



FINAL REPORT

# Policies for Sustainable Accessibility and Mobility in Urban Areas of Ghana

December 2018

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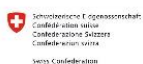
# Policies for Sustainable Accessibility and Mobility in Urban Areas of Ghana





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## Acknowledgements

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## List of Acronyms

AFD	French Development Agency
AfDB	African Development Bank
AUTP	Accra Urban Transport Project
BRT	Bus Rapid Transit
CBD	Central Business District
DACF	District Assemblies’ Common Fund
DFR	Department of Feeder Roads
DoT	Department of Transport
DUR	Department of Urban Roads (of the MRH)
DVLA	Driver and Vehicle Licensing Authority
EJMA	Ejisu-Juaben Municipal Area
GAMA	Greater Accra Metropolitan Area
GAPTE	Greater Accra Passenger Transport Executive
GDP	Gross Domestic Product
GHA	Ghana Highways Authority
GHC	Ghana Cedi
GKMA	Greater Kumasi Metropolitan Area
GoG	Government of Ghana
GPRS	Ghana Poverty Reduction Strategy
GPRTU	Ghana Private Road Transport Union
GRF	Ghana Road Fund
GRTCC	Ghana Road Transport Coordinating Council
GSGDA	Ghana Shared Growth and Development Agenda
GTFS	General Transit Feed Specification
GUMAP	Ghana Urban Mobility and Accessibility Project
GUTP	Ghana Urban Transport Project
ICT	Information and Communication Technology
IMF	International Monetary Fund
INDC	Intended Nationally Determined Contribution
JICA	Japan International Cooperation Agency
KMA	Kumasi Metropolitan Assembly
KNUST	Kwame Nkrumah University of Science and Technology
KOICA	Korean International Cooperation Agency
LGS	Local Government Service
LTNDP	Long Term National Development Plan
LUSPA	Land Use and Spatial Planning Authority
MESTI	Ministry of Environment, Science, Technology and Innovations
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
MMT	Metro Mass Transit
MoF	Ministry of Finance
MoT	Ministry of Transport
MRD	Ministry of Railway Development
MRH	Ministry of Roads and Highways
NDPC	National Development Planning Commission

NITA	National Information Technology Agency
NMT	Non-Motorized Transport
NRSC	National Road Safety Commission
NTP	National Transport Policy
PPBME	Policy, Planning, Budgeting, Monitoring and Evaluation department
RCC	Regional Coordinating Council
SCUTA	Steering Committee on Urban Transportation
SECO	Swiss Economic Cooperation and Development
SSATP	Africa Transport Policy Program
TOD	Transport Oriented Development
TSIP	Transport Sector Improvement Project
TUC	Trades Union Congress
UDU	Urban Development Unit
UPTU	Urban Passenger Transport Units
URD	Urban Roads Department (of an MMDA)
USD	United States Dollar
UTAC	Urban Transport Advisory Committee
UTM	Urban Transport and Mobility
WB	World Bank
WRI	World Resources Institute

## Executive Summary

Within the framework of urban transport and mobility pillar of the African Transport Policy Program (SSATP), the team launched an activity to support eight pilot countries (Ivory Coast, Ethiopia, Guinea, Ghana, Kenya, Nigeria, Rwanda, and Senegal) in the development of policies to improve accessibility and mobility in urban areas of Africa. Six thematic areas have been considered as priorities: strengthening the institutional framework for urban transport management, creating funding sources dedicated to the management of urban transport, promoting the effective participation of civil society in urban transport management, improving multi-modal planning and operation of city centers, improving the performance of public transport (in particular the reform of paratransit services), organizing and implementing National Government assistance for the management of urban transport in secondary cities.

In Ghana, this work has been led in close partnership with the Ministry of Transport (MoT). A diagnostic for each of the six above priority areas helped in identifying the most pertinent recommendations to be proposed to cities in Ghana. These recommendations were widely discussed on 25 and 26 July 2018 as part of the Urban Mobility Forum organized under the auspices of the Ministry of Transport. The report proposes a series of recommendations aimed at responding to main challenges in the urban areas of Ghana. The improvement of urban accessibility and mobility is a complex task, and these recommendations aim at mobilizing all stakeholders around them.

Ghana has made much social and economic progress over the past decade. As a result, it is now at a key stage of its development. It has to master the transition from a low to an emerging middle-income country and, thus, faces new and more complex development issues. One of the most important issues which Ghana needs to tackle is its rapid and inefficient urban development. Since 2000, the growth rate of the urban population has been about 4.25% so that the urban share of Ghana's population is now over 50% and is expected to reach about 65% by 2030. Urban development in Ghana suffers from many deep-seated problems. These include land use disorder and uncontrolled urban sprawl, increased environmental deterioration, inadequate urban infrastructure and services, urban poverty, slums and squatter settlements, weak urban governance and institutional coordination, and weak urban transport planning and traffic management.

A strong decentralization process is currently going on in Ghana and Ghanaian decision makers are now at a particular moment to ensure its accomplishment in what regards urban mobility. To do so, it is recommended to go through a clarification of the powers, duties and functions of the various stakeholders involved in urban mobility matters, outline the financial and fiscal arrangements, as well as the rules in accordance with which urban mobility funding is allocated and applied for; propose a clear inter-governmental relations framework for the governance and management of urban mobility matters and set out how urban mobility planning processes should align with land use planning and urban development processes.

The recommendations contained in this report identify practical action levers to ensure, from an economic point of view, the role of Accra and the country's largest cities as drivers of growth while optimizing public spending; from a social point of view, access to jobs and services for a maximum of urban households while reducing the risk of road mortality, and from an environmental point of view to put the country on a more sustainable path improving the energy efficiency of the sector and reducing air pollution.

# 1. Introduction

Urban transport and mobility is one of the three pillars of the African Transport Policy Program (SSATP), which aims to provide African policymakers with tools to develop sustainable, safe and affordable urban transport in the cities of the continent. The actions of the program thus aim to support the implementation of Sustainable Development Goal 11: "Making cities and human settlements inclusive, safe, resilient and sustainable".

To this end, SSATP has launched a program to support the development of policies to improve accessibility and mobility in urban areas of Africa, based on an empirical study of a representative sample of African cities. **This work led to the publication in June 2015 of the Working Paper No. 106 entitled "Sustainable mobility and accessibility policies in African cities" (Stucki, 2015).**

The "EASI conceptual framework", described in this document, outlines a set of specific policy actions according to four areas of intervention:

- **ENABLE:** to establish an efficient and responsible system of governance capable of anticipating needs, guiding public action and ensuring the integrated management and development of urban transport systems;
- **AVOID:** minimize the need for individualized motorized journeys through appropriate land use, planning and management;
- **SHIFT:** maintain or increase the modal shares of public transport and non-motorized transport such as walking and cycling;
- **IMPROVE:** improve the efficiency and safety of transport modes while minimizing their environmental footprint.

The specific measures proposed may be adopted by African cities on each of these pillars of intervention. The EASI conceptual framework is presented schematically below.

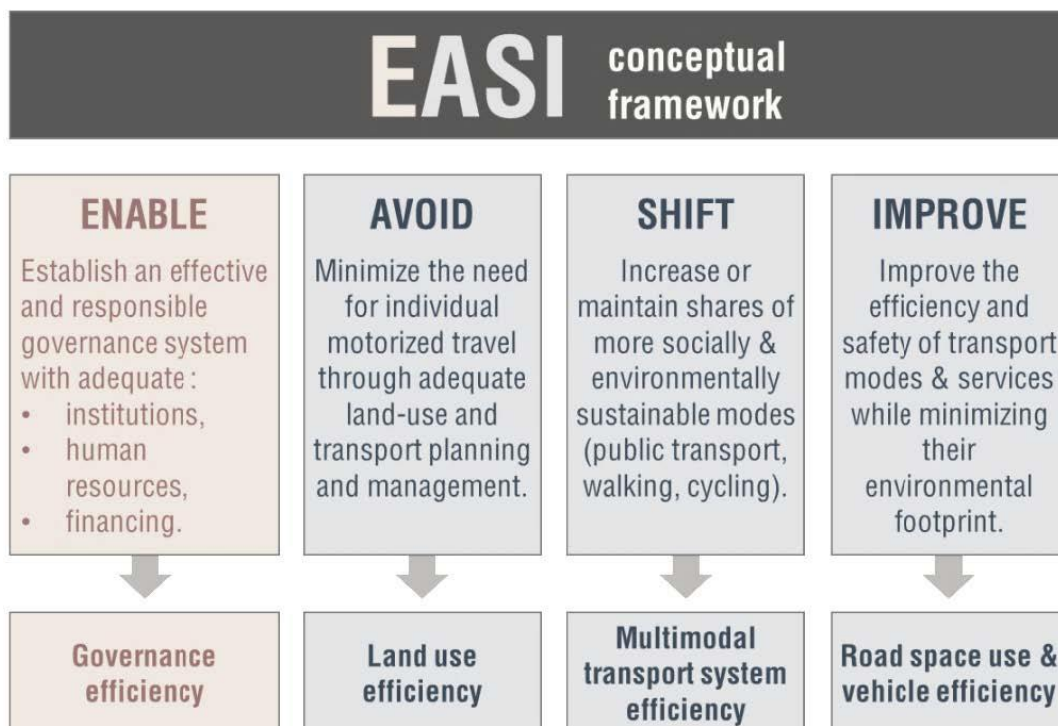


Figure 1 – EASI, a conceptual framework to guide public action towards sustainable accessibility and mobility in African cities

Following this publication, a complementary work program has been defined for the implementation of these guidelines in eight program member countries (Ivory Coast, Ethiopia, Guinea, Ghana, Kenya, Nigeria, Rwanda, and Senegal), the result of the present study.

The methodology used for these studies in the eight countries concerned was the same in order to enable cross-national comparisons and to encourage the exchange of good practices. **This study aims to bring a change in the way of thinking about accessibility and mobility, and to sensitize decision-makers for the adoption of good policies, strategies and operational practices at both the national and local levels that effectively contribute to the improvement of urban transport and mobility in African cities.**

This report therefore proposes to start with a diagnosis of urban mobility in Ghana. This was established through the experience of the mobilized experts, field visits to Accra and Kumasi, interviews with national and local political and technical leaders, as well as an in-depth analysis of the documents and data that have been collected and transmitted.

Led by the Ministry of Transport (MoT), this work focused primarily on the main issues of mobility and accessibility in Ghanaian cities by focusing on six priority areas:

- Strengthening the institutional framework for urban transport management;
- The creation of funding sources dedicated to the management of urban transport;
- Promoting the effective participation of civil society in urban transport management;
- Improvement of multi-modal planning and operation of city centers;
- Improving the performance of public transport (in particular the reform of small-scale transport);
- Organization and implementation of national government assistance for the management of urban transport in secondary cities.

This analysis led to the proposal of a list of priority recommendations, which are intended to be pragmatic and realistic, based on the EASI concept, as well as the drafting of an action plan to transform the mobility conditions for the population living in urban areas.

### Process and methodology

The process leading to the formulation of these recommendations (and of this final report), is presented schematically in the following flowchart. The Consultant started this assignment by submitting a Country Approach Document presenting the intended methodology, after carrying out a preliminary desk study of available documentation. During the first mission, this methodology was discussed with the beneficiary and the World Bank country team, who also contributed to the identification of relevant stakeholders to be consulted on the six thematic areas of the study. Interviews were conducted at both the national and the local level, and the Consultant travelled to a secondary city (Kumasi) to meet county officials. The main findings of the missions were subsequently presented to the Steering Committee for validation. The first field mission also allowed the Consultant to gather additional data and documentation, as well as to make observations on the field. Building on the rich material gathered up to this point, the Consultant prepared its draft interim report, structured in three main sections. The first section provides a general diagnosis of urbanization and mobility trends in the country. The second section narrows down the diagnosis to the six thematic areas, providing a critical and synthetic assessment of each area. Based on these findings, recommendations are formulated in the third section of the report, organized along the four pillars of the EASI framework:

- **Enable** – How to enhance governance efficiency?
- **Avoid** – How to enhance land-use efficiency?

- **Shift** – How to enhance multimodal mobility efficiency?
- **Improve** – How to enhance road-space use and vehicle efficiency?

These recommendations occupied a central place in the National Urban Mobility forum organized in Accra on 25 and 26 July 2018. Following a presentation of the study's findings, the recommendations were discussed in plenary session with high-level decision makers from the main ministries, agencies, authorities, and counties holding responsibilities in urban mobility. Break-out groups focusing on each of the six thematic areas engaged the participants in a technical review of the recommendations. This exercise was facilitated by the Consultant's team, starting with a SWOT analysis of each thematic area and continuing with a structured discussion on the proposed recommendations. The revised recommendations, amended with the inputs received, were then presented and collectively approved during the closing plenary session of the forum. The final recommendations presented in this report thus constitute the main output of the national urban mobility forum.



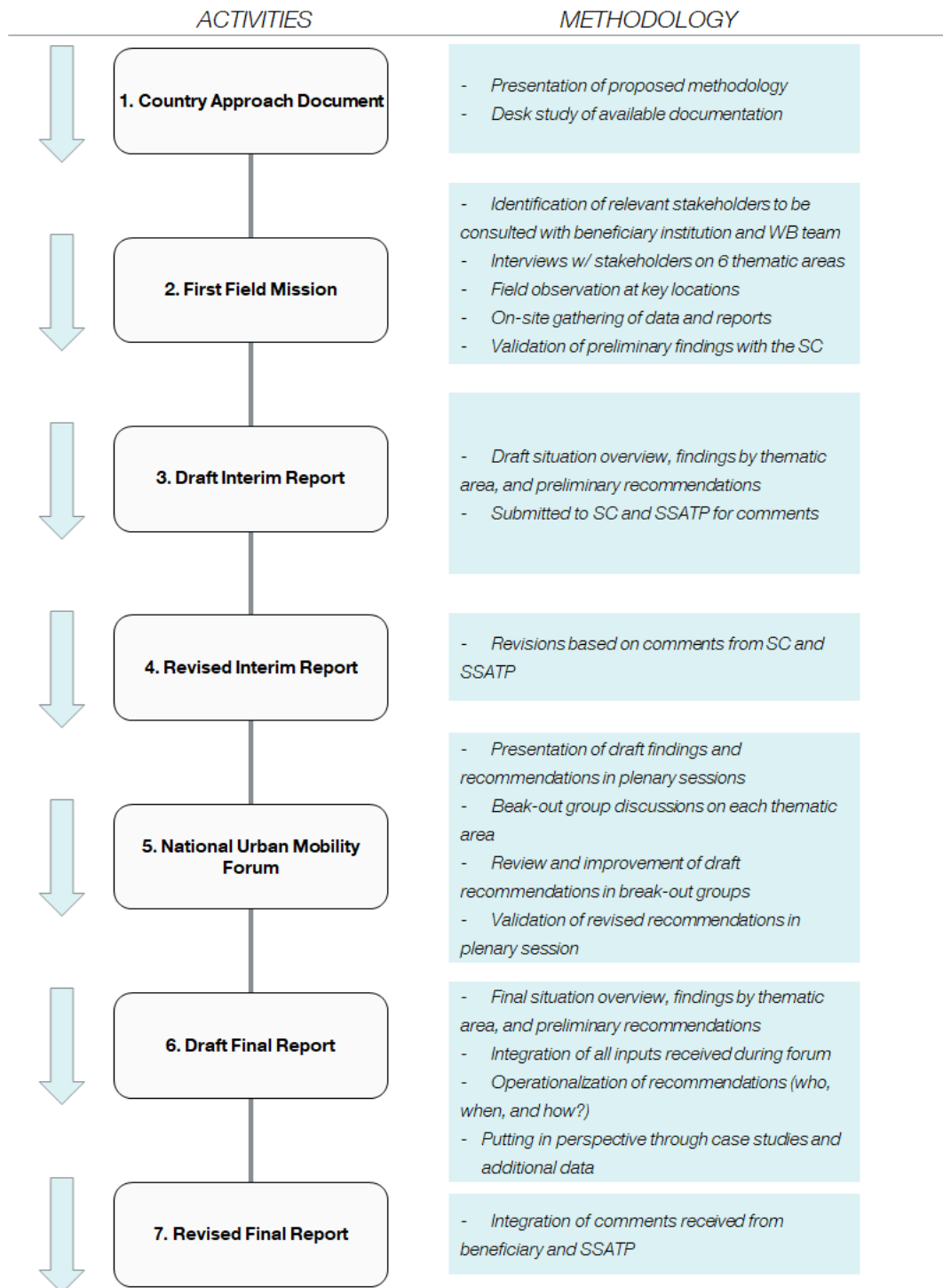


Figure 2 – Flowchart of study process and methodology

## 2. Urban mobility issues in Ghana

### 2.1 National urban development

#### 2.1.1 Rapid urbanization

Ghana is now at a key stage of its development, having progressed a lot socially and economically over the past decade. It’s ongoing transition from a low-income to an emerging middle-income country presents new and more complex development issues. Rapid and inefficient urban development is a pressing issue: The urban population has been growing at an annual growth rate of 4.25% since 2000; today, the urban share of Ghana’s population is over 50%. It is expected to reach about 65% by 2030.

The Ghana 2012 National Urban Policy Framework<sup>1</sup> presents a number of problems facing urban development: land use disorder and uncontrolled urban sprawl; increased environmental deterioration; inadequate urban infrastructure and services; urban poverty; slums and squatter settlements; weak urban governance and institutional coordination; and weak urban transport planning and traffic management.

	COTE D'IVOIRE	ETHIOPIA	GHANA	GUINEA	KENYA	NIGERIA	RWANDA	SENEGAL
<b>DEMOGRAPHY</b>								
Country population (million, 2016)	23,7	102,4	28,2	12,4	48,5	186,0	11,9	15,4
Country population projection (million, 2030)	28,1	137,1	34,2	16,2	62,8	226,9	16,7	19,6
Country density (pop. / sq. km)	75	102	124	50	85	204	483	80
<b>URBANIZATION</b>								
Urbanization Rate (% , 2016)	53%	20%	55%	38%	26%	49%	30%	43%
Urban Growth Rate (% , 2010-2015)	3,9%	5,0%	3,7%	3,5%	4,3%	4,6%	6,3%	3,6%
Urban areas with more than 300 000 inhabitants (2015)	3	2	4	2	4	42	1	1
<b>ECONOMY</b>								
GDP per capita (\$PPP, 2016)	3 693	1 734	4 293	1 966	3 151	5 861	1 913	2 567
Average economic growth rate (% / year, 2010-2015)	5,8%	10,6%	7,7%	4,5%	6,0%	5,2%	7,5%	4,1%
Poverty headcount ratio w/r to the international poverty line (2011 PPP, % of pop.)	28%	34%	14%	35%	34%	54%	60%	38%
Human Development Index (0-1 scale, 2015) 0 - low , 1 - high human development	0,47	0,45	0,58	0,41	0,56	0,53	0,50	0,49
<b>BUSINESS AND GOVERNANCE</b>								
Doing Business (Distance to Frontier, 2017) 0 - lowest, 100 - highest performance over time or "frontier"	52	46	57	49	63	48	70	49
Corruption Perceptions Index (1-100, 2016) 1 - low transparency or high corruption, 100 - high transparency or low corruption	34	34	43	27	26	28	54	45
<b>MOTORIZATION</b>								
Gazoline Price / Diesel Price (US\$ / L, 2016)	0,93 / 0,93	0,75 / 0,64	0,92 / 0,85	0,9 / 0,9	0,95 / 0,82	0,46 / 0,64	1,17 / 1,13	1,14 / 0,97
Private vehicules in use according to OICA (2015)	430 000	90 000	560 000	N/D	848 000	2 970 000	N/D	340 000
Private vehicules in use according to national data (2015)	640 000	620 000	1 950 000	N/D	1 300 000	11 500 000	N/D	470 000
	(2018)	(2016)	(2015)		(2014)	(2017)		(2015)
Motorization Rate according to OICA (private vehicules / 1 000 inhabitants, 2015)	19	1	20	N/D	18	16	N/D	23
Road Safety Casualties (nb of casualties / 100 000 people, 2015)	24	27	26	28	30	21	33	28

Table 1: Statistical Data in the eight pilot countries<sup>2</sup>

The aforementioned social and economic progress was not uniform. Good macroeconomic policies along with structural reforms and democratic institutions have underpinned strong economic growth; over the past 15 years, Ghana has experienced sustained growth with an average annual growth rate of around 7%, above the regional average for Sub- Saharan Africa. This has brought Ghana into the ranks of the lower middle-income countries with a GDP per capita ratio for 2016 estimated at around

<sup>1</sup> Issued in May 2012

<sup>2</sup> Data from World Bank, Doing Business, OICA, UNDP, UN Habitat, Transparency International, sources are detailed in appendix.

USD 1,500<sup>3</sup>. This was matched with progress in poverty reduction and in social dimensions; it is thought that Ghana has met the Millennium Development Goal of halving poverty ahead of schedule. Ghana is thus regarded as a success story on the African continent, even if economy has not shown signs of weakness recently.

Ghana already displays a number of middle-income country features such as centers of urban growth, an emerging middle class and a nascent service sector. Yet, the structure of the economy has not changed fundamentally from that of a low-income country. It remains characterized by high levels of poverty, infrastructure bottlenecks, low added value of the economy, and weak capacity of the public sector. Action is needed on many fronts to narrow the development gap and preserve past gains. Ghana needs to tackle both short and medium-term issues to firmly establish economic and social development on a sustainable path.

The urban mobility sector in Ghana suffers from a lack of available information.

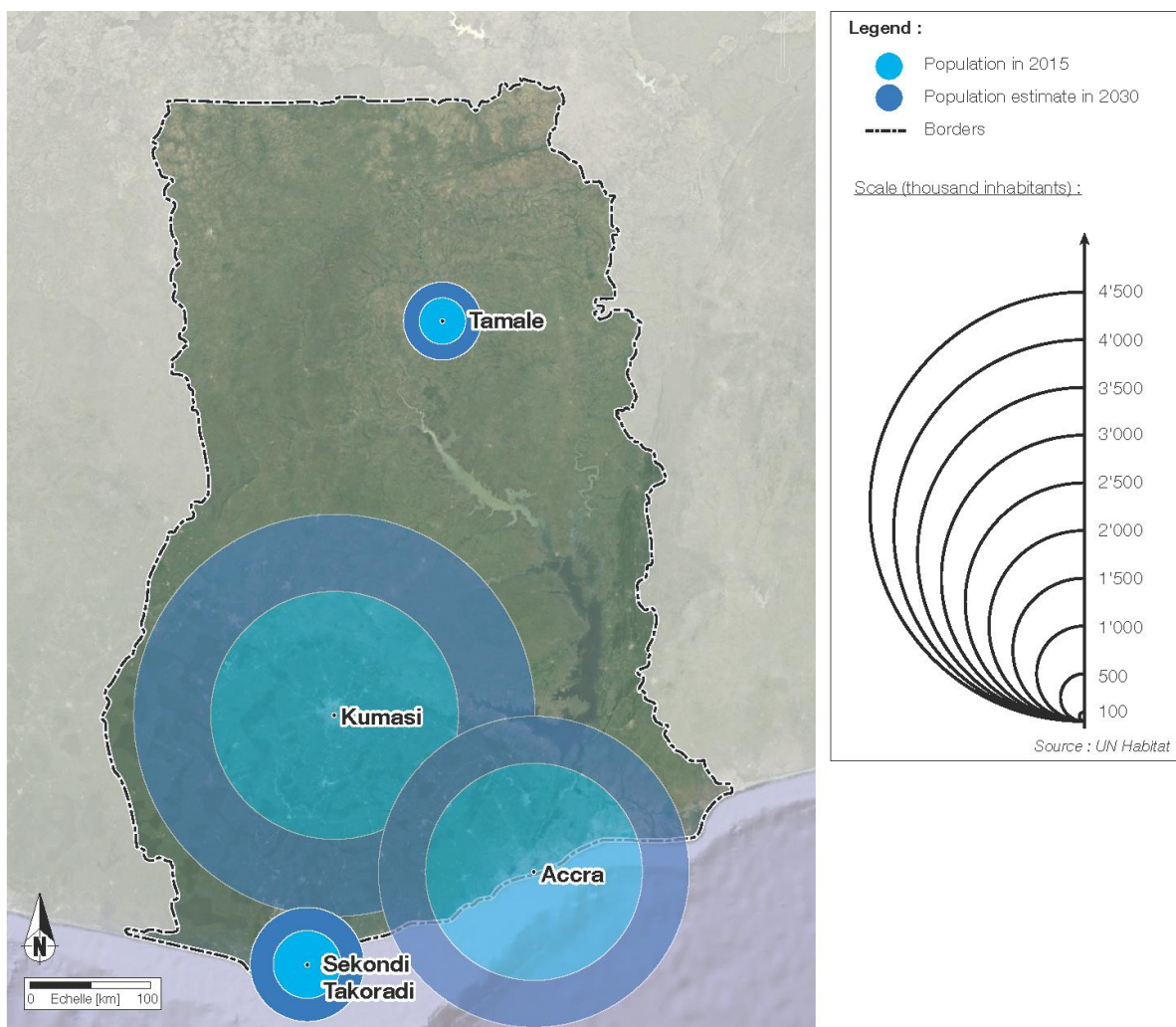


Figure 3 – Population of main Ghanaian cities 2015 and 2030<sup>4</sup>

<sup>3</sup> World Bank estimate

<sup>4</sup> Source: Ghana Urbanization Review Overview Report 2015.

## 2.1.2 A bicephalic urban structure

### Accra, a sprawling capital city

The Greater Accra Metropolitan Area (GAMA) has an estimated population of 4 million, out of which 2.3 million live in the city of Accra, the capital city. It is located on the Gulf of Guinea and on the West African Highway, a major trans-national land transport corridor connecting Dakar with the Lagos.

Since 2000 the average population growth rate in the city of Accra was about 2%, according to UN Habitat (2015). This is quite low compared with other cities in Ghana, whose growth rate of the urban population is more than double that at 4%. This can be attributed to the ongoing decentralization process, which is devolving government functions away from the capital and towards Kumasi and secondary cities. The contribution of Accra to the national economy seems to be lower than what is average for capital cities in Africa.

As in many African cities, there is a lot of mixed development in the GAMA: Commercial activities, services, small manufacturing, and warehousing are mixed with residential land use, particularly outside the central business district (CBD) and in the low to middle-income areas. These areas also have relatively high population densities. Urban development is not well organized and structured.

As a result, the urban area of Accra is sprawling very fast. Long term urban development and land use master plans have been prepared, but have serious shortcomings from a transportation point of view. A Transport Master Plan was developed for Accra in 2016 in partnership with KOICA<sup>5</sup>, but does not integrate land use with urban development. Local small-scale land use plans exist for most of the metropolitan areas, but are mostly obsolete and do not seem to include space for establishing a coherent hierarchical transport network.

Beyond the master plans themselves, there are serious deficiencies in the framework for land use planning and management in Ghana. Public authorities and others dispose of land for purposes other than what it has been zoned for by planners. This is a result of ineffective coordination, communication and harmonization between customary landholders and public planning agencies.



Figure 4 – Paratransit Vehicles 'Trotros'

There is no administrative entity governing the Greater Accra Metropolitan Area (GAMA), which is composed of thirteen local assemblies. The city of Accra (Accra Metropolitan Assembly - AMA) is the central municipality of GAMA. A process is ongoing to split AMA into 6 different municipal assemblies,

<sup>5</sup> KOICA (2016), Transport Master Plan in Greater Accra Region.

but it is not clear at the time of writing whether it will be completed. The Metropolitan Assembly of Tema, which hosts the main port, is also part of GAMA.

The excessive congestion during peak and off-peak hours is one of the dominant features of Accra. Accra's roads witness chronic and excessive congestion during peak and off-peak hours. This is a consequence of rapid urbanization, urban sprawl, an inadequate public transport system and the resulting rapid growth in private vehicles and para-transit operations. Para-transit services are operated by minibus taxis with a varying carrying capacity ranging from 12 seaters to 35 seaters, and are called trotros.

### **Kumasi, a city as big as Accra**

Kumasi is the second largest city in Ghana and capital of the Ashanti Region, and is traditionally known as 'The Garden City'. The city hosts a population of 2 million inhabitants with a growth rate of more than 4% a year<sup>6</sup>, the highest in Ghana.

The city of Kumasi is at the center of the Greater Kumasi Metropolitan Area (GKMA), which comprises the following districts: 1. Ejisu-Juaben Municipal Area (EJMA), 2. Bosomtwe, 3. Atwima Kwanwoma, 4. At-wima Nwabiagya, 5. Afigya Kwabere 6. Kwabre East. It has been described as a city without a CBD, but growing around small centers that are visible on aerial views. These centers tend to be divided, with few roads connecting them with each other compared to denser networks providing connectivity within them. As most roads are not paved, accessibility is further reduced during the rainy season.<sup>7</sup>

Economically, Kumasi is viewed as the commercial capital of Ghana, an insight that is supported by its higher growth rates vis-à-vis the capital, Accra. It hosts West Africa's largest open-air market, the Kejetia market. A local industry has emerged profiting from its surround forests and natural resources. Commercially, it acts as a main node between the dry and poor north of Ghana and the more prosperous and developed south, all south-north roads and rail links merge in Kumasi.

### **Sekondi – Takoradi, the twin cities**

Sekondi - Takoradi is the third largest metropolitan area of Ghana, which comprises twin cities and the industrial and commercial center of the region, with a population of 445,205 people and a growing rate of 4,6%<sup>8</sup> a year, between 2000 and 2010. Sekondi - Takoradi is also a port city and has timber, energy, and technology industries.

As other cities in Ghana, Sekondi – Takoradi is growing spatially at about the same rate of its population growth, meaning that little densification is taking place. Urban growth has concentrated around the Takoradi-Accra road: A remote sensing-based study conducted in 2014 revealed 75% of all expansion to have been concentrated within 2.5 km of this major artery, as it provides easy access to health, education and service facilities.<sup>9</sup>

### **Tamale, capital of the northern region**

Ghana's fourth largest city, officially called Tamale Metropolitan Area, is the capital of the Northern region of Ghana, with a population of around 275,000 inhabitants in 2010 and an annual growth rate of 3.3% between 2000 and 2010.

Economic activities in Tamale revolve around farming and trading, and are a reflection of the cities relative poverty compared with other cities in Ghana. Public transport is dominated by 'trotros' and taxis, with a large number of people using bicycles and motorbikes in the city.

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<sup>6</sup> Ghana Urbanization Review Report 2015

<sup>7</sup> Kumasi, Ghana. Critical Study Of An African Urban Structure, 2012

<sup>8</sup> Ghana Urbanization Review Report 2015

<sup>9</sup> Assessment of Urban Expansion in the Sekondi-Takoradi Metropolis of Ghana Using Remote-Sensing and GIS, 2014

	Accra	Kumasi
<b>DEMOGRAPHY</b>		
<b>Metropolitan population (million, 2015)</b>	4,0	2,6
<b>Percentage of the national population residing in the urban agglomeration (% , 2015)</b>	8%	10%
<b>Urban population growth rate (% / year, 2015-2020)</b>	3,8%	4,0%
<b>QUALITY OF LIFE</b>		
<b>Quality of life in African cities (EPFL-AMB ranking, 2017)</b>	25/100	15/100
<b>Urban mobility Index 2.0 - UITP (grade 0-100, 2014)</b>	N/D	N/D
<b>MOBILITY DEMAND</b>		
<b>Motorization rate (vehicules / 1'000 inhabitants)</b>	240	N/D
<b>Number of trips per day (million)</b>	N/D	N/D
<b>Number of motorized trips per day (million)</b>	2,7	N/D
<b>Number of motorized trips per day per inhabitants (million)</b>	0,7	N/D
<b>Average trip distance (km)</b>	N/D	N/D
<b>Modal split - Personal Vehicles (%)</b>	43%	N/D
<b>Modal split - Public Transport, including paratransit (%)</b>	58%	N/D
<b>Modal split - Non Motorised Transport (%)</b>	N/D	N/D
<b>TRANSPORT SUPPLY</b>		
<b>Number of public buses</b>	148	0
<b>Number of paratransit vehicules (taxis excluded)</b>	11 195	N/D
<b>Length of existing urban rail road and/or reserved bus lanes (km)</b>	0	0
<b>Length of planned urban rail road and/or reserved bus lanes (km)</b>	0	0

Table 2: Statistical data in Accra and Kumasi<sup>10</sup>

## 2.2 Motorization trends

Road transport is the dominant form of transportation in Ghana. Data from the Ministry of Transport of Ghana reveals 1,952,564 registered vehicles (which includes two-wheelers), in 2015. Most of these are registered in the Greater Accra Region which stands at 1,164,942 vehicles, followed by Kumasi with just 269,689. This corresponds to a national motorization rate of about 70 vehicles per 1,000 inhabitants, and 240 vehicles per 1000 inhabitants for Accra. This already high rate continues to rise, and as figure 4 shows at an increasing rate of growth.

Looking strictly at 4-wheeler registrations for private cars, OICA data suggests a vehicle fleet of about ~ 890,000, or a private car motorization rate of 32 vehicles per 1,000 inhabitants, slightly below the pan-African average of 43.

The average age of a vehicle (out of the total park including two-wheelers) stands at 14.2 years, the majority of imports are secondhand vehicles imported through the grey market, or outside of official channels. Local manufacturing of vehicles is at present almost non-existent, however recent

<sup>10</sup> Note: the growth rate for Accra population is based on census for the period 2000-2010.

investments in local-assembly capacity by international firms and associated financing mechanisms to provide access to loans indicate that local manufacturing is set to develop in the near future.

The age limit, since 1993, for importing vehicles is 10 years in Ghana. If this limit is exceeded, then the owner can import it in exchange for penalties that vary according to the age of the vehicle. This flexibility in Ghanaian law does not favor fleet renewal.

Age of imported vehicles	Penalty rate
Vehicles between 10 and 12 years old	5% of vehicle value
Vehicles between 12 and 15 years old	20% of vehicle value
Vehicles older than 15 years	50% of vehicle value

Table 3: Penalty rate for imports of secondhand vehicles

Taxes on imported vehicles have a common basis with value added tax (12.5%), the levy for the national health insurance (2.50%), the tax levy (0.50%), inspection fees (1%). Variable taxes depend on the engine capacity of the vehicles: import taxes range from 5% to 20%, taxes linked to the export development fund, from 0.50% to 1%.

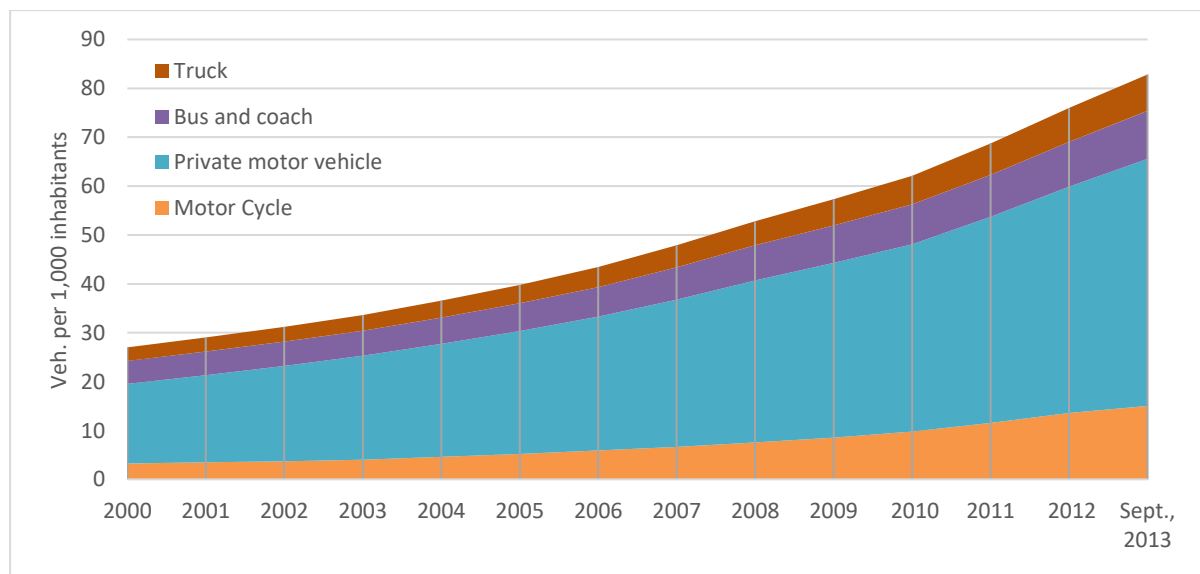


Figure 5 – Ghana's motorization trend (2000-2013)<sup>11</sup>

<sup>11</sup> Source: The Driver and Vehicle Licensing Authority (DVLA), Ministry of Transport

## 2.3 Urban Mobility Challenges

### 2.3.1 Accra and Kumasi facing chronic congestion

**Accra and Kumasi have fairly similar profiles** when it comes to urban mobility issues. Public space is in short supply, and the use of the limited available space is often inefficient, creating a vicious cycle. There are numerous dimensions to this issue:

- Neither city has a well-developed traffic plan;
- Intersections are usually poorly designed and there are no traffic lights, or those in operation are neither adequately programmed nor coordinated. (A few places in Accra’s CBD are very well planned and an exception);
- Conflicts between pedestrians and vehicles are not addressed, which reduces the vehicular and pedestrian capacity of existing infrastructure;
- Parking, legal and illegal, can at times seriously reduce traffic flows due to freezing already limited public space, as vehicles move in and out of parking spaces;
- The locations and inadequate size of trotro and taxi terminals create serious problems;
- Driver discipline on the road decreases greatly when there is intense congestion. This contrasts with usually very good drivers’ behavior conducive to an efficient flow of traffic;
- Traffic police is insufficiently involved in addressing traffic issues due to a lack of resources and insufficient staffing; the police also lack a good understanding of their role and key actions to take in order to solve traffic issues.

**There is massive traffic congestion in many parts of Accra and Kumasi**, primarily due to two main reasons: insufficient street space and poor use of existing space. Space for the urban roads network (at all levels, arterial, collector, and distributor) is simply not enough. This is the consequence of the uncontrolled urbanization processes. Both Kumasi and Accra have vast urbanized areas without high traffic capacity corridors. Traffic generally flows into a limited number of arterials and some key intersections which just do not have the capacity to handle the number of vehicles. The number of road intersections by square kilometers of land is very low in Accra at less than 40 (Figure 5). Well-functioning cities have a least 100 street intersections per square kilometer, a measure of the density of the road network.

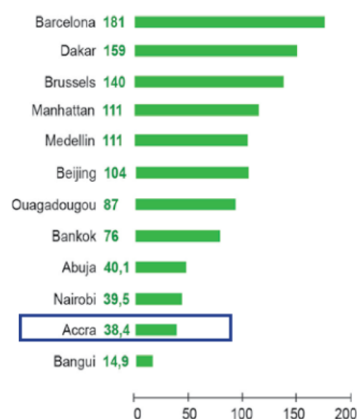


Figure 6 – Number of street intersections/sq.km<sup>12</sup>

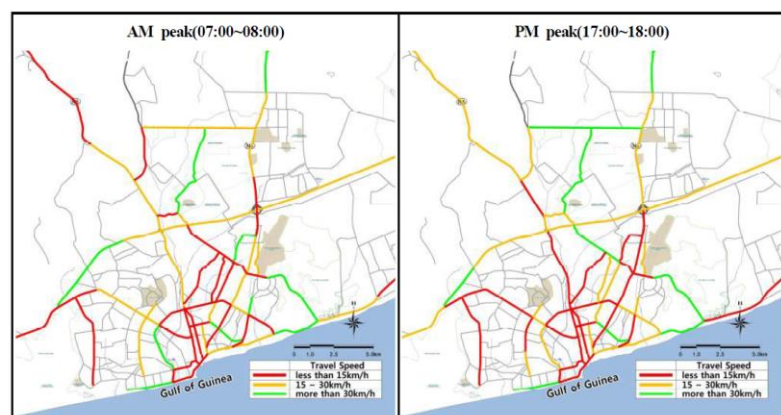


Figure 7 – Travel speeds during peak hours in GAMA<sup>13</sup>

<sup>12</sup> Credit: UN Habitat

<sup>13</sup> Credit: GAMA Transport Master Plan



Several important infrastructure projects are ongoing or have recently been completed (for example the construction of the bypass and the widening of the Lake Road in Kumasi, and the Kwame Nkrumah and Pokuase interchanges in Accra). Nevertheless, important road links are still missing or have reached their maximal capacity, and the existing road network remains vulnerable to seasonal floods (Figure 8).

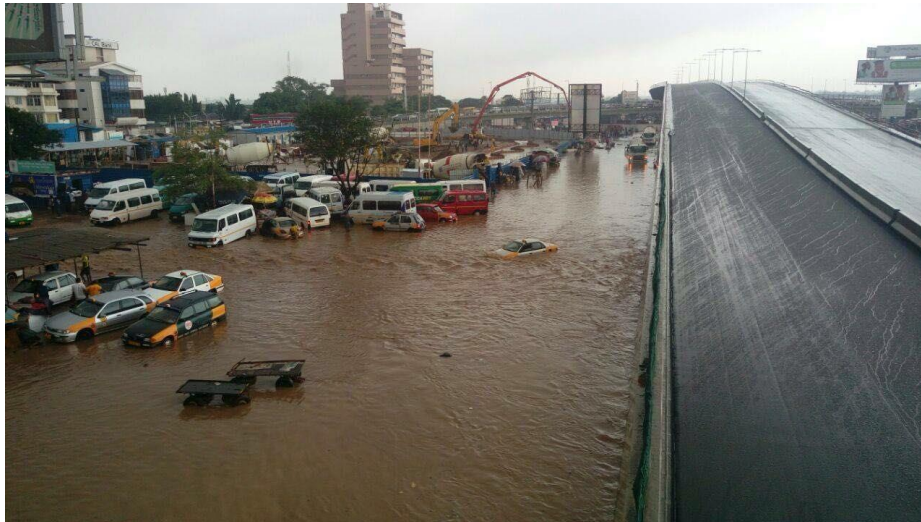


Figure 8 – Flooding of a transport terminal at Kwame Nkrumah Circle<sup>14</sup>

Addressing congestion through construction of new arteries, interchanges or road widening would require massive investment and costly destruction of buildings and resettlement of population and economic activities. Due to this shortage of public space, there is no appealing alternative but to promote and favor high capacity public transport in many parts of Accra and Kumasi.

**Public transport is the most important mode of transport in Greater Accra and Kumasi.** It provides about 50% of all trips. This is followed by walking, then private cars which are used for a relatively small number of trips. Cycling is almost negligible.

Collective transport is dominated by minibuses known as trotros and shared taxis. There are very few modern, fuel efficient, medium-size or large buses in the two cities. There is a strong informal regulation of bus and taxi operators exercised by the operators' associations. This regulation, however, is aimed at creating equal, stable, and profitable operating conditions for all operators, and benefits passengers only indirectly. Consequently, service quality is poor. Yet, the system appears to satisfy demand quite well in quantity, if not in quality. Thus, the urban areas appear to be relatively well covered. Fares are controlled and relatively cheap (with the basic fare being 0.8 GHC - or about 0.25 USD - for a short trip in Accra, which is less than in many African capital cities). Daily use varies from around 10% for an average lower income person (500 GHC) and 4% for an average middle-income person (1200 GHC).

There is an oversupply of buses and taxis, as market entry is relatively easy and the cost of an imported secondhand vehicle low. About 6,250 trotros are registered for the Accra Metropolitan Assembly alone. That capital is poorly utilized, as vehicles lose time in traffic jams and waiting at terminals. Vehicle operators function almost at survival level, with high rotation times and low revenues. They do not generate sufficient revenues to cover adequate maintenance nor investing in any modernization of their fleets.

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<sup>14</sup> Credit: Ghanaweb

Given that public transport vehicles account for a large part of traffic (a third to a half of traffic on main arteries at peak hour), trotros contribute largely to congestion which has a significant negative impact for both private and public transport and thus all citizens.

Moto-taxis, which are growing fast and provide a useful feeder service in many African cities, are not allowed in Ghana. A new formal regulation of public transport operators is being put in place by the transport departments of the MMDAs. This regulation is important in order to rationalize the sector and gradually improve accountability of the operators and service quality for the passengers.

Transport modes	Accra	Kumasi	Sekondi -Takoradi	Tema
Walking	32.8	39.3	70.7	38.5
Taxi (shared and individual)	9.8	26.4	6.7	20.5
Trotro and bus	42.3	24.2	18.2	26.1
Private car	11.7	8.0	4.4	10.6
Bicycle	0.8	0.4	NA	1.0
Motorcycle	0.2	0.0	NA	1.7
Other	2.3	1.8	NA	1.4
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Table 4: Modes of transport to and from workplace, %, by city, 2007<sup>15</sup>

**In Accra, two railway lines** (Accra-Tema 30,2 km and Accra Amasaman 24,9 km) still exist but they serve only a few passengers in Greater Accra who live along the corridors. During a long period, railways as a public mode of transport have been neglected and the government withdrew the subsidy for the rail subsector in 1997, causing further decline of the sector. Nowadays, few passenger use the train to commute. As the government is considering the potential development of inter-city railways, it could contribute to the development of rail transport in Greater Accra region.

<sup>15</sup> Source: Ghana Urbanization Review Phase 1 report - For Sekondi-Takoradi, data were combined with those of the Urban Transport Planning Studies



Figure 9 –Current railway network in Accra<sup>16</sup>

**Accra and Kumasi both benefitted from the Ghana Urban Transport Project (GUTP)** – a very important project to make public transport more efficient and thus contain the growth of car traffic, through the creation of a high capacity bus corridor and institutional development efforts. In Accra, these efforts led to the creation of DoTs and the establishment of GAPTE. The key short to medium term goal of GAPTE is to put in place high performance bus services in four key corridors in Accra and surrounding MMDAs. Under the GUTP, Kumasi did not receive any hard investments, but the metropolis enjoyed support in the form of institutional strengthening and capacity building (preparation of transport and traffic signaling plans).

**Ayalolo Buses - The new high capacity bus services in Accra.** There is a consensus that high capacity bus services should be established on some of the key corridors of GAMA, starting with the urban transport studies in GAMA by the mid-2000s. Such services would be provided by 12-meter long modern, highly efficient buses with a reliable schedule and a high standard of operation. A study in 2010 reviewed the feasibility of such services on four key corridors starting from the city center and reaching far into Accra’s suburban areas in four separate directions, with various branches. It showed that there was indeed a good justification for high capacity bus services along:

- A western corridor from the city center towards Kasoa
- A western corridor from the city center towards Awoshie, for which a dedicated Bus Rapid Transit (BRT) infrastructure was to be built with financing assistance from the World Bank under the Ghana Urban Transport Project - GUTP)
- The Amasaman corridor (from Accra’s center towards the northwest)
- The Adenta corridor (towards the northeast along the international airport)

The BRT on the Kasoa corridor could not be implemented due to the difficulty of addressing key choke points along the way (such as the large Kaneshie market), and anticipated cost-overruns. As available resources were very limited, the focus of local and national authorities has been directed to the Amasaman corridor where high capacity bus operations started by the end of 2015.

<sup>16</sup> Source: Transport Master Plan Project in Greater Accra Region

The complex process of putting in place all the elements of a successful bus system in the Amasaman corridor has been led by GAPTE, with support from the MMDAs and DUR. The relatively simple infrastructure works were completed with GUTP funding. Three operating companies have been formed by the four national trotro associations, involving the operators plying the corridor. Services contracts have been signed between GAPTE and these operating companies.

The Amasaman project has occurred in parallel to the expansion of the road network. Existing trotro operations are maintained in the corridor, rendering it very difficult to ensure that the dedicated lanes were not abused by other road users. A better alternative would have been an integrated strategy, which would have optimized results accordingly or potentially shifted transport demand towards public transport and non-motorized transport modes,

Several economic and financial studies of the high capacity bus system, including the failed BRT proposal, have been carried out since 2010. They predicted financial viability under very different assumptions and with passenger fares at about the current level: The Amasaman corridor would serve a major quadrant of GAMA with a current traffic load of about 10,000 passengers per hour and per direction in the peak period. Given reasonably high passenger loads per bus, and a commercially driven, private sector management, and the very low labor costs in Ghana, the buses should normally be profitable at fare levels slightly in excess of the current fares. This is based on a “business case report” prepared in 2013 by an international consultant on behalf of GAPTE, which provides a comprehensive review of costs and shows a positive result for the bus operations. Several key aspects of this business justification need consideration and highlight the high risk in the Amasaman corridor operation:

- The buses selected by the Government are of high standards and are considerably more expensive than planned in the business case report. The leasing cost is much higher than anticipated rendering reaching the financial balance more difficult for the operators. A potential solution is to include a major subsidy in the interest rate and in the repayment terms of the leasing terms. Yet, this would strain an already tight national budget, and create all the perverse incentives that are usually associated with public sector intervention, and may affect the efficiency of the system.
- Passengers’ origins and destinations are not sufficiently considered. There is a need to establish a feeder bus system that would ensure easy and fast access to the high capacity buses.
- As trotro operations are maintained on the corridor there is a possibility of a fare differential that, as perceived by passengers, is not worth the much higher performance expected of the new service. This, combined with the high connection time that would result from relying on a BRT trunk – feeder connection (as opposed to a potentially direct trotro service), creates a risk to that many passengers will keep using the trotros and that the passenger volume on the new service will not reach the level necessary to generate profits. These questions need to be addressed as soon as possible.

A zone-based fare structure is applied to the system, which corresponds to gradually increasing fares according to distance travelled. There are four zones: Zone 1) Amasaman to Ofankor; Zone 2 – Ofankor to Achimota; Zone 3 – Achimota to Circle and Zone 4 – Circle to Tudu. Fares are pegged to trotro fares for similar routes along the corridor. Trotro fares for Zone 4 forms the basis for calculating inter-zonal travel fares and are currently as presented in the following table below.

Travel zones	Fare (GHC)
Movement within one (1) zone	1.15
Movement within two (2) zones	1.92
Movement within three (3) zones	2.5
Movement within four (4) zones	2.88

Table 5: Ayalolo fare structure, October 2018<sup>17</sup>

In a daily use basis, the Ayalolo Buses can vary from around 14% for an average lower income (500 GHC) and 6% for an average middle income (1,200 GHC), up to 35% for a low income and 14% for a middle income.

**In 2016, the road user class with the highest share of fatalities in Ghana continued to be pedestrians.** According the Road Traffic Crash Statistics of 2016 compiled by the National Road Safety Commission (NRSC), the crash statistics in 2016 represent an increase of fatalities and serious injuries respectively despite a reduction of crashes over the 2015 figures. Most regions recorded an increase in the number of fatal crashes, but an important decrease (of -22.1%) was recorded in the Greater Accra Region.

### Comparison of 2015/2016 Crash and Casualty Situation

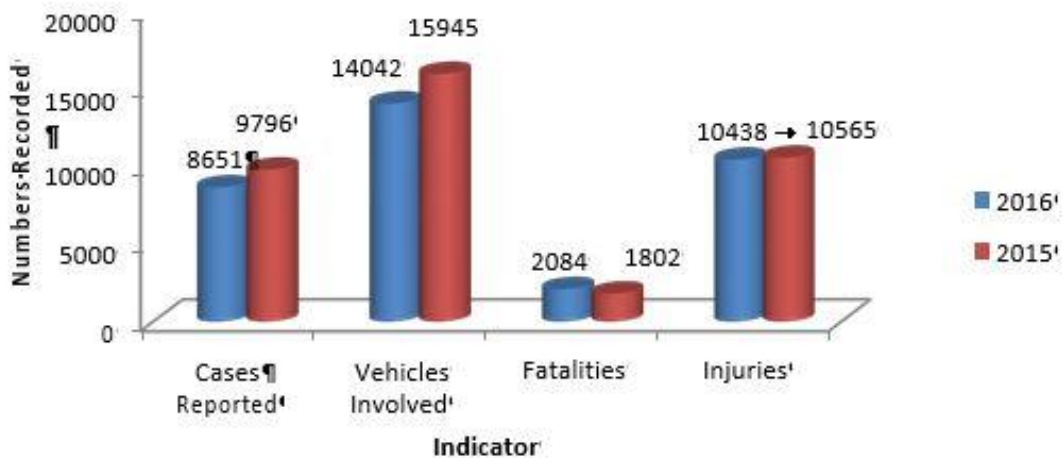


Figure 10 – Road Traffic Crash and Casualty Situation – 2016-2015<sup>18</sup>

<sup>17</sup> <http://origin8gh.com/ayalolo/>

<sup>18</sup> Credit: Road Traffic Crash Statistics 2016 - National Road Safety Commission (NRSC) of Ghana

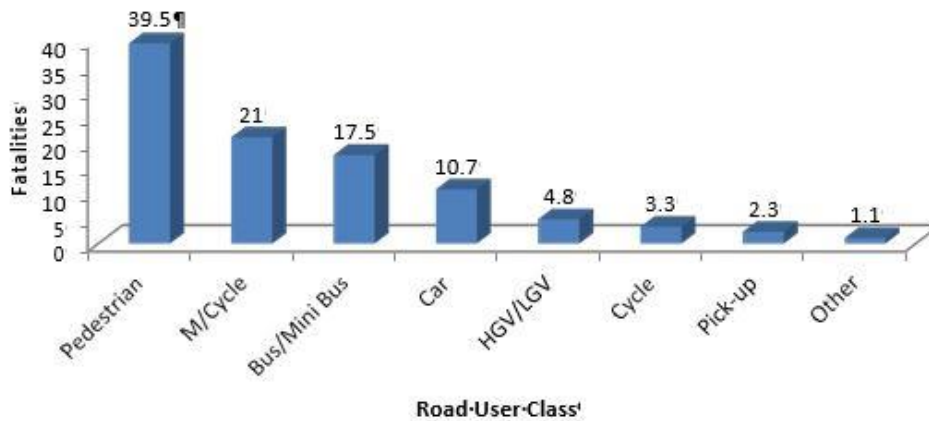


Figure 11 – Distribution of fatalities by road user class<sup>19</sup>

**Strategic mobility planning is in its infancy.** GAMA has a transport master plan, but it enjoys limited ownership at the local level and does not offer an integrated multimodal strategy agreed upon by all stakeholders. Recent investments to improve mobility have focused on accommodating car traffic. The creation of a mass transit network has been considered only as recently as 2007. However, mass transit investments occurred in parallel to the expansion of the road network in the absence of an integrated strategy, which could have optimized results or potentially shifted transport demand towards public transport and non-motorized transport modes.

A regional spatial development framework is being developed for the Greater Accra Region, but it is not clear whether it will address intra-urban mobility and the establishment of multimodal transport hubs. If there is no long-term land use and infrastructure investment plan for Greater Accra that is accompanied by sufficient levels of capacity, finance, governance and enforcement, it is likely that mobility and land development will continue to not be integrated.

**Kumasi has a long-term transport master plan** since 2012 that doesn't fulfill the objectives of such a document. If it integrates the development of public and private transport, it does not attempt to steer demand towards public transport and non-motorized transport modes. In addition, Kumasi's mobility plan did not consider resource constraints and alternatives (such as more efficient public transport, simple forms of congestion pricing, and parking management) to satisfy demand within these constraints. Finally, it shows insufficient concern for traffic management in the city center. As a result, the approach remains primarily centered on the construction of large road infrastructure – in particular the completion of the city's bypass and development of clover-leaf interchanges to connect it to the road networks.

**Accra and Kumasi show a higher concern for pedestrians in the CBDs than many other African metropolises.** This is particularly the case for Greater Accra. There, in many parts of the central business district (CBD), sidewalks are in good condition. However, outside Accra's city center or newly rehabilitated areas as in Nkrumah Circle, which are well planned, there are very few paved sidewalks and the existing ones, are not in good condition. More importantly there are generally no facilities to cross the streets and pedestrian paths are not continuous. Access to public transport stops on main streets are sometimes very difficult and dangerous. The Transport Master Plan for Greater Accra refers that "GAMA faces severe unavailability of infrastructure for non-motorized transport (NMT). Pavement conditions for bicycle and pedestrian lanes in GAMA are very poor. Most of the roads in GAMA have narrow width and therefore there is not enough space for bicycle lanes and sidewalks. The verge of the roads is used for bicycle-pedestrian lanes in GAMA but is occupied by street vendors and street parking. This causes congestion especially in areas with heavy pedestrian traffic and makes pedestrians

<sup>19</sup> Credit: Road Traffic Crash Statistics 2016 - National Road Safety Commission (NRSC) of Ghana

vulnerable to traffic accidents. No bicycle lane exists except for Tetteh Quarshie-Madina section on Legon East Road. Markets and terminals in GAMA are congested with people".

In Kumasi, the general situation across the city situation presents major deficiencies, as pedestrian facilities are very limited. As in most African cities, the situation is especially difficult for persons with reduced mobility in informal settlements. The fact that pedestrians represent 39.5% of all fatalities in road accidents in Ghana, as mentioned before, is strong evidence of the shortcomings affecting pedestrians.

It would be important to implement some key measures in order to overcome the existing deficiencies, such as: install facilities to separate NMT from motorized vehicles if the roads are wide enough; build sidewalks and bicycle lanes (including side streets approaching arterial roads) on the areas where public transport facilities can be established; install facilities to prevent parking on sidewalks and expand crosswalks; install bus shelters, bus bays, and bicycle stands; install devices to prevent illegal parking around public transport facilities and tightening laws on illegal parking and build sidewalks and adjust location of sidewalks near public transport stations.

### 2.3.2 Predominance of non-motorized transport in other cities

Outside of GAMA and Kumasi, there are **11 cities with more than 100,000 inhabitants in Ghana** according to the 2010 Census. They are for the most part regional capitals, such as Sekondi-Takoradi, Sunyani, Cape Coast, or Tamale. Urban mobility conditions in these cities are generally different from that of Accra and Kumasi, because of their level of demographic and economic development. Most of the large assemblies located in the Greater Accra region form part of the capital's metropolitan area (Tema, Ashiaman, Teshie, Madina) and therefore share the problems and attributes of Accra's mobility system.

The economy of secondary cities is not as centered on trade and services as that of Accra and Kumasi. Instead, it relies on the primary sector (mainly agriculture and mining), and to a lesser extent on the secondary sector (manufacturing). This difference in economic structure combined with lower levels of income translates into **lower uses of motorized modes of transport**. Conversely, non-motorized transport plays a much more important role in urban mobility, except in Tamale, where the modal split is comparable to observed in Accra and Kumasi. Most secondary cities therefore do not face serious congestion problems and have sufficient road space to accommodate present levels of vehicular traffic. For this reason, they generally do not consider urban transport as a sector requiring specific attention beyond road maintenance and development.

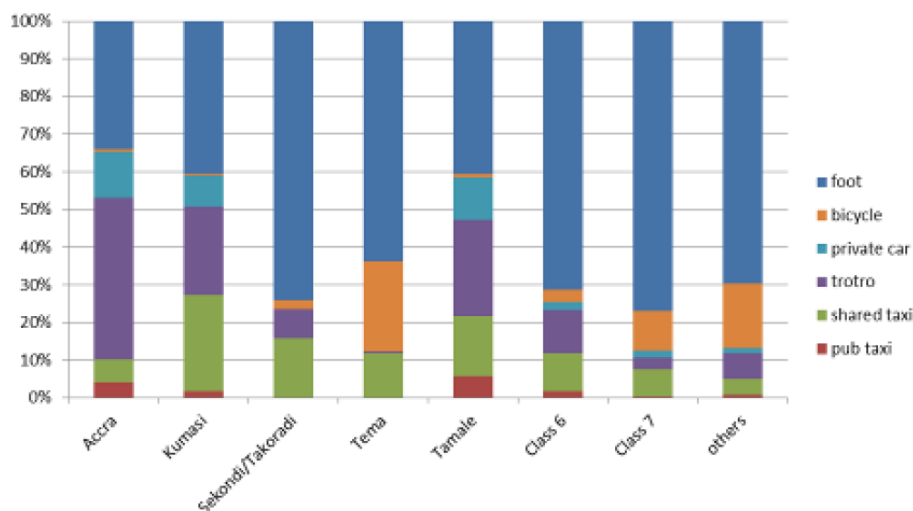


Figure 12 – Means of transport to and from workplace by city class (2007)<sup>20</sup>

<sup>20</sup> Credit: Ghana Urbanization Review (2014)

Because they are not facing immediate pressure to improve urban mobility, **secondary cities have the opportunity to anticipate upcoming spatial and demographic growth**. While local authorities can be distraught in the face of the dire situation they encounter in Accra and Kumasi, second-tier metropolitan and municipal assemblies can start planning their development to avoid the problems currently faced by larger cities. In particular, they have the capacity to reserve land for the development of transport infrastructure, and can start organizing paratransit operations while they are still at a manageable scale. However, secondary cities also have to work with more limited human and financial resources, which greatly reduces their ability to prepare the future of mobility.

## 2.4 National Context

### 2.4.1 Legal framework: an ongoing decentralization process

The legal framework that applies to the urban mobility sector is **largely defined by the ongoing decentralization process**. Decentralization of government functions is a national objective in Ghana enshrined in its 1992 constitution and defined in a large number of laws, including the Local Development Act 462 of 1993, later replaced by the Local Governance Act 936 of 2016. As a result, there are today two main government levels in Ghana, the central level with the national government which handles all issues of concern for the entire country (such as, in the transport sector, traffic and vehicle regulations, major investments, and capacity building) and the local level with about 216 MMDAs that handles all matters that are more effectively dealt close to the population (such as, in the transport sector, the provision and operation of local infrastructure and the provision and regulation of public services). There is also an intermediary regional level in Ghana, the Regional Coordinating Councils, with the limited responsibility of monitoring and supervising the MMDAs. The decentralization of responsibilities from the central government to the MMDAs has been a slow but systematic process for many years. In the transport sector, it has accelerated only recently, with the effective establishment of DoTs in the main metropolitan areas.

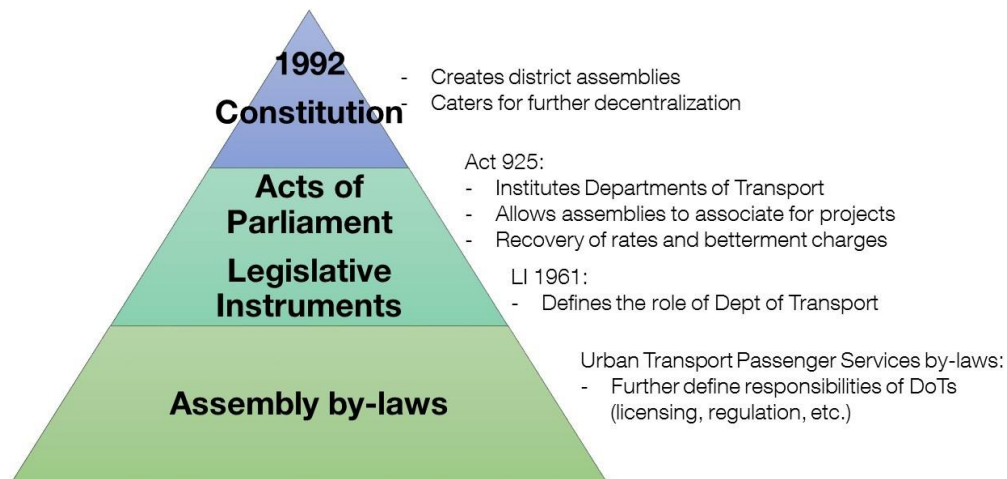


Figure 13 – Legal framework applying to Ghanaian institutions

This legal apparatus is completed by a set of planning documents defining goals for public interventions at different scales:

- **From overarching development goals to sectoral plans.** The second Ghana Shared Growth and Development Agenda (GSGDA II) has been replaced by a Long-Term National Development Plan (LTNDP), setting ambitious development targets for the nation as a whole. The 2008 National Transport Policy is outdated and yet to be replaced. Instead, a new Transport Infrastructure Framework has recently been published. It defines a roadmap for infrastructure development,



drawing on existing local or regional plans and proposing new projects, such as metro rail systems for Tamale and Sekondi-Takoradi, the feasibility of which has not been assessed.

- **From national to local scale.** At the regional and local levels, urban development and transport master plans exist, for instance in Accra and Kumasi. However, planning at these different scales is not integrated and national strategies are not fully translated at the local level. In return, national plans often appear to be disconnected from local conditions and available resources.
- **From medium term to long term.** The GSGDA was operationalized by three-year medium-term development plans. This is not yet the case for the LTNDP, which offer a vision to 2057 (the 100<sup>th</sup> anniversary of the Republic of Ghana).

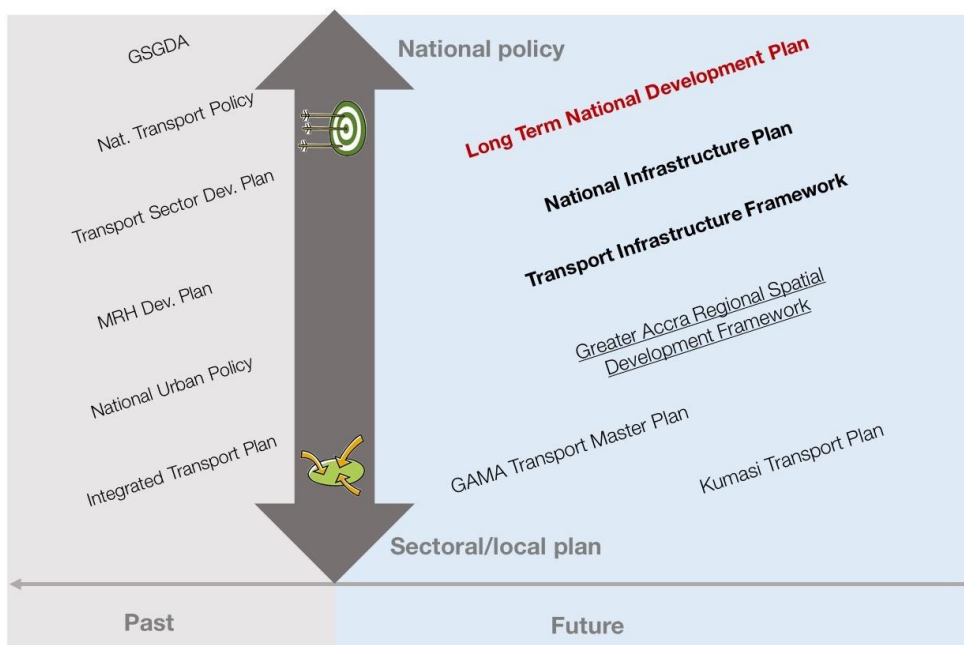


Figure 14 – Main planning documents

Responsibilities for urban transport are almost entirely allocated to the local governments (called the metropolitan, municipal, or district “assemblies” or MMDAs). A major exception is that responsibilities for arterial roads in the urbanized areas remain with the Ministry of Roads and Highways (MRH). Institutional capacity varies a lot among the cities. Accra and Kumasi have strong potential: decentralization is completed, and competent staff is in place. However, so far, this has generally not translated into effective action. MMDAs in the Greater Accra metropolitan area have taken a major step by creating in 2014 an agency (the Greater Accra Public Transport Executive - GAPTE) in charge of organizing and modernizing public transport services and of formulating and guiding the implementation of a long term mobility strategy for the entire urbanized area.

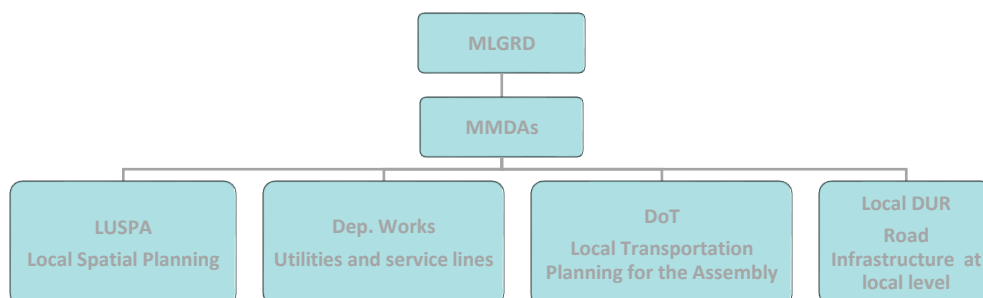


Figure 15 – Decentralized Government in relation with urban mobility

The allocation of the main functions for urban mobility in Ghana is summarized in the next chapter. Besides typical national functions like policy formulation and planning at country level and vehicle and driver licensing, most functions are under the responsibility of the MMDAs or the private actors, mainly the construction companies and public transport service providers. The main exception is that, in practice, responsibilities for arterial roads in the urbanized areas remain with the Department of Urban Roads (DUR) of MRH and its regional offices since these roads are a natural extension of the main inter-urban roads handled by MRH and, in any case, require large amounts of funding that the MMDAs do not have. An important new actor in the urban transport sector in Ghana is also the Greater Accra Passenger Transport Executive (GAPTE), created in 2014 by thirteen of the GAMA MMDAs to handle the inter-jurisdictional issues in the public transport field.

Ghana made commitments in the fight against climate change through its Intended Nationally Determined Contribution (INDC), which puts forward 31 mitigation and adaptation actions and was released in 2015. Ghana aims to unconditionally lower its greenhouse gas emissions by 15 % by 2030, with an additional 30 % emission reduction target to be attained on condition that external support is provided to cover the cost of these measures. Specific targets in the urban transport sector are as follows:

- Number of trips by public transportation increased by 10% in the 4 main cities;
- Sustainable mass transportation modes (rail and bus transit system) in 4 cities;
- Number of NMT trips increase by 5% in intervened areas;
- Reduction in travel time by at least 8 minutes per trip by public transport;
- Traffic congestion levels decreased.

However, no stringent mechanism or compulsory measures have been put in place to guarantee that these targets are met. While the Ministry of Environment, Science, Technology and Innovation is leading the preparation of the INDC, the responsibility to implement the proposed actions falls to other ministries and implementing agencies. As the authorities have faced a number of challenges in the development of a BRT system in Accra and the motorization rate keeps progressing in Ghana, it is not clear how any of the transport objectives listed in the INDC will be achieved. The link between strategy and implementation is thus weak, in the absence of obligations or serious incentives to meet the targets set out in this document.

#### 2.4.2 Main Actors of urban mobility

This section presents a description of the different stakeholders involved in urban mobility in Ghana, from central to decentralized agencies.

##### **Ministry of Transport (MoT)**

The Ministry of Transport is one of several ministries holding partial responsibility for the transport sector. Following the creation of two new ministries in 2017, mobility is now a shared responsibility between at least six ministries (MoT, Ministry of Roads and Highways, Ministry of Local Government and Rural Development, Ministry of Environment, Science Technology and Innovation, Ministry of Aviation, and Ministry of Railways Development).

The Ministry of Transport (MoT) is responsible for policy development, coordination and oversight of aviation, inland water and maritime, railway and road transport sub-sectors. In this context, the MoT is in charge of road transportation and also plays a role in urban mobility through its participation in MMT (a public bus company) and its engagement with private transport operators associations (GPRTU, in particular). However, there is no unit in the Ministry of Transport specialized in urban mobility issues. Urban mobility is handled either by the planning department or by the policy department in charge of research, statistics, and information management. Given their very limited resources (human and financial), they can be active only at a strategic level or occasionally handle high

priority initiatives like the supply of buses for the high capacity bus corridors in Accra, as was done for the Aayalolo bus service. A notable recent endeavor supervised by the MoT has been the preparation of a Transportation Master plan for the Greater Accra, supported by a grant from Korean development agency (KOICA). Finally, the following entities are also placed under the authority of the MoT:

- the **Driver and Vehicle Licensing Authority**, responsible for vehicle licensing, driver licensing, and vehicle inspections;
- the **National Road Safety Commission**.

### Ministry of Local Government and Rural Development (MLGRD)

The Ministry of Local Governments and Rural Development (MLGRD), spearheading the decentralization process, gradually gives much consideration to building up the institutional capacity of the Metropolitan, Municipal and District Assemblies (MMDAs). It has the main responsibilities of stimulating, monitoring and evaluating the actions and performance of the MMDAs and providing them with both technical and financial support. In practice, it also exercises a guidance and control role. The Policy, Planning, Budgeting, Monitoring and Evaluation department (PPBME) of the MLGRD is the key entity for this, together with the Local Government Service (LGS), which handles the organizational and human resources aspects across sectors. LGS recently initiated activities aiming at strengthening and harmonizing the roles of Departments of Transport within the MMDAs.

There is no specialized unit in MLGRD to handle urban mobility issues. These issues are considered as an integral part of urban development and are followed up by PPBME's **Urban Development Unit (UDU)**, which monitors developments in urban areas and provides support to MMDAs mainly through donor-financed projects. At this stage, UDU's role in relation to urban mobility is to stimulate and coordinate efforts by the MMDAs and GAPTE.

### Ministry of Roads and Highways (MRH)

The Ministry of Roads and Highways (MRH) is responsible for policy development, coordination and oversight of road infrastructure including oversight of the Department of Urban Roads (DUR), Department of Feeder Roads (DFR), The Ghana Road Fund (GRF) and Ghana Highways Authority (GHA).

The **Department of Urban Roads** of the Ministry of Roads and Highways (DUR Head Office) is responsible for the planning, design, and implementation of all nationally funded road projects in urbanized areas, as well as the construction and maintenance of most of the arterial and collector road network- (The MMDAs are in charge of tertiary roads). DUR is a strong and structured entity with an engineering culture and is focused on large investment projects. It has a long experience of work on donor-funded projects and has recently delivered important infrastructure in Accra, such as the Kwame Nkrumah flyover or the new Awoshie-Pokuase road.

DUR has a large number of qualified engineers among its staff and has access to important financial resources through a variety of channels (state budget, roads fund, loans or grants from development agencies). While very competent in civil works, DUR has fewer skills in transportation engineering and traffic management.

### Metropolitan, Municipal and District Assemblies (MMDAs)

Every Metropolitan, Municipal and District Assembly (MMDA) is mandated to plan, regulate and manage transport infrastructure and services in their respective localities. The MMDAs are also responsible for land use planning. Responsibilities for urban transport are almost entirely allocated to MMDAs, with the exception of arterial and many collector roads in the urbanized areas, which remain with the Ministry of Roads and Highways (MRH). Institutional capacities vary a lot among the 216 local assemblies, but two departments have an important role to play in each MMDA:

- **The departments of transport of the MMDAs** have concentrated on the registration and regulation of public transport operators, and in doing so, have tried to match the population's mobility demand and the supply of public transport by trotros and taxis. The responsibilities of the

DoTs are defined in broadly similar by-laws passed by all assemblies at the time of their creation. These responsibilities are as follows:

- Regulate the urban passenger transport services within its jurisdiction;
  - Establish and implement procedures for operation of urban transport services within the jurisdiction;
  - Establish required standards and guidelines for urban passenger transport services;
  - Monitor compliance of the guidelines and enforce urban passenger transport services with conditions as contained in the permit;
  - Ensure that the operations of urban passenger transport services comply with the establishment of standards and guidelines;
  - Maintain a register of operators of urban passenger transport services within its jurisdiction;
  - Carry out studies, investigations, data collection and research into urban passenger transport services, necessary for the improvement of the services.
- **The Urban Roads Departments (URD)** of MMDAs are responsible for the Planning, Development and Maintenance of road infrastructure in their jurisdiction. The responsibilities of URD are as follows:
- Management of the road network: maintenance (notably with RDF resources), improvement of the proportion of road network in good condition, etc.
  - Development of Road Safety measures (safe walking/crossing areas, traffic calming facilities, etc.)
  - Parking Management

The devolution process put these departments under the authority of MMDAs, but it seems they keep a cultural specificity due to their background in central administration (DUR).

### Greater Accra Passenger Transport Executive (GAPTE)

The Greater Accra Passenger Transport Executive (GAPTE) was created in April 2014 as a private limited liability company owned by thirteen MMDAs of GAMA. Its main objectives, as described in the company's regulations, are to develop and implement systems for urban transport management, network planning, permitting, and service contract management. In the pursuit of these goals, GAPTE's members agreement lists its primary functions covering three main areas:

- urban transport planning, data collection, and knowledge enhancement;
- development of standards and requirements for public transport services as well as coordination of and support to the departments of Transport of the MMDAs, and
- procurement of public transport infrastructure and services.

However, an ambiguity remains regarding mobility planning, since part of this responsibility is vested in the Departments of Transport of the MMDAs (responsible for trotro and taxi operations at the local level) and GAPTE's mandate does not clearly cover the full multimodal scope.

GAPTE's board of directors has succeeded the former Steering Committee on Urban Transportation (SCUTA) set up in 2011 to address cross jurisdictional issues in the planning, development and regulation of urban transport between the MMDAs of GAMA. In accordance with GAPTE's draft Members' Agreement, it is composed of representatives of the thirteen assemblies as well as a representative of the Economic Planning Office of the Greater Accra Regional Coordinating Council, the Chairman of the Ghana Private Roads Transport Union, the Director of the DUR of the MRH, and the Chairman of GAPTE.

GAPTE currently faces important challenges in terms of financial and human resources. It does not benefit from a secure line of funding, which threatens its viability. Besides, though GAPTE's staff has the adequate skills to carry out most of its current functions, it is too limited in number to fulfill its many missions (as listed above). A more general difficulty facing GAPTE stems from the ambiguity of its position – half-way between a transport authority and a transport operator.

### Development partners

Several development finance institutions are active in the transport sector in Ghana. The main contributors currently involved in the sector are:

- **The World Bank (WB).** The WB was the main financier of the Ghana Urban Transport Project (GUTP), leading to the creation of GAPTE and the launch of scheduled bus services on the Amasaman corridor. A new Transport Sector Improvement Project (TSIP) was approved by the WB's board in June 2017. This 150 million USD project supports the rehabilitation of roads in the Northern region of Ghana, promotes road safety and aims at strengthening the institutional management of the transport sector.
- **African Development Bank (AfDB).** AfDB is launching the Accra Urban Transport Project (AUTP), an 84 million USD infrastructure project centered on the construction of a three-tier interchange at Pokuase. The new interchange will be located on the Amasaman corridor and may therefore have an impact on the operations of Aayalolo buses. AUTP also caters for the preparation of an urban development master plan for the Greater Accra region, which will be an opportunity to integrate urban and mobility planning.
- **Agence Française de Développement (AFD).** AFD still has activities under the GUTP and will not close its portion of the project before the end of 2018. Remaining funds will primarily be used towards the construction of a coordinated traffic light system connected to a traffic management center on the Amasaman corridor. This will contribute towards the identified need for improved traffic management in Ghanaian cities in general and in Accra in particular. AFD has also indicated its willingness to continue supporting projects combining digital technologies and urban transport, in the spirit of the AccraMobile initiative. AFD also financed the Kumasi Road and Drainage Extension project, which consists in the widening of a road and the lining of a drain in Kumasi.
- **Korea International Cooperation Agency (KOICA).** KOICA recently financed a Transport Master Plan for the Greater Accra through the MoT. At the time of writing, the final version of this master plan was not available, and it remains to be seen whether this document will be translated into operational terms. It is unclear whether this document is recognized and followed by the metropolitan and municipal assemblies of the Greater Accra.
- **Japan International Cooperation Agency (JICA).** JICA's interventions in the transport sector are primarily in the field of inter-urban and rural roads. It is currently co-financing the Eastern Corridor project with AfDB and preparing a capacity-building program for road and bridge maintenance. JICA is also preparing to finance a new interchange to alleviate congestion at Tema roundabout (detailed designs are ready).
- **Swiss Economic Cooperation and Development (SECO)** The Ghana Urban Mobility and Accessibility Project (GUMAP) is a 6 million USD capacity-building project financed by the Swiss government via SECO, which will be implemented over 4 years – from 2017 to 2020 – by the MLGRD. The GUMAP project is also responsible for financing small traffic management improvement and parking schemes.

### Non-state actors

- **Kwame Nkrumah University of Science and Technology (KNUST)** is the main and most recognized academic institution in the field of engineering in Ghana. A large share of engineers working for the national and local government have been trained at KNUST, and it constitutes a center of

excellence in the field of civil engineering. Through a partnership with EPLF (through the Swiss-financed GUMAP project), KNUST has recently launched two new master's degrees in transport planning and traffic management, which will allow its students to develop a broader skillset in the field of urban mobility, beyond infrastructure design and construction.

- **The Ghana Institution of Engineers** is an autonomous professional body promoting the development of science, engineering and technology, and safeguarding professionalism and ethical practice in the profession. It works closely with implementing agencies under the Ministry of Roads and Highways, and regularly organizes conferences and training programs.
- **Amend** is an NGO with a mandate to develop, implement and evaluate evidence-based programs to reduce the incidence of road traffic injury in Africa. It runs road safety programs in partnership with governments, companies, development agencies, and others on projects that target specific aspects of road traffic injury.
- **Trotro Diaries** is a community of public transport users, initially established to gather and share the experience of commuters using trotros, and advocate for their improvement. With more than 8,000 members, it is one of the rare civil society organizations with a focus on public transport. Trotro diaries also worked with local authorities towards the development of a mobile app aimed at reporting problems requiring the city's intervention in the public space.
- **The World Resources Institute (WRI)** is active in Accra where it implements a road safety project financed by Bloomberg Philanthropies. It has executed small pedestrian infrastructure improvements in partnership with Accra Metropolitan Assembly, and collaborates with the Ghana Police to improve enforcement of motorbike regulations.

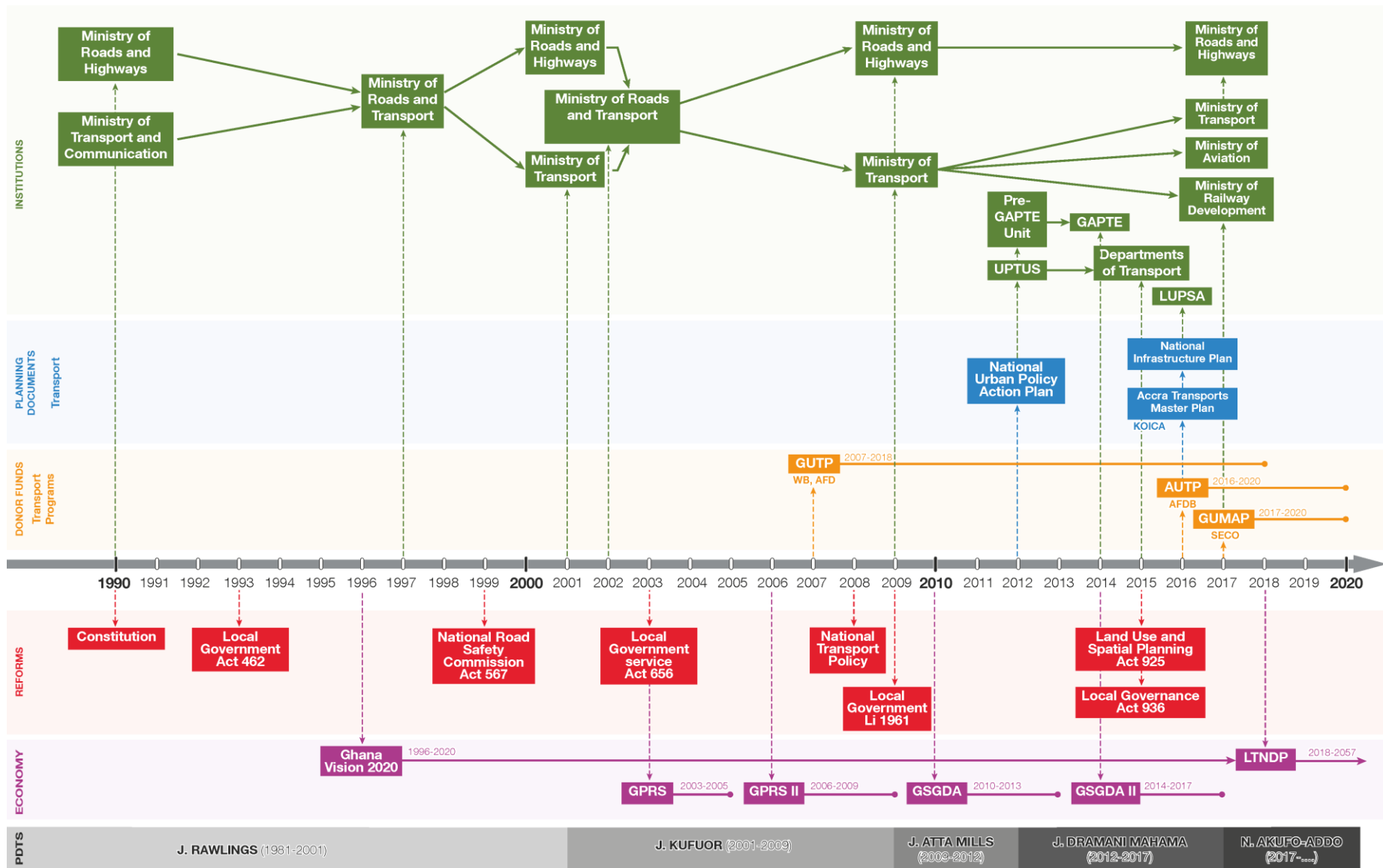


Figure 16: Timeline of urban mobility in Ghana

### 3. Main findings in respect of priority thematic areas

This section presents the findings of the consultant's mission in Ghana and desk study work. Following a preliminary assessment of documents available remotely, the consultant's team conducted a series of semi-directed interviews with key stakeholders in Accra and Kumasi (stakeholders were identified with the help of the Ministry of Transport and of the World Bank). Each interview was divided into two parts: the first part focused on one of the six thematic area that was the most relevant to the interviewee's position; and the second part covered the five other thematic areas in less depth, seeking to validate information obtained in these areas through previous interviews. At the end of the mission, a workshop was held in the Word Bank's office, with representatives from the main ministries and governments agencies, as well as with development partners, to validate the findings of the Consultant and rank them by order of importance.

#### 3.1 Institutional framework for urban transport management

- **The responsibility for urban mobility is highly fragmented at the national and local levels** as well as between these levels. At the national level, at least six ministries have a stake in urban mobility: MLGRD, MRH, MoT, MoF, MESTI, and MRD. The creation of the Aayalolo bus services provides an interesting example as it involved several ministries and departments: MoT for the purchase of the new buses, MoF for their funding, MLGRD for field implementation, DUR for infrastructure provision, as well as GAPTE and some MMDAs for the contracting out of the services to operators and operationalizing the bus routes.

The recent creation of a Ministry for Railway Development (MRD), tasked with the ambitious task of redeveloping the country's rail system, is likely to add a new layer of complexity to this institutional setting – since rail also plays in role in urban transport (primarily between the metropolitan areas of Accra and Tema at the moment).

The transport sector has a long history of ministerial splits and mergers, as the responsibilities for road infrastructure and other modes of transport have alternately been concentrated in one ministry and then split among two or more ministries. As a result, the role of the MoT has not always been clearly defined: it has the responsibility for transport sector policy formulation and coordination, but is also de facto involved in implementation as a shareholder in transport operators or through the purchase of rolling stock (as in the case of the Aayalolo buses). In recent years, the MRH has been the driving force in the urban transport sector as the main provider of road transport infrastructure (mainly through DUR and GHA). As a result, it manages large amounts of financing and benefits from strong technical capacity. Yet, the main responsibility for the management of urban transport is by law vested in local assemblies. At the national level this responsibility should therefore be taken on by their line ministry, namely MLGRD. However, this responsibility is yet to be fully endorsed (and embodied) by the ministries. As a result, the urban mobility sub-sector is currently split between various institutions and remains without a champion.



- **Some key functions are not clearly allocated to any specific entity.** Although the importance of the planning of mobility is well recognized, no entity is clearly responsible for this. Different initiatives have therefore been carried out without proper integration. In GAMA, for instance, a Transport Master Plan was developed by MoT, while a regional spatial development framework (also affecting mobility) is currently prepared by LUSPA. The monitoring and evaluation of mobility performance in Ghana's main urban areas, an essential basis for any decision-making process, is also neglected.
- **Insufficient coordination between decision makers.** The multitude of actors involved in the sector makes cooperation crucial, but there is no established mechanism for involving all concerned senior decision makers and forging a consensus among them on priority actions. Such mechanisms or forums were established in the past, examples include the Urban Transport Advisory Committee (UTAC) created in the context of the World Bank/AFD GUTP, and the Steering Committee for Urban Transport in Accra (SCUTA). However, these structures have not been active for several years, possibly because they were perceived as connected to the GUTP that has now been disestablished. This function could in part be fulfilled by the board of GAPTE, but operational challenges faced by the institution makes it difficult to do so. Consequently, there is a lack of common strategy and coordination between ministries, departments and agencies.
- **Lack of integration within and across assemblies.** Within assemblies, the different statutory departments created by law have a tendency to work in isolation, especially in larger assemblies. The activities of the Urban Roads, Works, Land Use and Spatial Planning, and Transport departments, should be closely integrated as their interventions are connected. Urban Roads Departments have historically enjoyed more weight than their counterparts as they benefitted from relatively bigger budgets and precious functional ties with DUR. On the contrary, Departments of Transport are not always fully established or recognized, as they have only come into existence in recent years. Their mandate is not exercised consistently across assemblies, which occasionally creates tensions between assemblies. For instance, some assemblies have been known to be more lenient in their review of transport operators' applications for licenses. This creates a perverse incentive as they subsequently collect more revenue from operators attracted by their lax policy. As regional coordinating councils are primarily focused on monitoring and facilitation, there is a need for inter-assembly cooperation platforms where implementation issues can be addressed. In GAMA, a first attempt at this has been the creation of GAPTE but it is enjoying limited support and ownership from the 13 assemblies and is largely seen as a project-based institution. Another example is the difficulty experienced in planning, organizing, and regulating public transport since it is done by several entities with different interests and capabilities while trotto routes sometimes cross as many as three MMDAs. Finally, organizing traffic in the most efficient way is also a challenge when main actual or potential corridors fall under the responsibility of several MMDAs as well as national agencies (DUR or GHA).
- **GAPTE's structural weaknesses.** GAPTE was created in 2014 after consideration of international experience and an in-depth analysis of legal alternatives so that it would become the metropolitan mobility agency of GAMA. The creation and structure of GAPTE is fully consistent with the policy recommendations of the Ghana Urbanization Review carried out by the Government in 2014. Indeed, the analysis of international best practice in inter-jurisdictional coordination prepared for the Review has suggested that the “Single Purpose District”, which means the consolidation of public service through inter-jurisdictional coverage of one or many sectors or functions, as made possible by the Local Government Acts 462 and 480 (1993) is currently the optimal model to use in Ghana's metropolitan areas for activities of common interest to adjacent MMDAs GAPTE was registered as a private company owned by thirteen MMDAs of GAMA. Its main objectives, as described in the company's regulations, are to develop and implement systems for urban

transport management, network planning, permitting, and service contract management. In the pursuit of these goals, GAPTE’s members agreement lists its primary functions covering three main areas, as mentioned before:

- urban transport planning, data collection, and knowledge enhancement;
- development of standards and requirements for public transport services as well as coordination of and support to the departments of Transport of the MMDAs, and
- procurement of public transport infrastructure and services.

However, ambiguity remains regarding mobility planning, since part of this responsibility is vested in the Departments of Transport of the MMDAs (responsible for trotro and taxi operations at the local level) and GAPTE's mandate does not clearly cover the full multimodal scope. GAPTE currently faces important challenges in terms of financial and human resources. It does not benefit from a secure line of funding, which threatens its viability. Besides, though GAPTE's staff has the adequate skills to carry out most of its current functions, it is too limited in number to fulfill its many missions (as listed above). A more general difficulty facing GAPTE stems from the ambiguity of its position – half-way between a transport authority and a transport operator – which limits its ability to take on the transport planning role that it is meant to have as part of the project.

- **Institutional capacity varies significantly across metropolitan areas.** Secondary cities are generally the weakest, as decentralization is still underway and the departments of the municipal and metropolitan assemblies involved in urban transport have limited understanding of the urban transport sector and low capacity to take effective action at this stage. Kumasi does not fall in this category and has generally much stronger departments: decentralization is completed, and competent staff is in place. However, there are no formal processes and no institutional arrangement to guide and coordinate action among all departments and local governments concerned as well as with the Ministry of Roads and Highways. In addition, so far, capability has not translated into effective action except for the registration and regulation of public transport operators. Accra metropolitan area is on a par with Kumasi but has gone one major step further by creating GAPTE. On the whole, the three subjects for which institutions involved in urban transport most need strengthening are mobility planning, public transport operations and regulation, and traffic management. Smaller cities do not have a department of transport and urban mobility issues are handled by the urban roads department.

### Strengths

- Strong agencies for the delivery of infrastructure projects.

### Weaknesses

- Lack of institutional clarity in the mandate of the different ministries and agencies.

<ul style="list-style-type: none"> <li>■ Existence of a metropolitan transport authority in Accra (GAPTE) and in Kumasi (KMA).</li> <li>■ Established Departments of Transport at MMDAs levels.</li> </ul>	<ul style="list-style-type: none"> <li>■ GAPTE has to handle operational matters and cannot focus on its planning mandate.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>■ Potential for institutional development and inter-agency cooperation around:                             <ul style="list-style-type: none"> <li>● existing scheduled bus services (Aayalolo) with some dedicated infrastructure</li> <li>● plans to expand Aayalolo services in Accra and develop a BRT in Kumasi.</li> </ul> </li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>■ Risks regarding the financial sustainability of GAPTE.</li> <li>■ Fragmentation of responsibilities for urban transport between an increasing number of ministries.</li> </ul>

Table 6: SWOT matrix of stakes linked to institutional framework and management of urban transport

Sector		Urban Planning	Public Transport				Public spaces				
			Bus stations (or bus terminals)	Institutional buses	Paratransit	Taxis (passenger cars)	Road infrastructure and road network	Traffic management	Parking	Non-motorized modes	
										Walking	Cycling
Strategical level <i>What strategies? With which resources?</i>	Policy and planning	Land Use and Spatial Planning Authority	DUR / MMDAs		MMDAs	Ministry of Transport	Ministry of Roads and Highways		MMDAs	Ministry of Roads and Highways and MMDAs	Non-existent (project based)
	Funding	Ministry of Finance		MoT	Private Operators	Private Operators	Ministry of Finance		MMDAs	Ministry of Finance (project based)	
Tactical level <i>What services ought to be developed? How to go about it?</i>	Regulation	MMDAs	MMDAs	GAPTE, MMT, etc.	MMDAs (DoTs)	Ministry of Transport and Transport Unions	Ministry of Roads and Highways	DUR, GHA, MMDAs	MMDAs	Department of Urban Roads (DUR)	
	Licensing, permits and contracting				DVLA, DoTs	DVLA, MMDAs				DUR	
	Fare system	Ministry of Transport	GRTCC		Ministry of Transport						
	Infrastructure, Equipement	Local Government	Ghana Highway Authority and Department of Urban Roads			Ghana Highway Authority and Department of Urban Roads		Ghana Highway Authority, Department of Urban Roads and MMDAs		MMDAs and Department of Urban Roads (DUR)	
Operational level <i>How to produce services efficiently?</i>		MMDAs and Unions	GAPTE + BRT Companies ; MMT	Private Operators	Private Taxi Owners	Ghana Highway Authority, Department of Urban Roads	Motor Transport and Traffic Directorate (MTTD)		MMDAs		
Problematic		<i>Responsibilities not allocated, unexercised or conflicts between actors annihilating the action</i>									
Insufficient		<i>Responsibilities not sufficiently defined and latent conflicts between stakeholders</i>									
Non applicable											

Table 7: Governance Matrix in Accra

### 3.2 Funding for urban transport management

- **Public finances are constrained, and operational expenditures consume most of the national budget.** Facing high levels of indebtedness (72% of GDP in 2015), Ghana signed a 920 million USD extended credit facility with the IMF in April 2015, which was extended by one year in 2017. Under this program, the IMF fiscal targets require Ghana to reduce the deficit by cutting subsidies, decreasing the public sector wage bill, strengthening revenue administration, and increasing tax revenues. In connection with this economic situation, the national budget focuses on recurring expenditure and makes little space for new investments. Out of a total budget of 67 billion GHC (13.9 billion USD), the 2018 Appropriation Bill earmarked 6.8 billion for capital expenditure – half of which will be funded through foreign financing. The recent weaknesses of the Ghanaian economy and the ongoing IMF program directly affects the capacity of GoG to appropriately fund urban transport management. The recruitment of civil servants has been frozen to comply with IMF guidelines, which limits the ability of both national and local government to adequately staff the institutions in charge of urban transport. In the same way, tight public finances rule out the possibility of state subsidies to transport operations. While there are currently no direct subsidies to public transport operations, it can be considered that the purchase of high capacity vehicles used for Aayalolo services by the Ministry of Transport is a form of in-kind contribution to urban mobility.
- **Most infrastructure investment comes from international donors and foreign loans administered via the central government.** Not only does this reality constrain the total volume of funds available as well as the timing of their release, but it also introduces significant inefficiencies. For example, priority is often given to large, highly visible, and geographically concentrated projects so that smaller, dispersed, but sometimes more economic, projects are neglected. There is generally no donor to finance small traffic management and parking schemes or stand-alone facilities for pedestrians and cyclists. Support for informal public transport (especially the trotro industry), although vital for the accessibility of many economic and social activities for most of the population, especially the poorest majority, is also often neglected. Dependence on international donor funding also undermines the government's capacity to determine and implement a national urban transport strategy. To be financed, investments have to be aligned with the agenda of international finance institutions, which are not always coordinated among themselves, as sometimes institutions are not aware of the different on-going projects. This results into a project-based approach, where funding opportunities, instead of strategy, drive the agenda.
- **MMDAs' insufficient budgeting for urban mobility.** Lack of funding at the national level has repercussions at the local level. One of the main sources of funding of MMDAs is the District Assemblies Common Fund (DACF), which is replenished every year from the national budget. The Constitution stipulates that no less than 5% of the state budget should be paid into the DACF. In practice, the 2018 Appropriation Bill makes provision for 1.8 billion GHC to be paid into the DACF, which represents 2.5% of the national budget. This amounts to approximately 406 million USD, to be split between more than 200 MMDAs (transport being one of many sectors competing for funding). What is more, only half of this amount is directly paid into the budget of the assemblies, the rest being distributed in the form of indirect transfers through national programs. Budget funds allocated by GAMA's MMDAs for the running costs of their departments of transport and urban roads (a few tens of thousands of GHC according to MMDAs sector specialists) are vastly inferior to their needs for performing their essential functions and carrying out basic studies. Funds allocated for maintenance and investment in urban transport infrastructure and facilities (at best a few million GHC) are also under dimensioned and out of proportion with the needs. Despite the lack of data on this subject, it seems that, for most (but not all) of the past years, the total amount of funding for investment in urban mobility in GAMA has been well below the level

deemed necessary by international benchmarks in a large conurbation of an emerging country like Ghana, which is about 0.5 to 1% of the gross domestic product of the urbanized area.

- **Resource mobilization from the urban mobility sector is not fully taken advantage of.** Some sources of funds that are directly used in other countries for urban mobility, like vehicle registration fees and fuel taxes, do not benefit the urban mobility sector in Ghana. At the local level, Legislative Instrument 1961 states that "non-tax revenue collected by a department of a District Assembly shall be retained by that District Assembly and be used for the performance of the functions of that department". However, fees collected by DoTs for operators' licenses and permits go into MMDAs' general budgets and their proceeds do not benefit directly the sector. MMDAs have ownership over transport terminals (also known as lorry parks), which constitute key nodes in the transport system. However, revenue generated by these valuable assets could be optimized and managed in a more transparent and systematic way. Other large potential sources of funds like sales taxes, property taxes, and **the capture of land value increases are currently not used for urban mobility.** There again, the legislation entitles MMDAs to collect betterment taxes (Act 462/936 and LI 1961), but it is rarely employed in connection with transport projects.
- **Lack of consolidated vision.** Little is known about total public expenditures for urban mobility, although the design of improvements in financing should start by an assessment of its past volumes. It would probably show that, in the few past years, substantial expenditures have been made through large infrastructure projects like the financing of the Kumasi bypass or of the Kwame Nkrumah Circle Flyover in Accra. Because funding for urban mobility comes from various entities (national ministries, agencies and departments, as well as MMDAs) and in different forms (operating and capital expenditure, state and donor funded, internally generated funds...), it is difficult to build a comprehensive vision of financial flows supplying the sector. Yet, this information would be useful in strategically using available resources. Indeed, it is possible that the challenge is just as much to redirect expenditures towards higher-yielding investment as to increase their total amount.

## Financial flows in Accra

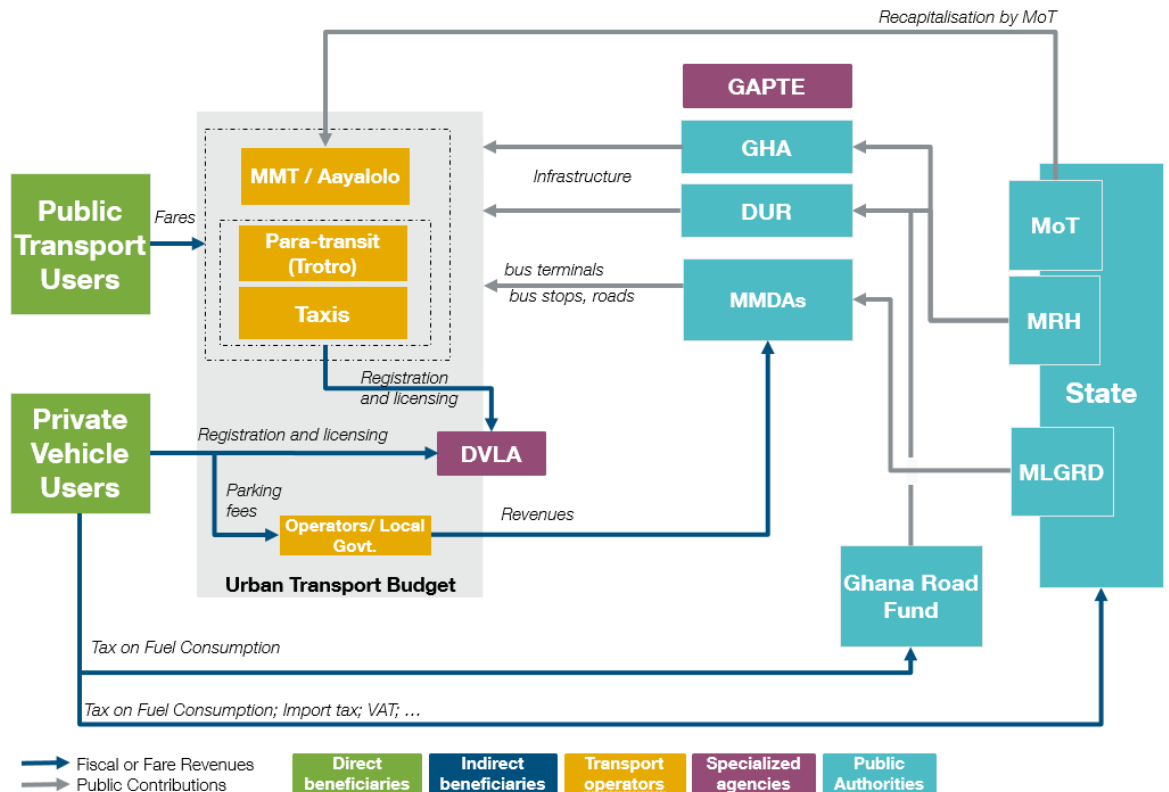


Figure 17: Financial flows in Urban Mobility in Accra

- Absence of sustainable sources of funding for GAPTE.** The Greater Accra Passenger Transport Executive was created as a company limited by guarantee, which was meant to be funded from two main sources:
  - a “system user fees” paid by the bus companies operating the high level “Type B” services on the Amasaman and Adenta corridors, which were expected to be launched in 2014 for Amasaman and 2016 for Adenta (it was assumed that this user fee would amount to a very high 15% of passenger revenues, net of collection charges); and
  - a contribution from the MMDAs estimated at about 10% of the revenues generated by the permits and various fees paid by public transport operators.

This mode of funding, mainly based on the “system user fee” paid by Aayalolo operators, is in fact quite unique among similar metropolitan urban mobility agencies. In theory, it has a number of important advantages. It can be stable and provide relatively large amounts of funding once bus operations have reached a substantial level. It also establishes a direct link between the services provided by GAPTE and the payment made by operators, so it can be understood by stakeholders and deemed legitimate. Finally, it is independent from the political process and the uncertainties and possible up and downs of the State budget. However, as the recent events regarding GAPTE have shown, this mode of funding also carries substantial risks as it is hostage to the success of Aayalolo bus operations. If these operations are not profitable (as is currently the case), it is highly likely that the system user fee will be considered a lower priority and will not be paid or will be paid in low amounts that may not be sufficient to adequately fund GAPTE. If on the contrary the amount is high, it is possible that GAPTE will be under political pressure to use its funding for activities that are outside its mandate as the experience with dedicated taxes or charges has often shown in other countries. In any case, the current percentage of total

passenger revenues to be paid as system user fee (15%) is probably far too high to be accepted by all stakeholders as legitimate.

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>■ Existence of fuel levy and of a road fund</li> <li>■ Budgetary allocations made available for infrastructure development</li> <li>■ Support from development finance institutions</li> </ul>	<ul style="list-style-type: none"> <li>■ Constrained national budget</li> <li>■ Lack of predictability regarding national support to the sector</li> <li>■ Focus on hard infrastructure at the expense of other dimensions of mobility</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>■ Possibility to expand/increase existing taxes</li> <li>■ Untapped fiscal potential (e.g. land value capture)</li> <li>■ Local taxes not fully taken advantage of (e.g. inefficient taxing of trotro operators)</li> </ul>	<ul style="list-style-type: none"> <li>■ Increasingly tight strings of the public purse</li> <li>■ Insufficient transfers to MMDAs to fulfil their responsibilities (i.e. regulation of the trotro sector)</li> <li>■ Need to subsidize publicly run bus operations</li> </ul>

*Table 8: SWOT matrix of issues and options linked to dedicated funding sources of urban transport*



### 3.3 Civil society participation in urban transport management

- **Civil society organizations present in Ghana are not particularly active in the field of urban transport management.** The main think tanks and NGOs focus their activities the promotion of good governance, democratic principles, and accountability of public institutions (among others: Imani, Institute for Democratic Governance, SEND Ghana). Their modes of intervention include the organization of workshops and events and the publication of studies. Sectoral studies produced by these organizations tend to focus on social sectors such as access to water and sanitation or education. Their expertise does not cover the specific issues related to urban mobility and they do not lead advocacy efforts in this area. Yet, there is both room and cause for these organizations to become active in this field. They could do so in three main ways:
  - by relaying the population's expectations and dissatisfaction with current mobility conditions and services to local authorities;
  - by developing sectoral knowledge and technical expertise to be in a position to propose concrete, specific improvements;
  - by monitoring the implementation and impacts of ongoing projects and demanding tangible results for projects financed on public funds.
  
- **Kwame Nkrumah University of Science and Technology is the main academic center of expertise** in the field of urban transport. Based in Kumasi, it trains the majority of engineers working in the sector. New master's programs in transport planning and road and transport engineering are being developed by KNUST (Kwame Nkrumah University of Science and Technology) in partnership with Ecole Polytechnique Fédérale de Lausanne (Switzerland) with support from SECO. This new curriculum will shift the focus away from an infrastructure-based approach and towards a more integrated approach of urban mobility and urban development.
  
- **A strong and institutionalized representation of sector professionals exists in Ghana.** The Trades Union Congress (TUC) is the main umbrella organization for trade union activities in Ghana, representing some 500,000 workers. It is composed of eighteen affiliated national unions, one of which is the Ghana Private Road Transport Union (GPRTU). GPRTU is the main association of paratransit professionals (trotros and taxis), gathering 70% of the sectors' operators. This structure constitutes an effective channel of communication between operators and public institutions. At the national level, its main counterpart is the Ministry of Transport, with which GPRTU has a long history of engagement. This relationship is structured around two main areas of cooperation:
  - **Periodic negotiation of transportation fares.** Following variations in fuel prices, operators' representatives negotiate hikes in transportation fares with the authorities.
  - **Acquisition of rolling stock.** MoT has historically assisted GPRTU in the purchase of newer vehicles, by acting as intermediary or guarantor on large transactions.

Yet, this engagement is limited in scope and does not address fundamental needs of the sector in terms of training, standardization, and service quality improvement.
  
- There are no **processes for public involvement** and consultation in the decision-making process regarding urban transport investments or operations. Establishing such processes would much help planners, technicians, and decision makers understand and act upon the population's real needs and priorities in terms of mobility and accessibility. In particular, the costs of congestion for all users, including public transport passengers, and the trade-offs between quality of public transport service and its price should be better understood in order to prioritize government action. Systematic consultations with the population, together with data collection, are necessary to do so.

- **Inadequate levels of accountability.** This is a major consequence of the fragmentation or absence of allocated responsibilities. Linked with the dearth of data, as mentioned above, this does not promote transparent decision making and taking full account of the broader public interest. The media regularly reports on urban mobility issues that are of interest to the general public (congestion, infrastructure development and road safety in particular), but it rarely takes a critical stance on information and reports provided by official sources. There is a lack of investigative journalism liable to make public institutions and officials accountable for their actions or the results of the projects that they implement. In the same way, academia rarely makes its voice heard to challenge the status quo with technical expertise.

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>■ A strong center of expertise and knowledge production at KNUST, contributing to the link between government and society.</li> <li>■ Presence of international NGOs/initiatives in the field of road safety (Bloomberg, Amend).</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>■ Lack of accountability of public institutions regarding the delivery of transport projects.</li> <li>■ Absence of interest groups representing public transport users.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>■ Moving the conversation in the media beyond roads accidents and infrastructure and towards public transport.</li> <li>■ Involving citizens in the design of BRT projects and creating a forum for public discussions on this subject.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>■ Preservation of status quo and notion that nothing can be changed.</li> <li>■ Framing of the urban mobility discourse as a pure engineering question.</li> </ul>

Table 9: SWOT matrix of issues and options linked to civil participation in urban transport

### 3.4 Multi-modal planning and operations for city centers

- **Although it is identified in the National Transport Policy (2008), integration between land use planning and urban transport/mobility planning is non-existent in Ghana.** Even when addressed separately several deficiencies are evident, as there are serious shortages in the framework for land use planning and management and approaches on urban mobility planning tend to focus on each transport mode separately and almost exclusively on road infrastructure. As noted in the recent Urbanization Review: “Inflexible land ownership systems, unresponsive legislative framework, undue political interference, acute human resource shortage, and inadequate sustainable financial resources are among the key challenges facing effective urban and land use planning and the ability of MMDAs to deliver effective solutions.” “The management of the bulk of the land (critical to planning as a spatial activity) is in the hands of chiefs and other customary landowners. However, ineffective coordination, communication and harmonization between customary landholders and public planning agencies lead to a situation where chiefs and others dispose of land for purposes other than what it has been zoned for by planners.” **The**

**inability to reserve adequate space for future road and public transport infrastructure is a major problem.**

- One of the most important consequences is that land is not reserved for transport infrastructure to be developed when the need arises, and economic and social activities have spread organically over the urban area without much concern for their connections to and impact on the arterial transport network. **This lack of coordination is a major reason for the high traffic congestion in major cities.**
- Except for the historic centers, production and commercial activities, public services, and thus jobs, are scattered over a great part of the urban area and the emerging centralities seem to be more the result of opportunistic investments and market forces than an effort by public authorities to create secondary and tertiary centers and encourage the positive externalities that such centers would generate if adequately structured. As a result, the **urban form in any of the three cities is far from optimum from a transport system point of view and in particular not conducive to the use of public transport.**
- **As for cycling, except for some remarkably well-planned dedicated lanes, there is no network connectivity for cyclists in GAMA.** Bicycle paths are not maintained properly, and they are often occupied by street vendors or destroyed because of new constructions. This, together with the density of traffic and the uneven condition of road pavements make biking prohibitively dangerous, the main reason why biking accounts for less than 1% of all urban trips. In Kumasi, conditions for cycling also show major deficiencies. Despite the overall situation, good examples also exist, namely the remarkable dedicated bicycle lane joining Takoradi’s CBD to its fast-growing northwest settlements.
- **Regarding walking, Accra and Kumasi show concern for pedestrians,** principally in centrally located areas. This is particularly the case for the Greater Accra. There, in many parts of the central business district, sidewalks are in good condition, attention is given to street crossing, and efforts are made to slow down traffic and make public space more secure. The overuse of sidewalks by street hawkers and illegally parked cars is limited to market areas. Yet, outside Accra’s city center, there are very few paved sidewalks and the open public space, when it exists, is often made unsafe by holes and open drains and encumbered by vehicles, stalls, and various objects. More importantly there are generally no facilities to cross the streets and pedestrian paths are not continuous. Access to public transport stops on main streets are sometimes very difficult and dangerous. In Kumasi, the general situation across the city presents major deficiencies, as pedestrian facilities are very limited. Open drainage and hostile pedestrian environments are also important issues, even in areas where a great level of pedestrian activity takes place such as the Central Market area. The conflict between vehicles and pedestrian in this area is particularly notable. As in most African cities, the situation is especially difficult for persons with reduced mobility and in informal settlements.

#### Strengths

- Presence of pedestrian infrastructure in city centers and some bicycle lanes in Accra.

#### Weaknesses

- Lack of connectivity between modes and focus on individual cars.
- Non-recognition of NTMs as key modes of transport.
- Kumasi transport master plan, and Accra to a lesser extent, is not really addressing mobility issues.

Opportunities	Threats
<ul style="list-style-type: none"> <li>■ Building on the development of mass rapid transit systems (e.g. by planning TOD).</li> <li>■ Leveraging to flexibility of trotro services to create a multimodal system.</li> </ul>	<ul style="list-style-type: none"> <li>■ Continuous increase in car ownership bringing cities to a gridlock.</li> <li>■ Incapacity to create land reserves to develop mass transit infrastructure.</li> </ul>

Table 10: SWOT matrix of issues and options linked to multi-modal planning and operations for city centers

### 3.5 Public transport performance (with a focus on paratransit reform)

- **Public transport is dominated by minibuses (“trotros”) and shared taxis**, the latter particularly in Kumasi and Takoradi. There are almost no modern, fuel efficient, medium-size or large buses. Buses depart from the bus terminal mostly when they are full, and no passenger pick up is authorized close to these terminals. Services are not scheduled and not reliable. Vehicles are old, in very poor condition, and with obviously high emissions of pollutants. Despite the current situation, the system is adaptable and appears to satisfy demand quite well in quantity, if not in quality. Thus, the urban areas appear to be relatively well covered. In Accra, for example, trotros and shared taxis provide service on about a thousand different routes. Fares are controlled and relatively cheap (with the basic fare being 0.8 GHC or about 0.25 USD for a short trip in Accra, which is less than in many African capitals).
- According to the survey carried out for the KOICA study (for which more than 8,000 passengers were interviewed), **public transport does not adequately serve the demands of the population**. Waiting time at the trotro terminals is on average more than 22 minutes (not counting the time lost walking to the terminal) and the average trip time is exceedingly long at 55 minutes on average. As shown in the diagram below, the proportion of very long trips (above one hour) is almost 45%. Despite the fact that there is an amazingly large number of trotro lines (315 active lines for Accra Metropolitan Assembly alone), about half of all passengers have to connect to a different bus once or more often in order to complete their journey. Trotros and taxis are generally old (an average age of 17 years for trotros) and poorly maintained. They are therefore likely to be slow and have high fuel consumption. This, combined with the poor operational indicators, makes plain that public transport, though able to move large numbers of passengers, is not economically efficient in GAMA.
- The first step was accomplished with the **establishment of high-quality bus services on the Amasaman corridor - Aayalolo services**. Unfortunately, the service is in danger of failing because of poor ridership and unsustainable financial situation. Currently, the modern, fast, efficient, and highly comfortable buses newly operating on that corridor carry only about 250 passengers/day each while they should carry about 700 passengers/day for the operations to financially break even. The deficits are not met by the operating companies, as they should, so that the Greater Accra Passenger Transport Executive (GAPTE), who is de facto running the buses, keeps on accumulating arrears, which threatens its survival. An international comparison would show that, with adequate planning and organization, buses like those operating on the Amasaman corridor should each carry 800 to 1,000 passengers/day. As the average travel distance is fairly low, the average speed of travel (at 4 to 5 km/h) is another sign of poor performance. It appears indeed logical that confronted with low speed of travel, people would seek to reside closer to their workplace than would normally be expected. This point can however be argued. Other data (collected for example for the feasibility study for the Amasaman CBD bus

corridor) show much higher speed for public transport vehicles (around 25 km/h outside the Tema – Accra motorway and 16 km/h inside). It seems in fact that vehicle speed varies a lot depending on which part of Greater Accra is considered. The road system is such that there are “choke” points which often are unavoidable and very much slow down traffic in the corresponding part of town. Besides travel time, extreme unpredictability of commute time is identified as a major problem, which is another sign of poor performance.

- A new formal regulation of public transport operators is being put in place by the transport departments of the MMDAs with operating permits generally allocated to branches of the operators’ associations for well-defined routes and with the objective to plan supply and monitor performance. In Kumasi, this process is being conducted by the Urban Passenger Transport Units (UPTUs). This regulation is important in order to rationalize the sector and gradually improve accountability of the operators and service quality for the passengers. However, detailed methodologies to plan and monitor public transport supply are not yet established and the necessary means are not available to the transport departments.
- **The lack of data** makes it difficult to plan improvements to public transport. Transport data is scarce to inexistent in Ghanaian cities. Both travel demand and the supply of transport services are not sufficiently documented to inform transport and infrastructure planning exercises. In a rapidly expanding metropolis like Accra, for instance, it would be important to have origin-destination data available data in order to better understand the travel patterns of the population and to target public interventions accordingly. Traffic counts are carried out on a project-basis, and there is no systematic use of the data to program (or update the programming of) traffic signals. Assemblies do register paratransit services (trotros), but this information remains coarse and is not consolidated at the metropolitan area level. Worth noting is the AccraMobile initiative, now in its third phase, which consisted in mapping and collecting operational data on all trotro routes active in Accra. This data was collected using smartphones and released in digital format, but would need to be expanded in scope to include all the assemblies of the Greater Accra Metropolitan Area. The ongoing Ghana Urban Mobility and Accessibility Project, a capacity-building program financed by SECO, makes provision for the identification of data needs, and the implementation of additional data collection campaigns to be used both for traffic management and mobility planning purposes.

Data	Scope/area	Mode and year of acquisition	Owner/custodian of data	Availability and format of data	Regular updates	Comment
<b>Land use</b>						
Spatial distribution of population and jobs	National	2010 Census	Ghana Statistical Service	Aggregated data available online	Yes	No spatial data on jobs distribution
<b>Travel demand</b>						
Modal split	National	2012 Household Transport Survey	Ministry of Roads and Highways Ministry of Transport Ghana Statistical Service	Report available online, but not raw data	Yes (this is an update of the 2007 survey)	Only covers trips to the workplace
Origin-Destination data	n/a	n/a	n/a	n/a	n/a	OD data is not available for any of Ghana's metropolitan areas
<b>Traffic</b>						
Traffic counts	Accra	2016 GAMA Transport Master Plan	Ministry of Transport	No	No	Traffic counts at 28 locations in the Greater Accra Metropolitan Area
<b>Parking</b>						
Occupation and rotation data	n/a	n/a	n/a	n/a	n/a	AMA has carried out a mapping exercise of on-street parking but no occupation or rotation data is available
<b>Public transport</b>						
Route itineraries and stops	Accra	2017 AccraMobile Project Phase 3	AMA	Network map available on OpenStreetMap (junglebus.io/accra/)	Partial (2017 data is an update of 2015 data)	Data collected with smartphones by AMA/AFD/Concordia/Transitec/JungleBus
Level of service	Accra	2017 AccraMobile Project Phase 3	AMA	GTFS dataset available on GitHub	Partial (2017 data is an update of 2015 data)	Level of service is estimated. Detailed data available for 12 trotro stations as part of AccraMobile Phase 2
Users satisfaction data	n/a	n/a	n/a	n/a	n/a	No data available
<b>NMTs</b>						
Pedestrian/bicycle counts	n/a	n/a	n/a	n/a	n/a	No data available
Users satisfaction data	n/a	n/a	n/a	n/a	n/a	No data available
<b>Models</b>						
Traffic model	n/a	n/a	n/a	n/a	n/a	No model
Transport model	n/a	n/a	n/a	n/a	n/a	No model
<b>Externalities</b>						
Road Safety	National/Accra	Permanent monitoring by NRSC Regular reporting by AMA	National Road Safety Commission BIGRD/WRI	Reports released online but raw data not released	Yes	Bloomberg Initiative, WRI, and AMA collecting data in addition to data collected regularly by NRSC
Air Quality	Accra	Permanent monitoring	Environmental Protection Agency	Not released	Yes	EPA collects data on air quality through permanent monitoring stations, but it is not released publicly
Gender issues	n/a	n/a	n/a	n/a	n/a	No data available

Table 11: Availability of urban transport data in Ghana

### Strengths

- The trotro industry provides transport services in quantity at no cost to the state.
- A flexible and demand-responsive mode of transport.

### Weaknesses

- Inconsistent service delivery and low quality of service for the user.
- Generation of externalities due to a lack of regulation of the sector.
- Vehicles owners are neither organized nor represented.

Opportunities	Threats
<ul style="list-style-type: none"> <li>■ Improving access to financing for operators and unlocking the potential for a fleet renewal program.</li> <li>■ Professionalization of operators to integrate the industry with scheduled transport services.</li> </ul>	<ul style="list-style-type: none"> <li>■ Race to the bottom as a result of strong internal competition.</li> <li>■ Atomistic sector difficult to reform due to the multitude of actors involved.</li> </ul>

Table 12: SWOT matrix of issues and options linked to public transport performance

### 3.6 National government support for urban transport management in secondary cities

- **The central government provides limited support to the MMDAs.** Even in a decentralized environment as in Ghana, the central government has a key role to play in developing human resources, disseminating information, ensuring that experiences are shared among all practitioners, and sustaining a dynamic network of experts, activities for which it has a comparative advantage and economies of scale. These tasks have not been performed in the recent past.
- **The Ministry of Local Governments and Rural Development (MLGRD) has led the decentralization process and continues to do so gradually** and with much consideration for the major challenge of building up the institutional capacity of MMDAs. It has the main responsibilities of stimulating, monitoring and evaluating the actions and performance of the MMDAs and providing them with both technical and financial support. In practice, it also exercises a guidance and control role. The Policy, Planning, Budgeting, Monitoring and Evaluation department (PPBME) of MLGRD is the key entity for this, together with the Local Government Service (LGS), which handles the organizational and human resources aspects across sectors. LGS recently initiated activities aiming at strengthening and harmonizing the roles of Departments of Transport within the MMDAs. There is no specialized unit in MLGRD to handle urban mobility issues. These issues are considered as an integral part of urban development and are followed up by PPBME’s Urban Development Unit (UDU), which monitors developments in urban areas and provides support to MMDAs mainly through donor-financed projects. At this stage, UDU’s role in relation to urban mobility is to stimulate and coordinate efforts by the MMDAs and GAPTE, in Accra.
- **Although there are major variations between MMDAs, most of the departments of transport are relatively new and not fully settled in their responsibilities;** they need to greatly enhance in their capacities. The departments of transport have concentrated on the registration and regulation of public transport operators, and in doing so, have tried to match the population’s mobility demand and the supply of public transport by trotros and taxis.
- **Deficiency of coordination and integration within and across assemblies.** It is generally project-based and happening as needs arise. While departments collaborate on a functional basis, they rarely have the opportunity to work together on strategic or planning issues. It appears, for instance, that transportation planning (by the DoTs) and urban planning (by land use and spatial planning departments) are rarely considered jointly. Part of this can be attributed to the fact that planning functions are generally not very developed for lack of means (available staff having to

focus on operational tasks). Yet, this deficit in integration also stems from the organization and institutional culture of the MMDAs.

- **At the current stage in the decentralization process, the budgets of MMDAs are still very much constrained.** These budgets represented less than 1% of GDP in 2012. Local revenue mobilization is also poor. On average, 80% of MMDAs revenues came from transfers from the central Government and foreign donors, and only 20% from the MMDAs’ internally generated funds<sup>21</sup>. Also, about 64% of the budgets were spent on investments while in most countries, operations (including staffing) and maintenance take the lion’s share of local budgets. In the case of the Accra Metropolitan Assembly’s (AMA) the largest, by far, of all MMDAs in GAMA, the situation is different, although budgets are still very low. In 2012, total revenues were 40.9 million GHC of which 23.0 million came from internally generated funds and 17.9 million from grants. Operating and capital expenditures were 24.3 million GHC and 10.4 million GHC respectively. The resulting surplus is an indication of AMA’s weakness in implementing investment projects and not of an adequate level of funding.
- **Institutional capacity in secondary cities is generally weak**, apart from Kumasi, as the departments of the municipal and metropolitan assemblies involved in urban transport have limited understanding of the urban transport sector and low capacity to take effective action at this stage. There are no formal processes and no institutional arrangement to guide and coordinate action among all departments and local governments concerned.

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>■ A strong process of decentralization, advanced through successive phases.</li> <li>■ Support from the national through agencies and MLGRD/LGS.</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>■ Lack of capacity at the local level (human and financial).</li> <li>■ Low budgets of MMDAs for urban mobility.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>■ Developing capacities to regulate and organize public transport at the local scale.</li> <li>■ Creation of inter-assembly governance bodies to deal with urban mobility issues.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>■ Municipal fragmentation making it harder and harder to manage urban mobility at the relevant scale.</li> <li>■ Lack of metropolitan governance.</li> </ul>

*Table 13: SWOT matrix of issues and options linked to national government support for urban transport management in secondary cities*

<sup>21</sup> Ghana Urbanization Review, Phase 2, Urban Development and Infrastructure Municipal Financing



## 4. Recommendations

### 4.1 Presentation of the EASI Framework

The six priority areas presented in the previous section are broadly articulated with the different areas of intervention of the EASI conceptual framework according to the table presented below (figure 18):

	Enable	Avoid	Shift	Improve
Institutional Framework	Dark Yellow	Light Yellow	Light Yellow	Light Yellow
Dedicated funding sources	Dark Yellow	Light Yellow	Light Yellow	Light Yellow
Civil society participation	Dark Yellow	Light Yellow	Light Yellow	Light Yellow
Multi-modal planning and operations	Light Yellow	Dark Yellow	Dark Yellow	Light Yellow
Public transport performance	Light Yellow	Light Yellow	Dark Yellow	Dark Yellow
Support of national government for urban transport management in secondary cities	Dark Yellow	Dark Yellow	Dark Yellow	Dark Yellow

Figure 18: The six thematic areas of the study and the EASI conceptual framework

In order to best support decision-makers in improving the conditions of mobility and accessibility in Ghanaian cities, this report proposes a series of recommendations aimed at accelerating the implementation of a sustainable urban mobility policy. These recommendations, which have been widely discussed during the National Urban Mobility Forum, aim to respond at national and local level to the main challenges of the sector in Ghana. During the Forum, the relevance of the recommendations proposed in the interim report was acknowledged by participants and minor adjustments were proposed. The amended version of the recommendations is presented in this final report. The improvement of urban accessibility and mobility is a complex task, and these recommendations aim at mobilizing all stakeholders around these 14 recommendations.

### 4.2 Recommendations for governance efficiency

#### 4.2.1 Policy-level

##### **E1: Update the 2008 National Transport Policy and establish an overarching National Urban Mobility Strategy**

The prime policy document for the transport sector is the National Transport Policy (NTP) of 2008 (a new NTP is under revision at this date), which addresses urban mobility - urban transport – in a limited, poorly structured way and does not recognize the leading role of urban mobility in the economic development of Ghana.

This could be addressed through the definition of a comprehensive National Urban Mobility Strategy through a participatory approach involving Ministries, Departments, Agencies and Local Authorities.

This strategy should outline major guiding-principles to respect, set out objectives to aim for and create the enabling environment in which the objectives can be achieved. It is recommended that this strategy:

- **Define the guiding-principles for all urban mobility planning and design procedures** that should address integrated land use planning and transport planning, multimodal and intermodal mobility planning, with specific attention to the integration of non-motorized transport modes. These principles can be derived from the Transit-Oriented Development Standard<sup>22</sup>, defined as follows: develop neighborhoods that promote walking (walking); prioritize non-motorized transport networks (cycle); create dense networks of streets and paths (connect); locate development near high-quality public transport (transit); plan for mixed use (plan); match density and transit capacity (densify); create compact regions with short commutes (compact); and increase mobility by regulating parking and road use (shift).
- **Identify priority objectives in terms of urban mobility**, following, as much as possible, the SMART objectives' definition, being S-specific, M-measurable, A-attainable, R-relevant and T-time-based.
- **Propose an action-oriented framework resulting in an Action Plan** with the identification of specific actions and measures to undertake and the related monitoring procedure.
- **Establish an urban mobility data observatory**, with the definition of the methodological framework and the identification of the incentives to ensure regular provision and storage of relevant and reliable indicators concerning urban mobility and transport. This would be fundamental in order to overcome the lack of information on the sector. This observatory would also be used as a central repository for all reports and studies on urban mobility in Ghana, ensuring their dissemination and availability to public users.
- **Recognize capacity building** as a key area of intervention. Professional training programs, with a focus on the integration between urban planning and mobility planning, should be developed and gradually implemented – starting at the local level, with the staff of the newly created Departments of Transport.
- **Be linked to a financial, mechanism, as well as have sufficient capacity to manage the implementation of such a strategy.**

The definition of such a strategy would also have an effect on the international finance of the transport sector, as it would define priorities.

***In order to give effect to this recommendation it is proposed that it be taken up by the Ministry of Transport, in close consultation with MLGRD (for the National Urban Mobility Strategy) and MRH. It is further proposed that the ministries engage MDDAs in this process, and in particular metropolitan assemblies where the challenges of urban mobility are felt the most. As a first step, it is recommended that the three ministries develop, through a series of joint work sessions, a working note that will serve as a basis for discussions towards the development of a national urban mobility strategy (which can then be prepared with the help of a consultant once the objectives are clearly set). The preparatory process should be completed within six months (by June 2019).***

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<sup>22</sup> Institute for Transportation and Development Policy (ITDP)

### **Box 1 – National Urban Transport Policy (NUTP) in 2006 in India**

In 2006, the Ministry of Urban Development, Government of India (MoUD) issued the National Urban Transport Policy, to bring about a paradigm shift in the urban transport sector, at the state and city levels, with a special focus on moving people rather than moving vehicles. The guiding principles of the policy were the following:

- Incorporating urban transportation as an important parameter at the urban planning stage rather than being a consequential requirement;
- Encouraging integrated land use and transport planning in all cities so that travel distances are minimized and access to livelihoods, education, and other social needs, especially for the marginal segments of the urban population, is improved;
- Improving access of business to markets and the various factors of production;
- Bringing about a more equitable allocation of road space with people, rather than vehicles, as its main focus.

In a federal country, NUTP 2006 was an opportunity to encourage strong and concrete measures from States and local governments (i) the creation of Unified Metropolitan Transport Authority (UMTAs) in all million plus cities, to facilitate more coordinated planning and implementation of urban transport programs and projects; and (ii) the creation of city or state level Urban Transport Funds (UTF), to help cities managing a transport dedicated capital for investment and centralize revenue related to urban transport, such as fares or taxes; (iii) the use of Comprehensive Mobility Plans (CMP); (iv) high capacity public transport systems being set up through the mechanism of Special Purpose Vehicles (SPV).

The Central Governments gave incentives to the States: financial support for mass transit (until 20% of the capital cost of the project), 50% of the cost of preparing comprehensive city transport plans and detailed project reports, 50% of the cost of project development when through public-private partnerships in order to attract private partners.

This NUTP had a strong impact on Indian urban transport sector as many cities started to develop metro projects, and elaborate urban mobility strategies. Moreover, a community of practice emerged thanks to support to centers of excellence in university, and facilitation from the Institute of Urban Transport (IUT), professional body working under the MoUD.

In 2014, IUT undertook a comprehensive review of the policy in order to better include components related to Transit Oriented Development (TOD), regional connectivity, Comprehensive Mobility Plans (CMP), service level benchmarks; and insist on the importance of non-motorized transport (walking and cyclist being completely neglected in the overall process of city development) and other low-carbon modes of transport in cities (Light rail, Mass Rapid Transit).

### **E2: Prepare and enact National Land Transport legislation**

Roles and responsibilities for urban transport are currently defined by a multitude of legislative sources establishing the various ministries, departments and agencies in charge of the various functions. There is a need to gather all existing provisions in a single piece of legislation. It is therefore recommended that an act of parliament be promulgated with the view to:

- **Clarify the mandates of the main ministries, departments and agencies** playing a role in urban mobility (in particular MLGRD, MRH, DUR, GHA, MoT, MoRH, GAPTE, MMDAs' DoTs).

At the national level, MDAs should re-center their role on strategic functions and away from implementation (to be done at the local level). Leadership of MLGRD in the sector needs to be asserted and embodied by the Minister or one of his/her deputies (who could receive a specific mandate/title to that effect). As changing the mandate of a ministry is a challenging task once the government is in power, this should be evaluated in time for the next election with the ministries involved ministries.

- **Reestablish a coordination/guidance committee of senior decision makers.** It is important to reinstate a forum or high-level committee for consensus-building and collective decision-making on urban mobility. This committee would monitor overall urban mobility performance, assess the impact of past policies and, on this basis, revise/update these policies, and coordinate/guide the actions of all government entities involved in urban mobility. It should include representatives of all government entities that have a main role to play in urban mobility, therefore at least: the Chief Executives of metropolitan areas, representatives of the Ministries of Finance, Local Government and Rural Development, Transport, Railways, Roads and Highways, Interior, and Environment, Science, Technology and Innovation, and representatives of Regional Coordinating Councils.
- **Create a legal and organizational model for the development of metropolitan transport authorities in large urban areas.** Learning from the experience of GAPTE, define the structure, mandates, and financing mechanism of future transport authorities for metropolitan areas in Ghana. The jurisdiction and competence of such institutions should transcend political and administrative boundaries and correspond to actual mobility catchment areas. Robust financing mechanisms (independent of the performance of transport operations) should be put in place, distributing responsibilities for funding between the national and local levels.

***In order to give effect to this recommendation it is proposed that it be taken up by the Roads and Transport Select Committee of the Parliament. It is further proposed that the Committee engage MoT, MLGRD, MRH, and MoF in this exercise. As a first step, it is recommended that the Roads and Transport Select Committee prepare a comprehensive assessment of roles and responsibilities in the land transport sub-sector, highlighting potential gaps and overlaps between institutions. This assessment should be completed within a fiscal year.***

### **E3: Reaffirm GAPTE’s mandate as a metropolitan mobility agency**

The establishment of GAPTE is one of the main achievements of the Ghana Urban Transport Project. Yet, this institution is fragile and faces structural challenges threatening its viability. Because of these challenges, GAPTE has not been able to perform its functions as Accra's metropolitan mobility agency. Taking account of the context and, in particular, the existing capability of MMDAs and DUR, GAPTE’s mandate should be refocused on:

- the elaboration and monitoring of the **multimodal urban mobility strategy and the planning** of public transport for the whole of GAMA;
- the **coordination of MMDAs’ departments of transport** in the regulation, monitoring, and evaluation of public transport and the consolidation of urban mobility and accessibility data for the entire urban area; and
- the **organization and regulation of high quality (type B) bus services** in GAMA.

The regulations creating GAPTE under the Companies Act 179 should correspondingly be amended and an official agreement should make explicit the sharing of responsibilities between GAPTE and the MMDA’s DoTs. GAPTE's Executive Council should include representatives of all the entities that play a key role in urban mobility in GAMA and thus have an interest in GAPTE’s performance and future

(including central ministries). A financing mechanism should be agreed upon between the main ministries having a stake in GAPTE's operations (MLGRD, MoT, MRH, MoF) and GAPTE's shareholders (13 MMDAs and the RCC).

***In order to give effect to this recommendation it is proposed that it be taken up by MLGRD. It is further proposed that MLGRD engage GAPTE's shareholders (MMDAs) and MoF in this exercise. As a first step, it is recommended that bus operations be separated from GAPTE's core planning and regulatory functions, both operationally and from an accounting point of view. Operation of the Aayalolo service should be contracted to a transport operator with service obligations and a monitoring process. This transformation should be carried out over a period of six months (by June 2019).***

#### **Box 2 – Lagos Metropolitan Area Transport Authority (LAMATA)**

Lagos Metropolitan Area Transport Authority (LAMATA), in Lagos (Nigeria) is a semi-autonomous agency reporting to the government of Lagos State established in January 2002 as part of the Lagos Urban Transport Project (LUTP) with the technical and financial support of the World Bank and after a long process which began in the early 1990s. Its very wide remit covers urban modes of transport in their entirety, including both public transport and the road network:

- Planning, development, coordination of transport policies in Lagos;
- Building and maintenance of the main roads and development of road junctions;
- Building and maintenance of the main roads and development of road junctions;
- Collection of taxes paid by road users which are allocated to funding the transport budget.

For infrastructure work under its responsibility, LAMATA uses various forms of contracts with operating companies: for the BRT of Lagos, inaugurated in March 2008, it is the BRT Cooperative, a function of the powerful transport union which is the operator; for the red line of the metro, meant to carry more than one million passengers per day, and therefore be “profitable,” a concession holder finances the construction and operation; for the blue line of the metro, the State finances the infrastructures and the concession holder the rolling stock and operation.

#### 4.2.2 Financial level

##### **E4: Leverage new revenue sources to finance urban mobility and accessibility**

A systematic study of potential revenue sources, their implementation mechanism, and how much funding they could generate should be prepared as soon as possible. This study should consider both (i) financing from the users and other direct beneficiaries of urban mobility improvements and (ii) financing from indirect beneficiaries. An overview of these sources is provided in Appendix 1 to this report. Consideration should be given in priority to the following options, which could be implemented within a short time frame:

- **expand existing taxes** on vehicle purchase and annual registration. The possibility of earmarking revenue from these taxes (currently paid into the consolidated fund) would also have to be explored.
- **review fees** on public transport operators for licenses/permits and use of terminals. These fees are collected by assemblies and could therefore easily be ring-fenced for urban mobility. Parking should also be regulated and managed at the municipal level, to become a source a revenue (starting with central and commercial areas).

- **increase taxation** on fuel. As current fuel prices are not particularly low in comparison to other African countries<sup>23</sup>, the social acceptability of an increase would first need to be assessed. Part of the proceeds from existing taxes on fuel are paid into the Road Fund, whose mandate could be expanded to include urban mobility.

In the medium term, the implementation of betterment taxes in connection with the development of transport infrastructure should also be explored, as existing legislation makes provision for assemblies to collect such tax.

***In order to give effect to this recommendation it is proposed that it be taken up by MoF. It is further proposed that MLGRD engage DVLA, MRH, and MLGRD in this exercise. As a first step, it is recommended that an inventory of all fiscal revenue linked to transport and mobility (from fuel taxes to vehicle import duties and fees paid by transport operators) be compiled. Such an inventory would provide a consolidated vision of the resources available to the sectors. This inventory should be prepared within four to six months (by June 2019).***

#### **E5: Secure consistent budgetary allocations for urban mobility, both at national and local government levels**

Sporadic funding, caused by dependence on irregular donor interventions and limited public resources, has hindered the progress of the urban mobility sub-sector. Priority should be given to stabilizing budgetary allocations to existing institutions and programs, before considering an overall increase in their budgets.

- Funding from the **national budget needs to be steady** and maintained at a high level. The economic development of urban areas has significant positive spill-over effects on the entire country. This development, linked with the competitiveness of the cities, depends much of the performance of urban mobility and the volume and quality of investment. Second, it seems fair that the national budget would redistribute fiscal resources to the MMDAs since it captures most of the resources generated locally by the transport sector, especially the taxes on fuel and on vehicle registration, while the MMDAs have few alternatives for fiscal resource mobilization. Finally, the MMDAs have difficulties at this stage to borrow funds for long-term investment.
- **MMDAs should dedicate an increased part of their budget** to urban mobility. They should in particular ensure that the operations of their departments of transport and urban roads are adequately funded. These departments cannot perform satisfactorily without equipment to collect and process data, means of transport to be present in the field, and consultants to assist with technical tasks. Operating expenditures of this type are repaid many times by the benefits from a well-functioning administration. To that effect, LI 1961 stipulates that "non-tax revenue collected by a department of a District Assembly shall be retained by that District Assembly and be used for the performance of the functions of that department", which is rarely the case in practice.

***In order to give effect to this recommendation it is proposed that it be taken up by MLGRD. It is further proposed that MLGRD engage MMDAs in this exercise. As a first step, it is recommended that MLGRD support metropolitan areas in the preparation of a medium-term urban mobility budgets, putting a cost on anticipated needs both in terms of investments and operational expenses for a period of five years. These metropolitan budgets should be prepared before the next national budget preparation.***

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<sup>23</sup> [https://www.sutp.org/files/contents/images/articles/news/2017-03-March/GIZ\\_IFP\\_2016-2017.pdf](https://www.sutp.org/files/contents/images/articles/news/2017-03-March/GIZ_IFP_2016-2017.pdf)

### **Box 3 – Urban transport authority and dedicated funding mechanism for urban mobility in Addis Ababa**

In Addis Ababa, since 2014 (Ethiopian Law No 43 November 13/2014) the municipality has placed all the powers expected of an urban mobility authority in the Addis Ababa Road and Transport Bureau (AARTB). The AARTB is a separate municipal department placed under the authority of the Mayor of Addis Ababa and managed by one Director with a current annual budget of around 8 billion ETB (approximately 290 million USD). The AARTB is organized in four distinct departments:

- The Addis Ababa City Roads Authority (AACRA), in charge of maintaining and extending the road network (currently managing 6,5 billion ETB per year, the largest budget of the AARTB, but also of the municipality itself);
- The Addis Ababa Transport Authority (TA), which organizes the public transport sector in Addis Ababa, regulates all public transport routes and fares, and provides facilities for freight vehicles;
- The Traffic Management Agency (TMA), in charge of reducing congestion and emission levels as well as improving road safety in Addis Ababa;
- The Driving Vehicle and Licensing Authority (DVLA), which regulates and registers all drivers' licenses in Addis Ababa including freight and public transport drivers.

On the 6<sup>th</sup> of December 2017, the AARTB enacted the creation of the Transport Fund Office (TFO) to which all transport fines and penalties, road users fees, as well as advertisement revenue from bus shelters will flow, representing an annual budget of ETB 1.2 to 1.6 billion (approximately between 43.5 and 58 million USD). TFO moneys are earmarked for use in the urban mobility sector.

## 4.3 Recommendations for land use efficiency

### **A1: Strengthen public control over land towards the development of transport infrastructure**

There are serious deficiencies in the framework for land use planning and management that results in the inability to reserve adequate space for future road and public transport infrastructure. Ineffective coordination and communication between customary landholders and public planning agencies lead to a situation where landowners dispose of land for purposes other than what it has been zoned for by planners. Recent changes in the legal framework have been pursued to improve spatial planning, but this has not yet been translated into actions. Land reservation for transport infrastructures is essential to mobility planning and ensures a sustainable urban development, and an emphasis should be put on the following aspects:

- **Reform the land tenure regime to facilitate public intervention**, by clarifying land rights and their enforcement, complemented by formal affordable housing, property taxes and land construction. The scope of land reform should extend beyond urban administrative boundaries to rural-urban periphery.
- **Establish joint committees** (with transport and land use representatives) for the review of urban development project, and the delivery of construction permits.
- **Create and enforce public land reservations for the construction of strategic transport infrastructure**, by clearly defining the public space dedicated for future urban transport infrastructure and setting up regulations and procedures to guarantee that it is actually reserved.

- **MMDAs need to streamline cooperation with traditional authorities** in order to deepen respect of the land-use functions by the prospective buyers and guide such developers to keeping within the laid down spatial planning guidelines.
- **Ensure the application of LI 1961 that establishes the Department of Physical Planning** (now Land Use and Spatial Planning) as a fully decentralized department in the Assemblies with the competences to “assist in the preparation of physical plans as a guide for the formulation of development policies and decisions and to design projects in the district”.

***In order to give effect to this recommendation it is proposed that it be taken up by LUSPA. It is further proposed that LUSPA engage MLGRD in this exercise. As a first step, it is recommended that LUSPA provides training to MMDAs staff of Physical Planning, Transport, and Urban Roads Departments on the integration of land use and mobility planning. The first training sessions should be organized before the end of the next financial year.***

#### **A2: Prepare or consolidate integrated land use and multimodal transport master plans based on existing documents in Accra and Kumasi**

Planning efforts have been (or are currently) carried out both in Accra and Kumasi, but do they do not adequately integrate urban development and mobility planning. In fact, urban development master plans and transport master plans have been developed separately for the two cities, for different clients and using different pockets of funding. Within existing plans, different modes of transport are generally considered as overlapping layers, rather than complementary components of a multimodal mobility system. Drawing on existing document and data, an integration and harmonization effort should be conducted to prepare or consolidate integrated urban integrated land use and multimodal transport master plans.

***In order to give effect to this recommendation it is proposed that it be taken up by LUSPA. It is further proposed that LUSPA engage MMDAs of the Greater Accra and Greater Kumasi metropolitan areas in this exercise. As a first step, it is recommended that LUSPA sets up review committees to initiate the consolidation of land use and transport master plans in the two cities. The review committees should be created within four to six months (by June 2019).***

#### **Box 4 - Urban Mobility Plans in Brazil**

Brazil’s federal government adopted the National Law on Urban Mobility, which required municipalities with more than 20,000 residents to adopt a plano de mobilidade urbana (or PMU, the Brazilian equivalent of the SUMP) by April 2015. The law concerned more than 3,000 municipalities. The PMU had to be aligned with their urban development master plan, and had to include motorized transport, public transport and active modes. The SUMPs will be reviewed every 10 years. Access to federal funding for the construction of transport infrastructure was subject to the creation of a SUMP by the towns and cities in question. The SUMPs must adhere to the following guidelines:

- Promote modal shift from private cars to public transport and active modes; towns with no public transport system must prioritize active modes;
- Reduce energy consumption by urban transport, as well as the associated emissions of GHGs and air pollutants;
- Improve road safety, particularly for the most vulnerable populations (children, the elderly, and more generally users of active modes).



The following key aspects must be considered: targets for modal split, emissions reduction, integration policy; planned improvements in public transport; collaborative planning approaches; implementation times; and monitoring and evaluation tools. Belo Horizonte is one of the rare cities that already had a SUMP, dating from 2010. The city is thus preparing to review it in order to meet federal requirements. Generally speaking, only a few Brazilian cities have the capability and expertise to submit a coherent SUMP that fully meets the federal government’s expectations. An ample share of the 3,000 towns and cities concerned by the law, due to a lack of financial and/or human resources, and sometimes to a lack of political willpower to complete such a project, will submit a document which will not actually make it possible to implement sustainable urban transport planning.

#### 4.4 Recommendations for multimodal transport system efficiency

##### S1: Support the improvement of existing transport services (trotros and taxis)

Recognize the public transport role of trotros and integrate trotros and taxis as transport service providers by clearly defining their role in the transport system and supporting their professionalization. This could be achieved by the following measures:

- **Integrate paratransit and institutional services following a trunk and feeder principle.** To do this, it is necessary to continue and strengthen the regulation efforts started in the sector as part of the UTP, by completing the establishment of the new regulatory regime for bus and taxi services, developing the capability of public transport operators, and adopting methodologies to rationalize and monitor public transport supply. They would make it possible to move in the medium term to a second stage in the restructuring of bus and shared taxi services, which would be to improve the quality of supply through service standards, dedicated infrastructure whenever possible, and renewal of the bus fleet, possibly following the example set in Dakar, Senegal.
- **Develop a legal and contractual framework for the recognition and valorization of paratransit transport services,** starting with concessions over routes and contracting of on-demand transport services.
- **Gradually install obligations regarding the age of the fleet, the professionalization of the drivers,** in order to encourage/force operators to reinvest part of their profit in the sector. This has to go hand in hand with guarantees on the sustainability of their activity and of their operating conditions.

***In order to give effect to this recommendation it is proposed that it be taken up by MoT. It is further proposed that MoT engage all trotro associations in this process. As a first step, it is proposed to put in place a pilot contracting model whereby trotro operators would be contracted to deliver a feeder service (for instance to the Aayalolo corridor), with certain obligations in terms of level and quality of service. This pilot should be launched by the middle of the next financial year.***

##### **Box 5 – Paratransit fleet renewal and professionalization in Dakar**

As a key part of the 2001-2008 Urban Mobility Improvement Program (*Programme d'Amélioration de la Mobilité Urbaine – PAMU*), Senegal authorities sought to recapitalize public transport vehicles operating in the Dakar metropolitan area. On top of attempting to reduce negative externalities directly linked to an ageing fleet (namely accident rates, congestion and pollution), the objective was to organize and to professionalize incumbent paratransit operators. The World Bank supported the program by contributing 8 million FCFA for the initial renewal phase launched in 2005.

The primary principle was to include only operators already providing services in Dakar and to encourage their professionalization. Operators participating in the program accepted to consolidate and to reduce the number of counterparts in the paratransit sector. In the end, 14 Economic Interest Groups (EIG) were created grouping former *car rapides* and *ndiaga ndiaye* operators; EIG were then federated in the Urban Transport Professionals Financing Association (*Association de Financement des Professionnels du Transport Urbain – AFTU*), established in 2001. Each EIG is independently managed.

AFTU was key in the fleet renewal process. AFTU received a special exemption from the Ministry of Economy and Finance in order to be able to provide leasing, the preferred mode to finance the program. Considering the amount of public funds included in the fleet renewal process, a rigorous supervision device for AFTU was needed. Public services are presented in the directorate; representatives come from the Ministry of Economy and Finance, the Ministry of Transport and the CETUD – *Conseil Exécutif des Transports Urbains de Dakar*, Dakar's transport authority –. Furthermore, a monitoring committee was also created by way of inter-ministerial order (Ministry of Economy and Finance and Ministry of Transport). Its objective is to supervise the revolving fund. Besides Ministry of Transport, CETUD and Transport Direction representatives, the committee also includes representatives from Ministry of Economy and Finance, AFTU's president and AFTU's officer in charge of guaranteeing administrative, financial and accounting management of the leasing process.

The above organization was key in allowing:

- Recapitalization of 2 000<sup>24</sup> ageing minibuses, often unroadworthy and not respecting minimal requirements to provide public transport services;
- Capacity building, pertaining to technical and managerial aspects, for paratransit operators by way (i) of operators training programs (management modern transport companies) and (ii) of personnel, including drivers, fare collectors and route managers, amongst others;
- Initial professionalization that included: (i) operational contracts between each EIG and CETUD for public transport lines; (ii) establishment of support entities, namely a savings and credit entity (MECTRANS), a health insurance company (TRANSVIE) and a EIG assistance on managing routes (CAPTRANS); and (iii) achieving a sufficient market share of public transport services that make AFTU one of the main stakeholders in the sector, even considering public authorities vision of implementing a hierarchized network where mass transport services are the backbone of the system (BRT and suburban rail services).

The program's success, both from an operational standpoint (55 routes network, more than 750 km and 50% modal share) and from the economic and financial profitability situation (99% reimbursement rates), led to the program being extended and implemented in secondary cities. Furthermore, other transport areas such as heavy freight vehicles and refrigeration vehicles, have also implemented similar programs.

## S2: Integrate NMTs and paratransit in transport infrastructure development

From planning to operations, ensure inter-modality and complementarity between all public transport modes and non-motorized modes, giving particular attention to:

- **Ensure the safety, continuity, and appropriate dimensioning and design of pedestrian and cycling facilities** both in the CBD and the suburban areas, maximizing NMT circulation and improving livability. Enhance public space by keeping speed under check and

<sup>24</sup> Dakar (1600) and regions (400).

encouraging public transport and active modes on the road and public spaces while restraining motorized individual vehicle use to minimal accessibility requirements.

- **Upgrade the public transport interchange facilities**, comprising dedicated space for trotos and related services and ensuring accessibility for NMTs, having in consideration the access hierarchy in the interchange design, as most vulnerable users should be afforded the best access to the interchange.

***In order to give effect to this recommendation it is proposed that it be taken up by DUR. It is further proposed that DUR engage GHA and MMDAs and in this process. As a first step, it is proposed to review the provisions of road design manual pertaining to NMTs, to define appropriate specifications for the development of pedestrian and cycle-friendly urban streets (as opposed to the current emphasis on vehicular throughput). This review process should be completed by the end of the next financial year.***

#### **Box 6 - Bogota's (Colombia) less publicized but highly effective public space projects**

Undoubtedly, Bogota is known in transport circles for its Transmilenio BRT system. At the same time, the city also started an aggressive campaign to reclaim public space from private users and to build a network of bicycle lanes in the city. These initiatives were based on previous efforts that resulted in strengthened institutions, sustainable financial practices, and a stronger civic culture<sup>25</sup>.

During the 1980's, Bogota's public spaces, sidewalks and road space experienced rapid deterioration. Sidewalks became riddled with illegally parked private vehicles, street vendors, and commercial stock<sup>26</sup>. Starting in the late 1990's, former mayors Enrique Peñalosa and, later, Antanas Mockus, made the reclamation of public spaces a priority. Though their campaigns were at first not welcomed by low-income and high-income residents alike, they were gradually accepted as inhabitants started to acknowledge the benefits of these policies. Apart from increased safety and better conditions for pedestrians, they also improved safety and travel speeds for private vehicle users.

Improving public space for pedestrians and cyclists was part of a larger plan to restructure the city's built environment and it was closely linked to the spatial framework implemented in 2000 (Salazar, 2008). The initiative was also presented as a first step to achieving an intermodal transport system that included high capacity buses, conventional buses, private cars, cycling and walking. In this sense, it paved the way for the construction of infrastructure-heavy public transport projects and also for the implementation of pedestrian-only roads in iconic zones in the city.

### **S3: Develop mass transit systems in Accra and Kumasi**

Prepare Public Transport Network (re)structuring Plans in the cities of Accra and Kumasi, taking in consideration all transport modes, including trotos, sustained by the correct integration of a pillar mass transit system, adequate to the demand needs and physical environment. Accra and Kumasi are the priority, in view of the congestion problems they already are facing. Integration is the key aspect to the success for these systems. Poor integration, as seen in some parts of the Amasaman corridor, is a feature of under-performing of such systems. Another key aspect is that it needs to be addressed is to ensure an integrated approach between land use planning and mobility planning. Finally, it is important to ensure and develop institutional capacity.

<sup>25</sup> Salazar J. (2008).

<sup>26</sup> Martin G. & Ceballos M. (2004).

***In order to give effect to this recommendation it is proposed that it be taken up by GAPTE in Accra, and by the metropolitan assembly in Kumasi. It is further proposed that DUR and GHA be engaged in this process. As a first step, it is proposed to develop public transport network plans and preliminary designs. These plans should be prepared within a year.***

#### **Box 7 –Lessons learnt from the implementation of BRT systems around the world**

BRT systems have spread around the world in the past 25 years. Some lessons learnt from the implementation of BRT systems around the world: the **Transmilenio in Bogota** (Colombia), **MyCiTi in Cape Town** (South Africa) and the **Transantiago in Santiago de Chile** (Chili) :

- **The creation of a BRT system is always a complex and lengthy process.** The Transmilenio was created over a period of more than 10 years. The development in phases of MyCiTi also showed a slow progression. In Santiago de Chile, the relatively rapid creation of the BRT system led to a major crisis (competition with individual operators, funding issues, insufficient infrastructure and equipment at the beginning of operations causing slow commercial speed, etc.);
- **Don't overlook negotiations with existing individual transport operators.** In the three cities, paratransit operators competed with the project (by illegally continuing their operations) and/or strongly opposed it through demonstrations, blocking of traffic, etc. The situation was solved only when their interests were finally considered, and a compromise was found to integrate them to the BRT system;
- **BRT operators will often try to avoid supporting the commercial risk of a new BRT system** (unpredictability of the frequency, important consequences on the financial equilibrium of the system). In Bogota, Cape Town and Santiago de Chile, authorities have not managed to allocate a significant part of the commercial risk on the BRT operator;
- **A solid and capable transport authority should lead the project.** In the three cities, it was necessary to concentrate all responsibilities within the hands of a single entity. The entity – whether a full-fledged Transport Authority, a Government Agency, or a Ministry – should be able to supervise mobility and traffic studies, manage procurement procedures, mobilize funding for the project, have a strong political weight, etc. ;
- **There is no best practice in terms of tariffs calculation methods; they must be defined according with transport policy objectives fixed by authorities.** Many options are possible: by trip, by distance, with additional payment for some modes or by transfer, subsidized or not for some categories of users, etc. ;
- **Complex/heavy ticketing systems can generate issues.** Contactless payment ticketing systems have caused problems in Bogota and Santiago de Chile (complex implementation, compatibility issues between technologies, etc.) Lighter ticketing systems may provide better value for money in many situations;
- **Physical integration of operators at stations, as soon as the BRT is put into service, is important for the success of the operation.** Infrastructure should be planned to allow physical integration of operators at BRT stations since the beginning of operations, and to adapt to the future evolutions of the system (which should tend towards further integration, including tariff integration).

**It is always difficult to assess ex-ante the BRT system's financial equilibrium conditions; authorities must be flexible and ready to react in case of error.** It is therefore necessary for authorities to foresee institutional arrangements for financing a possible deficit (without being in a weak position vis-à-vis operators).

**Box 8 - Dedicated Open Corridor / Closed Corridor and their impact on public transport performance**

Public transport services in BRT systems are organized in several manners. In some cases, BRT corridors are "closed": they are only accessible to limited services or vehicle types and/or to selected operators. Other operators are simply not allowed to enter the exclusive corridor. In proximity of the exclusive corridor, these operators might then propose feeder services (organized or not). In the logic of a "closed" system, high-capacity vehicles serve exclusive corridors where infrastructure exclusivity guarantees high operating speeds for trunk routes.

Some service types, often referred to as "express" services, have few stops along their routes thus achieving higher performance values. Other services stop on all stations. The two types combine to produce a system where all forms of trips are catered for. Some stations are planned as interchange stations, such is the case of terminal stations where feeder services link with trunk services. This type of arrangement was implemented in BRT systems of Bogota, Quito and Curitiba. In Africa, Cape Town's first BRT phase and Johannesburg's model follow the same arrangement.

"Closing" a corridor might be justified by a desire to exclude former services operators along that axis, most notably paratransit modes. In order to do so, a combination of vehicle and infrastructure choices enforce the decision: high-floor buses and high platform stations effectively exclude vehicles foreign to the trunk BRT system.

In other cities, authorities opt for "open" high-capacity public transport corridors. Justifications of this decision often point to the need for system flexibility and/or urban insertion. "Open" corridors allow different vehicle types on the exclusive infrastructure. In such cases, several operators are allowed in the trunk corridor, thus creating a system where different routes converge and diverge from the main corridor. There are no clear distinctions between trunk services and feeder services, even if a certain hierarchy can be put forward depending on needs and demand levels. "Opening" a corridor can be translated into aiming at introducing a high level of flexibility in terms of what services are allowed into the corridor. For users, this type of arrangement results in a reduction of transfer needs.

The choice between "opening" or "closing" corridors is both a technical and a political decision, with an economic aspect that should not be overlooked. The choice should result from a careful analysis of service flexibility needs and of authorities' capacity to organize the public transport supply. Nonetheless, it should be noted that "closing" a system could result in a technological lock-in situation for future phases. Indeed, once a system is "closed", it is difficult and expensive to "re-open" it. For instance, when a BRT system has opted to use high-floor buses and high platform stations, substantial investments are needed either to purchase new vehicles or to imagine solutions that combine high-floor and low-floor solutions.



Image 1 - "Open" system – "closed" system<sup>27</sup>

<sup>27</sup>Modified images using base image from BRT Planning Guide (2007)

## 4.5 Recommendations for road space use and vehicle efficiency

### I1: Optimize operation of the road network in metropolitan areas

Traffic planning and management has not yet been given the adequate attention in Ghana. There is no traffic unit in any of the three main cities, nor in the central Department of urban roads. It is important to start addressing this problem by optimizing operation of road, and public space in general, with the following initiatives:

- **Adopt and start implementing suitable traffic and parking plans for the Accra, Kumasi, and Takoradi metropolitan areas**, including specific measures to improve the speed and reliability of public transport vehicles.
- **Put in place an adequate traffic regulation system in the three metropolitan areas** commensurate to their needs and accompanied by physical improvements, especially for intersections. This does not mean to in place a Traffic Light Control Centre, but could start by addressing the main transport axes. In order to better identify priorities, this need should be evaluated through a cost-benefit analysis study, as it comes with a high cost of investment and maintenance.
- **Establish traffic and parking management units** in the three metropolitan areas as well as within MRH, and ensure that these units have the data, equipment, and software necessary to perform.
- **Increase the police’s capability to play their role in management of traffic and parking** through training and provision of expert assistance.
- **Carry out information campaigns to raise the population’s awareness** on individual motorized traffic negative externalities and on road safety issues, starting with campaigns on children's road safety.
- **Build capacity nation-wide in the field of traffic management and on multimodal urban mobility and land-use planning integration** (possibility of expanding the GUMAP Project) in order to ensure that every stakeholder and decision-maker in the urban transport system has the competence to deal with the assigned responsibilities.

*In order to give effect to this recommendation it is proposed that it be taken up by the relevant metropolitan assemblies. It is further proposed that DUR be engaged in this process to provide technical expertise. As a first step, it is proposed to develop traffic and parking plans for Accra and Kumasi. These plans can be prepared with the support of ongoing projects (such as GUMAP) and will be implemented by the assemblies themselves. Preparation of traffic and parking plans should be completed within 12 months.*

### **Box 9 - Monitor and manage traffic in Ouagadougou**

As part of the Ouagadougou Mobility Support Project (PAMO), the Ouagadougou City Council launched an initiative in 2006 aimed at improving traffic conditions and improving access to the city center. The first step in this process was the development of a simplified circulation scheme, capable of pre-empting the city's future traffic plans, and allowing for the most urgent improvements to be implemented in the short term. The first phase of the traffic improvement scheme was designed in several stages:

- The first stage involved a rapid diagnosis of current traffic conditions and access to the city center, including road traffic surveys (cordon and intersection counts).
- The second stage focused on of strategic and technical guidelines to optimize access conditions to the city center, concurrently considering objectives such as traffic flow, the safety of all road users, the quality of public spaces, etc.
- The last stage was to identify key short-term steps (with 2015 as the horizon year) to improve city center access and to plan the development and implementation of a comprehensive traffic schema.

The improvements proposed at the end of these work stages were mainly centered on optimized operations of the existing road infrastructure (excluding some of the more demanding solutions). In 2014, as part of the same program, the city council undertook a second traffic counting campaign, based on the same protocol, but this time organized directly by the municipal services and the staff trained in 2011. The objective of this second phase was to:

- Feed into the Urban Travel Observatory that is currently being set up, in order to gain better insight into travel patterns and ensure regular monitoring. This observatory is intended to eventually inform decision-making on road infrastructure management and investment planning;
- Evaluate the impact of the measures taken so far on road traffic, and refine the optimization tracks, particularly in terms of regulation of strategic traffic intersections.

The whole approach allowed for the development of a robust data baseline and for building municipal service capacity. In addition, it allowed the local authority to have a technically grounded rationale for avoiding unnecessary road investments in the city center recommended by some partners. The two counting campaigns show that as traffic increased on the city's radial roads, it was increasingly diverting onto the circumferential boulevards rather than going to the city center.

The priority actions still to be undertaken have been identified as being the optimization of specific infrastructure (regulation of signalized intersections, traffic signal timing optimization, etc.) and preparing for the implementation of the comprehensive traffic management strategy being developed in 2018.

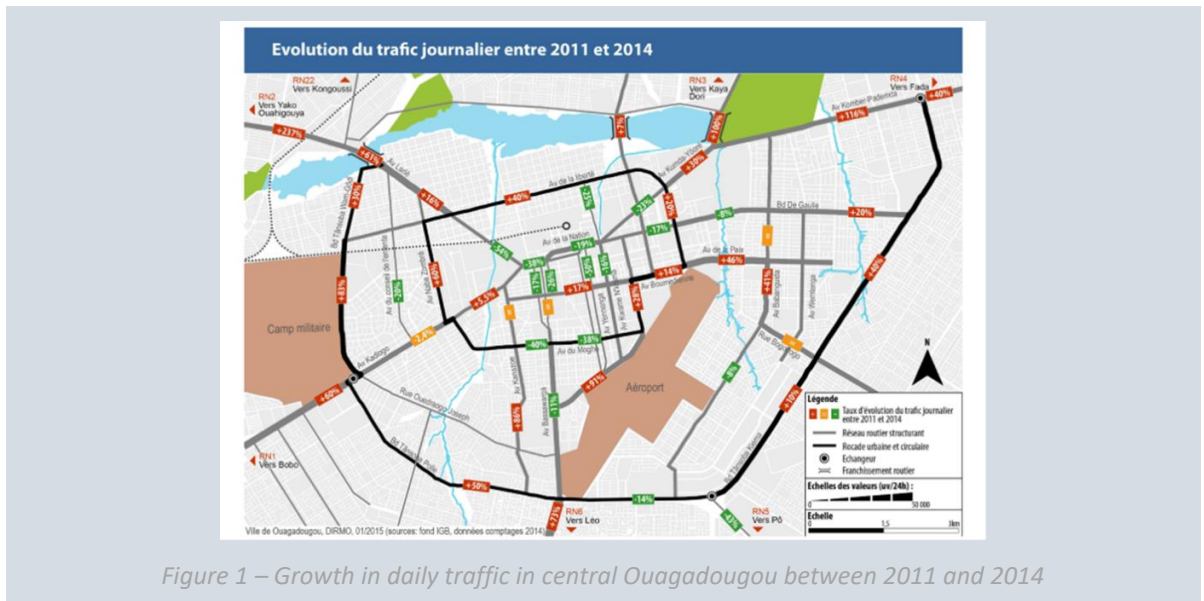


Figure 1 – Growth in daily traffic in central Ouagadougou between 2011 and 2014

## I2: Design and implement an overhaul program for the paratransit sector

The majority of paratransit owners and operators are independent investors and workers with limited capacity to develop their business. As a result, the potential for growth and improvements in service quality remains largely untapped. A nation-wide program to professionalize and recapitalize the paratransit sector should be gradually implemented. The first step should consist in building the financial management and accounting skills of operators. This will be instrumental in developing their capacity to better manage revenue and expenditure flows, plan for contingencies, assess their borrowing capacity, and prepare future investments. It will also pave the way for a fleet renewal scheme for trotros and taxis. Accelerated vehicle replacement schemes have been implemented in many countries around the world in recent years. These schemes are meant to have a number of positive impacts, such as, improving air quality, reducing dependence on imported oil, reducing emissions, and improving road safety. This process should be informed by data collection, analysis, and monitoring efforts, aimed at providing a better understanding of the operational characteristics of paratransit services – in the wake of what has been initiated with the AccraMobile initiative<sup>28</sup> and in coherence with recommendation I4 on the creation of a data portal.

***In order to give effect to this recommendation it is proposed that it be taken up by MoT. It is further proposed that MoT engage all trotro associations in this process. As a first step, it is proposed to develop a support program aiming to improve the organizational and business management skills of trotro operators. This program should pave the way for deeper structural reforms of the industry, building on successful examples from the African continent (e.g. fleet renewal program in Dakar, incorporation of paratransit operators in BRT companies in South Africa...). In the Ghanaian context it will also be important to reach the vehicle owners, and not simply the drivers, in order to transform the industry. This support program should be launched by the middle of the next financial year.***

<sup>28</sup> [http://www.satc.org.za/assets/3a\\_saddier.pdf](http://www.satc.org.za/assets/3a_saddier.pdf)



### **Box 10 – Capacity building: the example of paratransit in Cape Town**

The City of Cape Town implemented the first phase of its MyCiTi Integrated Rapid Transit system over the period 2007-2015. One of the key areas of learning from this first phase of planning and implementation was around the incorporation of paratransit businesses into BRT operations. In particular, the people who owned and operated the more than 900 affected paratransit operations were poorly prepared for the substantial shift from a small-scale minibus business model to collectively run bus operating companies managing an onerous 12-year contract. To its credit the City provided financial resources for paratransit owners to procure legal, financial and organizational advisors. However, these advisors were only part of a transitional negotiation process; once this process was completed the operators were left to their own devices to deal with long-term decision-making and management capacity-building. They had to learn on -the- job how to navigate scheduled, large scale bus operations – a major challenge for most even well trained and experienced operators.

In 2013 the City of Cape Town embarked on the second phase of its MyCiTi project. In collaboration with the first-phase organizational advisory consultant, the municipality decided on a more incremental transition approach for the second phase. The first step in this process was the launch of a pilot express bus service in mid-2014. This service was initially expected to be operated for three years by a new entity, the N2 Express Joint Venture Company, set up between the affected scheduled bus and paratransit minibus operators. Built into the three- year pilot contract was a budget to set up a technical and managerial training program for paratransit operators in the phase 2 contract area of the city. It was envisaged that participants from the paratransit sector would ultimately manage and run the longer term-phase 2 bus operating companies that would be established by the end of the three-year interim period.

In order to identify candidates for the program, each of the 28 paratransit route associations who were involved in the first round of negotiations in the phase 2 contract area were invited to nominate three of their members for training. Thus, in the capacity building program’s first year – 2014/2015 – a group of around 90 candidates participated in general management and transport planning short courses. The transport planning courses were specifically developed and run for this group by the University of Cape Town Centre for Transport Studies. At the end of the first year all candidates underwent assessments and interview processes. As a result, in the 2015/2016 and 2016/2017 municipal financial years 46 candidates drawn from the initial pool continued into a more intensive and focused program, and were split into management or vocational training streams. The N2 Express Joint Venture, with funding made available by the City of Cape Town, contracted the University of Cape Town for the transport and business management component. A number of other vocational training services providers were engaged in the areas of office management, bus operations and vehicle maintenance, as well as Facilities Management.

While ongoing quantitative assessment provided a basic measure of academic performance across the management and vocational training streams, at the end of each year the University of Cape Town conducted in-depth qualitative assessment sessions with the management stream candidates. Encouragingly, during these in-depth assessment sessions candidates reported that they had changed some of their paratransit business management practices spurred specifically by their participation in the capacity building program.

Reported changes included instituting written – as opposed to verbal – employment agreements between owners and drivers, more detailed tracking of vehicle movements and utilization efficiency, and sharing of information between different businesses and associations. The sharing of information

is a significant step, as most of the candidates in the program reported that prior to the program they had never engaged with one another across business and associations in a collaborative manner.

A key challenge heading into the future is that the capacity building program concluded as planned in mid-2017, but the long-term operating entities that were intended to be in place by that point have yet to be established. The consequence is that the new business entities that were intended to absorb the candidates who completed the capacity building program have yet to become a reality. This is largely the result of complex bus operating contract negotiations, and has unfortunately left beneficiaries of the capacity building program with unmet expectations. On a more positive note assessment results suggested that they are already thinking of, and in some cases instituting, positive change in their existing circumstances such as applying for positions with other public transport operating companies. This in turn holds potential and brings actual benefits for their current paratransit businesses' employees as well as passengers.

### I3: Promote civil society participation

There are no processes for public involvement and consultation in the decision-making process regarding urban transport, planning, investments, operations or design. Establishing such processes would help decision makers, planners and technicians act upon the population's real needs and priorities in terms of mobility and accessibility. This could be achieved through the following initiatives:

- **Formalization of public participation and consultation mechanisms and empowerment of users to defend their rights.** Regularly consulting with civil society increases legitimacy of decisions taken, through stronger ownership. This also promotes transparency, ensures better accountability, and is often critical for quality of projects and speed of implementation. Institutionalize mechanisms public participation with explicit rules that will likely need to be publicized as often as necessary. Particular attention should be given to communication tools that need to fit all partners involved. Prior to taking initiatives, public authorities need to conceive clearly structured, tailor-made and long-term processes for civil society involvement. This can be done by leveraging the 2016 Local Govt Act, and in particular, the Participatory Governance at the Local Level clause, which makes provision for such public participation.
- **Increase the engagement of the media and academia in a national conversation on urban mobility:** public authorities should not shy away from a public conversation with citizens regarding issues affecting urban mobility. A constructive dialogue with the interest groups and academia should be nurtured in traditional as well as social media.
- **Develop systematic monitoring and accountability processes:** set up structures and processes for a more stringent and systematic monitoring of projects' results. This could be done through the creation of an independent observatory in charge of following several indicators (both at the sector level and for specific projects).
- **Make urban and mobility issues visible through punctual interventions:** the organization of car-free days, for instance, can be leveraged to start a conversation on public space and public transport. Existing initiatives, such as the Chale Wote Street Art Festival in Accra could be expanded in scope and reproduced in other cities. In the same vein, tactical urbanism interventions, transforming the use of public space through reversible measures, should be considered (e.g. pedestrianized streets, temporary landscaping, etc.).

***In order to give effect to this recommendation it is proposed that it be taken up by the MMDAs It is further proposed that the MMDAs seek the support of MLGRD and MoT in this process. As a first step, it is proposed to organize a national competition, publicized on radio and TV channels, inviting***

*citizens to share their ideas to fix congestion in their city. This event would offer a platform for users to voice their concerns and decision-makers to address them publicly. This competition could be launched within four to six months (by June 2019).*

**Box 11 – Kenya Alliance of Resident Association (KARA ) a Constructive Civil Society Engagement in the Transport Sector**

Formed in 1999, the Kenya Alliance of Resident Association is an apex body representing residents. It advocates for improved and accelerated access to public service delivery and has been playing an increasing role in the transport sector given the widespread concerns of residents around congestion and road crashes. KARA is a membership organization that allows individuals and resident associations to join and also attracts some corporate sponsorship, which gives it a strong base in the society it represents. While KARA tends to represent middle and upper-class neighborhoods, the organization also makes an effort to be inclusive and include poorer neighborhoods in its fora and activities.

KARA works most directly with counties as this is the level of government closest to residents. In 2016 KARA successfully worked with the Nairobi City County to pass the Nairobi City County Community and Neighborhood Associations Engagement Act which sets out a formal framework of cooperation between resident associations and the city to deliver services. The organization also engages in policy dialogues with national government and often plays an important coordinating role by bringing them together to forums with key civil society actors to render account and engage on issues.

In this manner KARA has worked over the years to improve public transport, engaging with Nairobi County, linking the County to residents and their concerns. KARA has conducted focus groups and forums on the Thika Highway Improvement Project and lobbied for the need for more footbridges and consideration to safety<sup>29</sup>. The association also served on the NCC Nairobi Transport and Decongestion Committee<sup>30</sup> which involved an inclusive, consultative process to determine a number of actions that could be done to address Nairobi’s severe traffic congestion. However, to date the recommendations from the report do not appear to have been implemented.

More recently, KARA successfully lead a collaboration with the city, UNEP, University of Nairobi and other key actors to develop and pass through the county assembly a Non-Motorized Transport (NMT) policy which was adopted in 2017. This took two years of dialogue with both the Nairobi governor’s office and transport committee of the city county along with public policy fora to gather views from civil society and create engagement with policymakers. The NMT policy provides a solid framework for harmonization, prioritization and coordination of NMT infrastructure and facility development and maintenance in Nairobi, and KARA is currently talking to NCC to follow up on implementation.

Overall, KARA has been helping to facilitate meaningful public participation in the transport sector in Kenya in line with article 10 of the Kenyan constitution which mandates such participation in governance. In this way, the resident associations are helping to bring the formulation of transport policy and implementation closer to the needs of pedestrians and public transport users. KARA is an exemplary case of how citizen participation in urban mobility matters can be allowed to evolve when government and civil society both value participatory decision – making.

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<sup>29</sup> Kara. (2012).

<sup>30</sup> Nairobi City County. (2014).

#### I4: Set up a public-oriented digital portal centralizing transportation information

Despite recent efforts conducted in Accra, there is little to no electronic information available on passenger transport services. Authorities should take advantage of modern technologies to promote the digitization of the transport sector. This could allow productivity gains through improved match between transportation supply and demand, reduced transaction costs, and better customer satisfaction. National and local authorities should cooperate towards the development a virtual platform centralizing the schedule and route information of all passenger transport services active in Ghana. This can be achieved by requesting all operators to provide a standardized dataset (in GTFS format) describing the services that they operate, and creating a web-based or smartphone application allowing the public to access these feeds. This platform should offer a journey-planning functionality allowing users to calculate their itinerary using different modes. Such a platform should include the main trotro routes operated in each metropolis, as they constitute one of the main mode of transport. It is therefore important for local authorities to regularly collect data on these services in order to keep this database up to date.

***In order to give effect to this recommendation it is proposed that it be taken up by the NITA. It is further proposed that NITA engage all other institutions involved in urban mobility in this process. As a first step, it is proposed to create a GTFS repository, where public administrations and transport operators can upload data on the itinerary and timetables of existing transport services. This repository could be put online within four to six months (by June 2019).***

#### **Box 12 - Increasing revenue collection through digital ticketing solutions: the case of Dakar, Senegal**

In a bid to improve revenue collection for AFTU operators, local tech companies developed a ticketing solution based on the use of digital technologies. A smartphone is used to edit tickets, which are printed on a portable Bluetooth printer. Data on ticket sales and collected revenue is regularly uploaded onto the companies' servers using a Wi-Fi internet connection. This allows operators to know precisely how many tickets have been sold, and how much cash they are supposed to receive from the crew at the end of the day. According to one of the companies which equipped 400 bus<sup>31</sup>, operators who adopted this solution reported a 40% increase in revenue – due to a dramatic decrease in revenue evaporation, previously caused by the manual handling of cash. Vehicle owners can therefore monitor the performance of their fleet and drivers via an online platform.

Improving operators' turnover and profitability through better revenue collection opens up possibilities to reinvest a higher share of profit in their activity, and therefore to further improve the service that they offer. In addition, digitizing this process creates a wealth of secondary data that can be used to better plan, operate, and regulate transport services.

<sup>31</sup> The company Amarante equipped approximately 400 bus with this technology between 2015 and 2017.

## 4.6 Synthesis of recommendations and suggestion of implementation

N°	Recommendations	Scale	Who? <i>Which institution to manage the implementation?</i>	With who? <i>Which institution involved / consulted?</i>	How? <i>How to implement? What are the next steps?</i>	When? <i>What timeframe for implementation? What temporal opportunities and constraints?</i>
E1	Update the 2008 National Transport Policy and establish an overarching National Urban Mobility Strategy	National	MoT in close consultation with MLGRD and MRH	MMDAs	Step 1: Organize a series of work sessions that will serve as baseline for the development of the strategy.  Step 2: Prepare the final document.	Step 1 to be completed by June 2019
E2	Prepare and enact National Land Transport legislation	National	Roads and Transport Select Committee of the Parliament	MoT, MLGRD, MRH and MoF	Prepare a comprehensive assessment of roles and responsibilities in the sub-sector.	Fiscal year.
E3	Reaffirm GAPTE's mandate as a metropolitan mobility agency	National	MLGRD	GAPTE's shareholders (MMDAs) and MoF	Step 1: Separate bus operations from GAPTEs core planning and regulatory functions.	June 2019
E4	Leverage new revenue sources to finance urban mobility and accessibility	National	MoF	DVLA, MRH and MLGRD	Inventory of all fiscal revenue linked to transport and mobility.	June 2019
E5	Secure consistent budgetary allocations for urban mobility, both at national and local government levels	National and local	MLGRD	MMDAs	MLGRD support to metropolitan areas in the preparation of a medium-term urban mobility budget.	Before de next budget preparation.
A1	Strengthen public control over land towards the development of transport infrastructure	National	LUSPA	MLGRD	Training to MMDAs staff of Physical Planning, Transport, and Urban Roads Departments on the integration of land use and mobility planning.	Before next financial year
A2	Prepare or consolidate integrated land use and multimodal transport master plans based on existing	National	LUSPA	MMDAs of Greater Accra and Greater Kumasi	Set up review committees to initiate consolidation of land use and transport master plans.	June 2019

	documents in Accra and Kumasi					
S1	Support the improvement of existing transport services (trotros and taxis)	National	MoT	All trotro associations.	Put in place a pilot contracting model	June 2019
S2	Integrate NMTs and paratransit in transport infrastructure development	National	DUR	GHA and MMDAs	Review the provisions of road design manual pertaining to NMTs, to define appropriate specifications for the development of pedestrian and cycle-friendly urban streets.	End of next financial year
S3	Develop mass transit systems in Accra and Kumasi	Accra and Kumasi	GAPTE and Kumasi Metropolitan Assembly	DUR and GHA	Prepare public transport network plans	Prepared by the end of 2019
I1	Optimize operation of the road network in metropolitan areas	Local	Metropolitan assemblies	DUR	Prepare traffic and parking plans in Accra and Kumasi with the support of ongoing projects, such as GUMAP	Launched by June 2019.
I2	Design and implement an overhaul program for the paratransit sector	National	MoT	All trotro organizations	Develop a support program aiming to improve the organizational and business management skills of trotro operators	Next financial year
I3	Promote civil society participation	National and local	MMDAa	MLGRD and MoT	Organize a national competition, publicized on radio and TV channels, inviting citizens to share their ideas to fix congestion in their city	June 2019
I4	Set up a public-oriented digital portal centralizing transportation information	National	NITA	All institutions involved in urban mobility	Create a GTFS repository	June 2019.

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# Appendices

## Appendix 1 – Sources of statistical data for the eight pilot countries and the cities studied in Ghana

### Sources for table 1:

DEMOGRAPHY		
Country population (million, 2016)	Worldbank (2016)	<a href="https://data.worldbank.org/indicator/SP.PCP.TOTL">https://data.worldbank.org/indicator/SP.PCP.TOTL</a>
Country population projection (million, 2030)	UN Habitat (2030)	<a href="http://urbandata.unhabitat.org/explore-data/?countries=Q,ET,GH,GN,KE,NG,RW,SN&amp;indicators=population">http://urbandata.unhabitat.org/explore-data/?countries=Q,ET,GH,GN,KE,NG,RW,SN&amp;indicators=population</a>
Country density (pop. / sq. km)	Worldbank (2016)	<a href="https://data.worldbank.org/indicator/EN.PCP.DNST">https://data.worldbank.org/indicator/EN.PCP.DNST</a>
URBANIZATION		
Urbanization Rate (% , 2016)	Worldbank (2016)	<a href="https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS">https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS</a>
Urban Growth Rate (% , 2010-2015)	Worldbank (2010-2015)	<a href="https://data.worldbank.org/indicator/SP.URB.GROW?locations=Q">https://data.worldbank.org/indicator/SP.URB.GROW?locations=Q</a>
Urban areas with more than 300 000 inhabitants (2015)	UN Habitat (2015)	UN Habitat ( <a href="https://esa.un.org/unpd/wup/CD-ROM/">https://esa.un.org/unpd/wup/CD-ROM/</a> , File 12)
ECONOMY		
GDP per capita (\$PPP, 2016)	Worldbank (2016)	<a href="https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD">https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD</a>
Average economic growth rate (% / year, 2010-2015)	Worldbank (2010-2015)	<a href="https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=Q">https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=Q</a>
Poverty headcount ratio w/r to the international poverty line (2011 PPP, % of pop.)	Worldbank (2005 to 2015 depending on countries)	<a href="https://data.worldbank.org/indicator/SI.POV.DDAY?locations=KE-ET-RW-GH-NG-GN-SN-Q">https://data.worldbank.org/indicator/SI.POV.DDAY?locations=KE-ET-RW-GH-NG-GN-SN-Q</a>
Human Development Index (0-1 scale, 2015)	UNDP, Human Development Reports (2015)	<a href="http://hdr.undp.org/en/composite/HDI">http://hdr.undp.org/en/composite/HDI</a>
0 - low , 1 - high human development		
BUSINESS AND GOVERNANCE		
Doing Business (Distance to Frontier, 2017)	Doing Business, Distance to Frontier (2017)	<a href="http://www.doingbusiness.org/data/distance-to-frontier">http://www.doingbusiness.org/data/distance-to-frontier</a>
0 - lowest, 100 - highest performance over time or "frontier"		
Corruption Perceptions Index (1-100, 2016)	Transparency International (2016)	<a href="https://www.transparency.org/news/feature/corruption_perceptions_index_2016">https://www.transparency.org/news/feature/corruption_perceptions_index_2016</a>
1 - low transparency or high corruption, 100 - high transparency or low corruption		
MOTORIZATION		
Gazoline Price / Diesel Price (US\$ / L, 2016)	Worldbank (2016)	<a href="https://data.worldbank.org/indicator/EP.PMP.SGAS.CD">https://data.worldbank.org/indicator/EP.PMP.SGAS.CD</a> / <a href="https://data.worldbank.org/indicator/EP.PMP.DESL.CD">https://data.worldbank.org/indicator/EP.PMP.DESL.CD</a>
Private vehicles in use (2015)	OICA (2015)	<a href="http://www.oica.net/category/vehicles-in-use/">http://www.oica.net/category/vehicles-in-use/</a>
Motorization Rate (private vehicles / 1 000 inhabitants, 2015)		
Road Safety Casualties (nb of casualties / 100 000 people, 2015)	Worldbank (2015)	<a href="https://data.worldbank.org/indicator/SH.STA.TRAF.P5?locations=Q&amp;view=chart">https://data.worldbank.org/indicator/SH.STA.TRAF.P5?locations=Q&amp;view=chart</a>

### Sources for table 2:

	Sources	Available at
DEMOGRAPHY		
Metropolitan population (million, 2015)	UN Habitat (2015) for Kumasi + 2010 Census	<a href="https://esa.un.org/unpd/wup/CD-ROM/, File 12">https://esa.un.org/unpd/wup/CD-ROM/, File 12</a>
Percentage of the national population residing in the urban agglomeration (% , 2015)	UN Habitat (2015)	<a href="https://esa.un.org/unpd/wup/CD-ROM/, File 16">https://esa.un.org/unpd/wup/CD-ROM/, File 16</a>
Urban population growth rate (% / year, 2015-2020)	UN Habitat (2015-2020) + census for Accra	<a href="https://esa.un.org/unpd/wup/CD-ROM/, File 14">https://esa.un.org/unpd/wup/CD-ROM/, File 14</a>
QUALITY OF LIFE		
Quality of life in African cities (EPFL-AMB ranking, 2017)	EPFL-AMB (2017)	<a href="https://www.yabiladi.com/articles/details/51277/classement-epfl-amb-marrakech-meilleure-ville.html">https://www.yabiladi.com/articles/details/51277/classement-epfl-amb-marrakech-meilleure-ville.html</a>
Urban mobility Index 2.0 - UITP (grade 0-100, 2014)	UITP (2014)	<a href="http://www.uitp.org/sites/default/files/members/140124%20Arthur%20D.%20Little%20%26%20UITP_Future%20Index%202014.pdf">http://www.uitp.org/sites/default/files/members/140124%20Arthur%20D.%20Little%20%26%20UITP_Future%20Index%202014.pdf</a>
MOBILITY DEMAND		
Motorization rate (vehicles / 1'000 inhabitants)	KOICA Transport Master Plan (2016)	
Number of trips per day (million)		
Number of motorized trips per day (million)	KOICA Transport Master Plan (2016)	Data are for 2014
Number of motorized trips per day per inhabitants (million)		
Average trip distance (km)		
Modal split - Personal Vehicles (%)	KOICA Transport Master Plan (2016)	Data are for 2014
Modal split - Public Transport, including paratransit (%)	KOICA Transport Master Plan (2016)	Data are for 2014
Modal split - Non Motorised Transport (%)	KOICA Transport Master Plan (2016)	Data are for 2014
TRANSPORT SUPPLY		
Number of public buses	KOICA Transport Master Plan (2016)	
Number of paratransit vehicles (taxi excluded)	KOICA Transport Master Plan (2016)	
Length of existing urban rail road and/or reserved bus lanes (km)		
Length of planned urban rail road and/or reserved bus lanes (km)		



Appendix 2 – Interpretation grid for the governance matrix

Sector	Urban Planning	Transport public					Public spaces				
		Institutional collective transport (train, metro, bus, boats, etc)	Bus stations (or bus terminals)	Paratransit	Non professionalized (minibus, shared taxis)	Taxis (shared taxis, mototaxis and three-wheelers)	Road infrastructure and road network	Traffic management	Parking	Non-motorized modes	
		Policy definition and/or multimodal urban mobility plan definition									
Strategical level What strategies? With which resources?	Policy and planning	Definition of a general Urban Development Master Plan	Corridor-based or network-based project definition	Bus station (or bus terminals) planning	Network and bus stops definition	Road network infrastructure Master Plan (or similar) definition	Traffic management strategy definition (traffic plan, traffic calming, traffic lights regulation strategy, etc.)	Parking strategy definition	Non-motorized modes policy and related infrastructure plan		
	Funding	Urban project financing	Capital investment and eventual operational deficit financing	Infrastructure financing	Recapitalization or renewal program	Infrastructure and facilities financing					
Tactical level What services ought to be developed? How to go about it?	Regulation	Urban planning regulatory framework	Public transport services supervision and regulation					Highway (or road) code regulatory framework definition and enforcement by responsible entity			
	Licensing, permits and contracting	Drivers' permit	Authority - operator contracting	Operational licensing				Parking operators contracting			
	Fare system		Fare policy for users	Fare policy for operators	Fare policy for users	Tolls		On-the-road or off-road parking fare setting mechanisms			
Operational level How to produce services efficiently?	Infrastructure, Equipment	Urban networks' infrastructures besides transport infrastructures	Infrastructure project management and vehicle and facility ownership	Project management and infrastructure ownership	Infrastructure project management (bus stops, ranks, etc.)	Road infrastructure general management	Project management for traffic lights facilities and infrastructures	Project management for parking infrastructure construction and/or for parking meters	Project management for sidewalks	Project management for bicycle paths	
	Operators / Maintenance		Vehicle and infrastructure operations and maintenance	Bus stations (or bus terminals) management, if by a private company or a union	Vehicle operations and maintenance	Maintenance	Traffic lights and road signage maintenance	Operators and maintenance of on-the-road or off-road parking	Cleaning and maintenance of non-motorized modes infrastructures		

### *Appendix 3 – Context of the Urban Mobility Forum*

#### **Purpose of the forum**

The Urban Mobility Forum was held on 25 and 26 July 2018 and took place in the Ghana Shippers Authority, In Accra. The purpose of the Forum was to outline the diagnosis (findings and recommendations) established during the first field mission held in November 2017 in Accra and Kumasi, in order to:

- Share ideas on the current state of urban mobility;
- Gather inputs from the different stakeholders represented to stimulate a national debate on urban mobility issues;
- Understand the roles of the various government actors and stakeholders in urban mobility matters, and to
- Develop and confirm a common vision for urban mobility in the cities of Ghana.

#### **Attendance**

The Urban Mobility Forum was attended by more than 100 representatives from the following institutions:

- The Ministry of Transport;
- The Ministry of Local Government and Rural Development;
- The Ministry of Roads and Highways;
- The Ministry of Railways Development;
- The Ministry of Finance;
- Parliament;
- GAPTE;
- DUR;
- DVLA;
- LUSPA;
- Accra Metropolitan Area;
- Kumasi metropolitan Area;
- VVIP;
- Municipal Assemblies representatives;
- GRTCC;
- GPRTU;
- Agence Française de Developpement;
- World Bank;
- among others.

#### **Welcome address**

Welcome addresses were made by the following honorable ministers:

- Minister for Roads and Highways, Hon. Kwesi Amoako Atta;

- Minister for Railways Development, Hon. Joe Gharte;y
- Minister for Local Government, Hon. Alima Mahama;
- Minister for Transport, Hon. Kwaku Ofori Asiamah;

M. Zemedkun Girma TESSEMA introduced the SSATP program and its objectives

Ms. Margarida NETA of the consultants Transitec then presented the different facilitators of the Forum, a short introduction to the EASI framework and the findings and recommendations emanating from the diagnoses done during the first field mission and outlined the main aspects addressed in the first draft Interim Report.

A panel discussion constituted of representatives from MoT MRD, MRH, MLGRD, AMA and KMA, provided an initial round of responses to the presentation of findings and recommendations, with the view to stimulate discussions to follow during break away groups.

Appendix 4 – Possible Options for raising Additional Revenue for Urban Mobility and Accessibility (from a Policy Note from MLGRT in GUMAP Framework, November 2017)

Potential Financing Source	Already Being Used in Ghana	Yield Potential	Priority for Consideration	Comments
<b>A - Financing from the users and other direct beneficiaries of urban mobility improvements</b>				
<b>Taxation of vehicles and operators</b>				
Vehicle purchase tax for GAMA	Yes	Medium	1	Owners may try to register vehicles outside GAMA
Annual vehicle registration tax for GAMA	Yes	Medium	1	Owners may try to register vehicles outside GAMA
Fees for operators licensing and various permits	Yes	Low-medium	1	Current low level of fees in GAMA could be increased
Fees for use of public transport terminals	Yes	Low-medium	1	Fees could be increased, and their recovery improved
Tax on public transport operators' gross income	Yes	Low	2	Dependent on operators' ability to generate sufficient revenues. Has not been successful in the case of Type B bus services
Tax on vehicle insurance	No	Medium	3	Would be seen as unfair by non-urban users
Vehicle import duties	Yes	High	3	To be seen in context of national trade policies. Revenues would need to be shared among cities and with inter-urban roads
Malus/bonus related to CO2 emissions	No	Low-Medium	4	Very difficult to implement
<b>Taxation of the use of vehicles</b>				
Fuel tax	Yes	High	1	High share of fuel tax is generated in urban areas in Ghana

Import duties on spare parts	Yes	Medium	3	To be seen in context of national trade policies. Revenues would need to be shared among cities and with inter-urban roads
Tolls and other road user fees	Yes	High	3-4	Tolling is already used in Ghana. It can be costly to operate and create congestion. Other road user fees are very difficult to implement
Vehicle parking fees	Yes	Low	2	Great variety of circumstances to be taken into account
Traffic congestion charges	No	High	4	Very difficult to implement/operate
<b>B - Financing from the indirect beneficiaries of urban mobility improvements</b>				
Increase in sales or value-added tax	Yes	High	4	Difficult to justify given high share of informal economy (that does not pay such taxes)
Increase in the property tax	Yes	High	4	Difficult to justify in connection with urban mobility improvements
Employment tax	No	High	4	Not relevant given high share of informal employment
Capture of land value increases due to urban mobility improvements	No	High	3	Betterment tax is made legally possible under Act 936 but difficult to implement for urban mobility improvements

