not to use a tendering process to select the operators of the BRT network but to renegotiate the rights to pre-existing concessions with the affected associations and operators and to give them priority in the award of contracts to operate the BRT network.
- Setting up a programme to group together affected operators into one or more private operating companies.
- Granting a monopoly on operations along BRT corridors to private BRT companies.

To roll out the BRT network, the government created a new decentralised public body, Metrobús DPO, which is endowed with both planning and regulatory powers. A fiduciary fund was also set up to ensure the redistribution of revenues collected by operators based on the “number of km of services provided”. This fund also acts as an intermediary to obtain loans and finance the acquisition and leasing of buses. Having built out the BRT network,

the authorities are also creating a number of "low-emission" corridors, on which operators have been forced to organise themselves into private companies in order to introduce higher-capacity vehicles.

The limited economic viability of the urban transport reform project

The negotiation process led by the public authorities has been a success, making it possible to implement the first three BRT lines in Mexico City. However, the economic viability of the whole system is limited and relies heavily on subsidies from the government and Mexico City. The system's profitability is low, and the revenue collected does not cover all the BRT system's operating costs. In 2010, despite revenues of almost $10 million, Metrobús posted losses of just over half a million dollars. The system's commercial deficit stems not only from the unprofitability of the buses operated by the public company Métrobus, but also from the need to subsidise the network's private bus operators. In addition, Mexico City keeps fares low to ensure that services are affordable. Lastly, the project did not make it possible to modernise paratransit operators' bus fleets as originally planned, mainly because priority was given to paying compensation to paratransit operators who did not wish to join the BRT project.

Key points		
	Objective(s) to be achieved	• Structuring the urban transport sector • Integrating paratransit services into the urban transport system • Improving air quality with less polluting vehicles
	Tools	• Fleet renewal • Creation of a decentralised public body to facilitate the pooling of resources among operators • Construction of a BRT service operated by paratransit operators, compensation for others
	Knock-on effects	• Limited economic viability due to the budgetary burden of compensating operators
	Problem area	• Multiple objectives to be achieved on a limited budget
	Knowledge area	• Setting up negotiations with operators • Favouring paratransit operators to operate the new BRT network • Need to subsidise operators of the new BRT service, and compensate operators leaving the sector

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