SSATP
Africa Transport Policy Program

FINAL REPORT

Policies for Sustainable Accessibility and Mobility in Cities of Kenya

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Policies for Sustainable Accessibility and Mobility in Cities of Kenya

SSATP
Africa Transport Policy Program

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Acknowledgements

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List of Acronyms

ACET	African Centre of Excellence for Studies in Public and Non-Motorized Transport
AfDB	African Development Bank
AFD	Agence Française de Développement
BRT	Bus Rapid Transit
CBD	Central Business District
CSUD	Centre for Urban Sustainable Development
EIB	European Investment Bank
EU	European Union
GDP	Gross Domestic Product
GHG	Greenhouse gas
ICT	Information and Communications Technology
IGF	Internally Generated Funds
INDC	Intended Nationally Determined Contributions
INTP	Integrated National Transport Policy
JICA	Japan International Cooperation Agency
KARA	Kenya Alliance for Resident Associations
KBS	Kenya Bus Service
KeNHA	Kenya National Highways Authority
KNBS	Kenya National Bureau of Statistics
KRB	Kenya Roads Board
KURA	Kenya Urban Roads Authority
LRT	Light Rail Transit
MOA	Matatu Owners Association
MoTIHUD	Ministry of Transport, Infrastructure, Housing and Urban Development
MWA	Matatu Welfare Association
NaMATA	Nairobi Metropolitan Area Transport Authority
NCC	Nairobi City County
NEMA	National Environment Management Authority
NIUPLAN	Nairobi Integrated Urban Development Master Plan
NMT	Non-Motorized Transport
NTSA	National Transport and Safety Authority
NUDP	National Urban Development Policy
ODF	Official Development Finance
PFI	Development Finance Institution

RMF	Road Maintenance Fund
ROSSOK	Road Safety Solutions of Kenya
SACCO	Saving and Credit Cooperative Organizations
SAGA	Semi-Autonomous Government Agency
SEZ	Special Economic Zone
TLAB	Transport Licensing Appeals Board
UN	United Nations
WB	World Bank

Executive Summary

The urban transport pillar of the Africa Transport Policy Program (SSATP) launched a project to support eight pilot countries (Côte d'Ivoire, Ethiopia, Guinea, Ghana, Kenya, Nigeria, Rwanda, and Senegal) in the development of policies to improve accessibility and mobility in urban areas. Six thematic areas have been considered as priorities: strengthening institutional frameworks, creating dedicated sources of funding, promoting the effective participation of civil society, improving multi-modal planning and operation, increasing the performance of public transport (in particular through the reform of paratransit services), and providing support to secondary cities. This report presents the findings, analysis, and recommendations developed through this project for Kenya.

This work was conducted in close partnership with the Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD). An assessment of the six priority areas presented above was carried out to identify the most relevant recommendations to be proposed for Kenyan cities. These recommendations were discussed at length at the Urban Mobility Forum organized under the auspices of MOTIHUD and bringing together a vast array of stakeholders in May 2018.

Situation overview

The urban areas of Kenya encounter many of the issues typically present in sub-Saharan African countries faced with rapid economic and demographic growth. While the country's GDP grew by close to 6% (year-to-year) in 2016, it is estimated that 40% of the population remains in poverty. In comparison to its neighbors, Kenya is not very urbanized, with roughly a quarter of its population living in urban areas. Nevertheless, the population of Kenyan cities is growing at a rate of 4.3% per annum on average. The bulk of this growth happens at the periphery, resulting in sprawling cities, low population densities, informal settlements, and poor accessibility to jobs and services. This, in turn, translates into longer commutes for residents, and increases the demand for motorized trips, which generate a host of negative externalities: congestion, road crashes, pollution, greenhouse gas emissions, etc.

The metropolitan area of Nairobi is the main economic driver of the country, amounting to half of the formal employment market, and contributing to half of the GDP nationally. The transport sector is particularly active in Nairobi, with a large number of transport projects currently being planned or implemented, often with the support of international development partners (BRT corridors, rail and light rail, road infrastructure). A nascent transport authority (NaMATA) has been established to organize urban mobility at the metropolitan scale, with a particular focus on the implementation of a BRT system. Mombasa is the main harbor of the country and a major commercial and touristic hub. It is characterized by relatively higher population densities on the central island, and the importance of water transportation (ferries) and three-wheelers (tuk-tuks), which are absent in Nairobi. A cluster of secondary cities, with relatively similar profiles in terms of urban transport, is located in the Rift Valley and to the northeast of Nairobi (Kisumu, Eldoret, Nakuru).

The urban mobility sector in Kenya is characterized by a strong reliance on walking (40% of trips in Nairobi are made by foot), despite critical deficiencies in NMT infrastructure. Longer trips are typically made using public transport, the most common form of which is the matatu (mini- to medium-size buses). The matatu industry is organized in associations at the national level, while operators are gathered in Savings and Credit Cooperatives (SACCOs) at the local level. Ownership of individual vehicles is still limited at the national level, but increasing rapidly – in particular in urban areas, where it is skyrocketing. Finally, smaller vehicles that can easily maneuver the streets of congested cities play an increasingly important role (moto-taxis and three-wheelers). Overall, the general trend in Kenyan urban areas is towards increased motorization and congestion, although the planned introduction (or enhancement, in the case of rail) of mass rapid transit systems may be able to partially mitigate the negative consequences of this trend.

Main findings

The findings of this report are as follows:

- The Kenyan i**nstitutional framework** is characterized by an ongoing devolution process. Although specific functions are progressively transferred from the national level to counties, the regulation of passenger transport services is primarily handled by a national agency (NTSA), while service delivery is managed by the private sector (with a few exceptions). Worth noting is the existence of an appeals board, which strengthens the legitimacy of the license-attribution process. As the urban transport sector is evolving rapidly, with the introduction of new projects and actors, there is a need for an overall increase in institutional capacities, and increased coordination between the different levels and bodies of governance. The situation of NaMATA, which is yet to be established by an act of parliament, illustrates these challenges.
- The main **sources of funding** at the national level are the Consolidated Fund (for investments) and the Road Maintenance Fund (for maintenance). International development partners also play an important role in the financing of infrastructure and institutional development efforts. Counties have a limited capacity to generate funds (through the collection of taxes and levies) but are still largely dependent on national transfers to finance capital expenditure. Cities are often left with a deficit of investment and maintenance capital translating into an infrastructure backlogs. At the metropolitan level, the funding mechanisms for NaMATA are yet to be determined (distribution in terms of national and county allocation to NAMATA in particular still have to be settled) .
- Kenya possesses strong and evolved **systems of civil society participation**, representing a variety of interest groups. One of the most well-structured and evolved bodies is the network of residents' associations assembled under the umbrella of KARA. KARA is a strong advocate for NMT infrastructure. While academia has a long-standing involvement in the urban transport sector in Kenya, the tech industry is also emerging as an increasingly important actor (through start-up companies such as Ma3Route, for instance). The highly structured organization of the matatu industry should also be noted.
- From a **multi-modal planning and operations** point of view, the transport system in Kenyan cities favors low-capacity motorized modes, with the exception of commuter rail in Nairobi. Both Nairobi and Mombasa are planning for the introduction of Mass Rapid Transit systems, along with the expansion of their commuter rail capacity. However, current mass rapid transit projects tend to put infrastructure on the front seat and NMT does not enjoy a sufficient level of attention. Similarly, traffic management is inadequate and drastic changes are required to meaningfully improve operating conditions for all modes of urban transport.
- In terms of **public transport performance and potential for paratransit reform,** urban mobility is heavily dependent on the matatu sector, which is characterized by numerous negative externalities (largely resulting from the prevailing economic model in the industry). As public interventions have oscillated between laissez-faire, attempts to regulate the sector, and discretionary enforcement practices, the environment has not been conducive to the implementation of much needed in-depth reforms (although operators appear ready to welcome such reforms).
- In **secondary cities,** the relationship between the national and local levels of government is shaped by the dynamics of devolution. Although county governments are eager to embrace new functions, they will have to develop capacities commensurate with these new responsibilities, and increased coordination with the national level). There is also a need to systematize transport planning in secondary cities, while acknowledging the relatively higher modal share enjoyed by NMTs.

Recommendations

The recommendations in this report are structured following the Enable-Avoid-Shift-Improve (EASI) framework.

Enable – Governance efficiency

- Develop a clear finance and fiscal framework, increasing the legibility and predictability of public contributions to the public transport sector.
- Support the creation of a properly empowered and capacitated metropolitan governance body, via the establishment of NaMATA by an act of Parliament.
- Enhance the devolution of urban mobility functions through improved institutional capacity, data, and the setting of norms and standards.
- Increase transparency and accountability of the regulatory system by strengthening the role of the Transport Licensing Appeals Board.

Avoid – Land-use inefficiency

- Better integrate land use and transport planning in urban areas, through the preparation of integrated multimodal urban development plans.

Shift – Multimodal transport system efficiency

- Avoid mistakes made by others in implementing Mass Rapid Transit systems, in particular with regard to excessive focus on infrastructure investment, and insufficient foresight of operations.
- Invest in building the capacity of the matatu industry and promote engagement between counties and the matatu sector.
- Enhance of the use of ICTs in urban mobility matters and develop a centralized transport data portal

Improve – Road-space use and vehicle efficiency

- Improve the Nairobi traffic signaling system, starting with the definition of a traffic management strategy
- Formalize the role of civil society bodies in access and urban mobility matters.

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 framework

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.

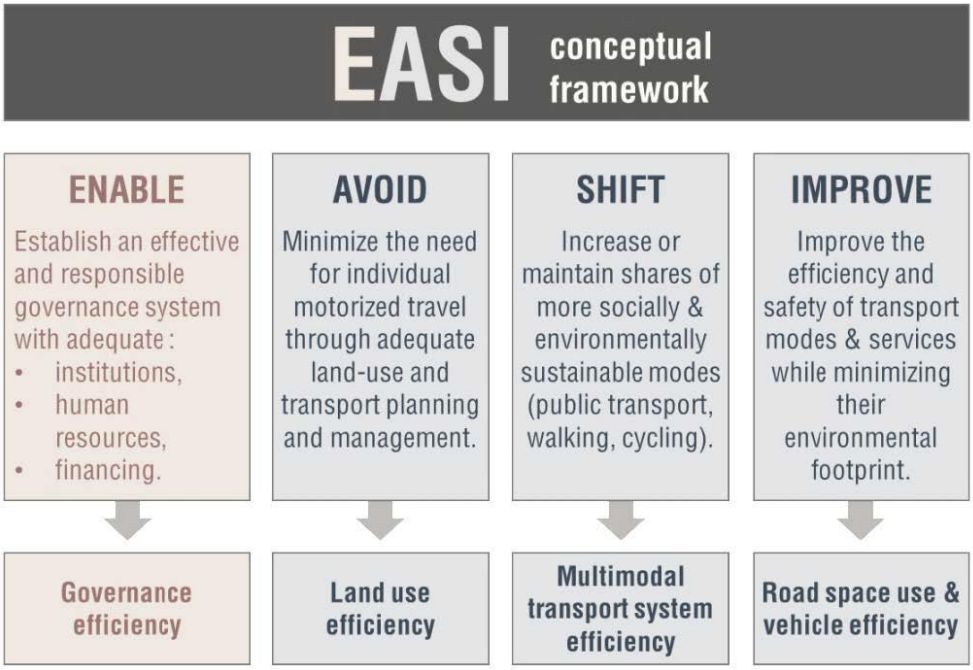


Figure 1 - EASI, a conceptual framework to guide public action towards sustainable accessibility and mobility in African cities

Following this publication, a complementary work program was defined for the implementation of these guidelines in eight program member countries (Côte d'Ivoire, 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 Kenya. This diagnosis was established through the experience of the mobilized experts, field visits to Nairobi and Mombasa, 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, Infrastructure, Housing and Urban Development, this work looked at the main issues of mobility and accessibility in Kenyan 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 derived from the EASI concept, which are intended to be pragmatic and realistic, 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 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 (Mombasa) 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 i in 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 at the National Urban Mobility forum organized in Nairobi on 17 and 18 May 2018. Following a presentation of the findings from the study, 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 team, preparing 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 at the Forum, were then presented and collectively approved during the closing plenary session of the forum. The final recommendations presented in this report thus incorporates the main outputs of the national urban mobility forum.

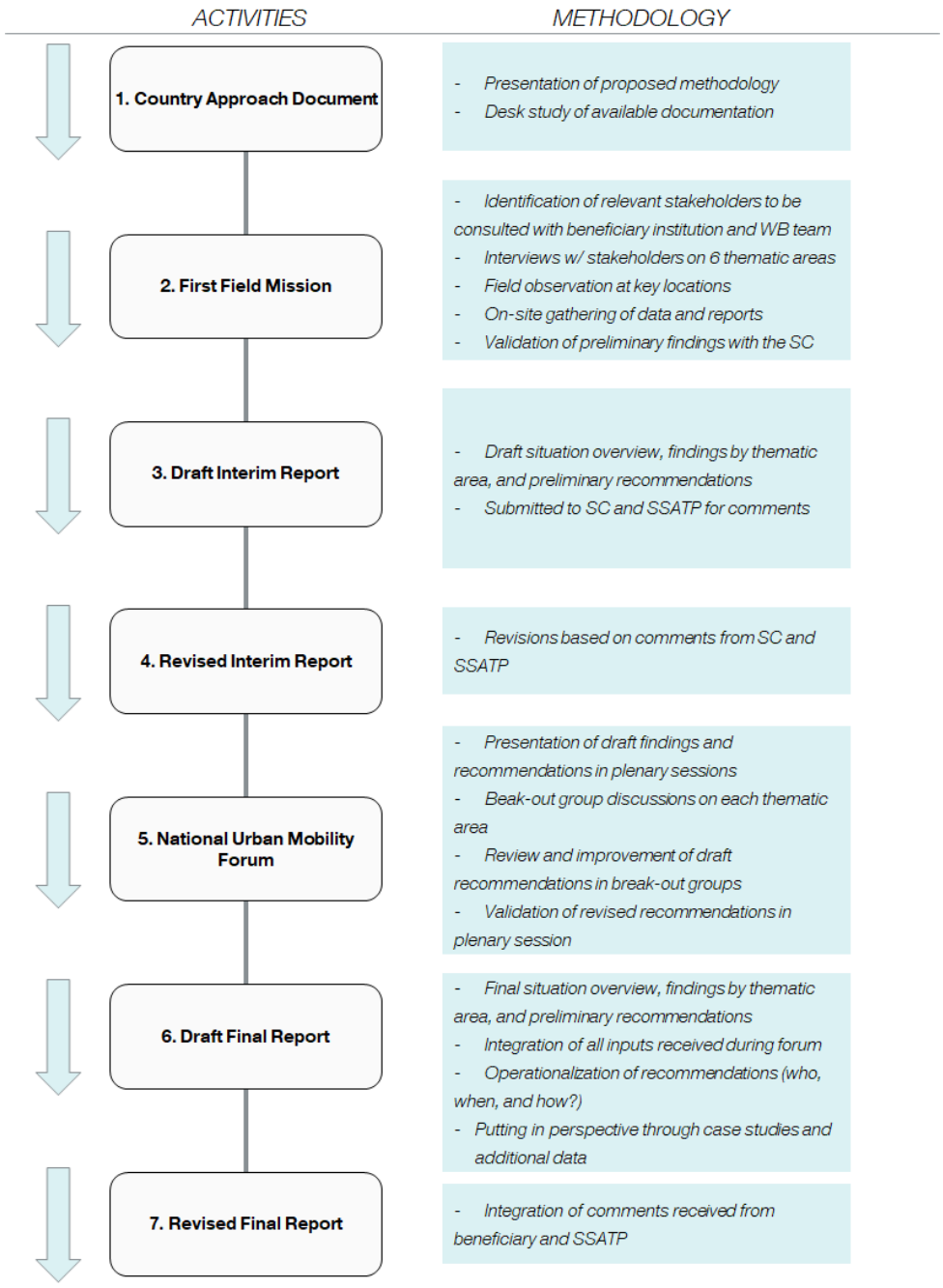


Figure 2 – Flowchart of study process and methodology

1. Urban mobility issues in Kenya

1.1 National urban development

1.1.1 National trends

The Republic of Kenya is a 580,000 km2 country located in the East Africa region, sharing its borders with Ethiopia, South Sudan, Uganda, Tanzania and Somalia. Kenya is one of the most dynamic countries in the Sub-Saharan area with an economic growth rate of 5.8% in 2016 (World Bank, 2017). The country is mainly driven by export (agricultural products, mining and gas exploration), manufacturing, infrastructure projects, and the services sector. However, Kenya also has a poverty rate above 40%, and 9.3% of its population remains unemployed.

The population of Kenya has increased rapidly over the past 30 years, reaching 48.5 million inhabitants in 2016 (World Bank, 2017). More specifically, Kenya's urban population is about 14 million people, and is projected to reach 22 million inhabitants by 2030 (World Bank, 2016). Kenya's urbanized areas are spatially concentrated around the Northern Corridor, the country's most important route connecting Mombasa seaport to the country through Nairobi and Malaba. The concentration of population along this corridor has created three main urban hubs:

- The coastal hub around Mombasa and the Kilindini Harbor;
- The central hub around Nairobi and Thika;
- The western hub with a cluster of four leading towns: Kisumu, Nakuru, Eldoret and Kericho.

Only 27% of people live in urban areas which is a smaller proportion of the population than its neighbors and African counterparts. Based on a correlation of GDP per capita and urbanization levels for several countries, about 40% of Kenyans, given their current GDP, should be living in urban areas. Despite being "under-urbanized" by this comparison, the country has shown a rapid urban growth with an annual rate of 4.3% (World Bank, 2016). Following this trend, Kenya is expected to be an urbanized country in 2050, with more than 50% of its population living in urban areas, creating an urgent need to build vibrant, productive and healthy cities.

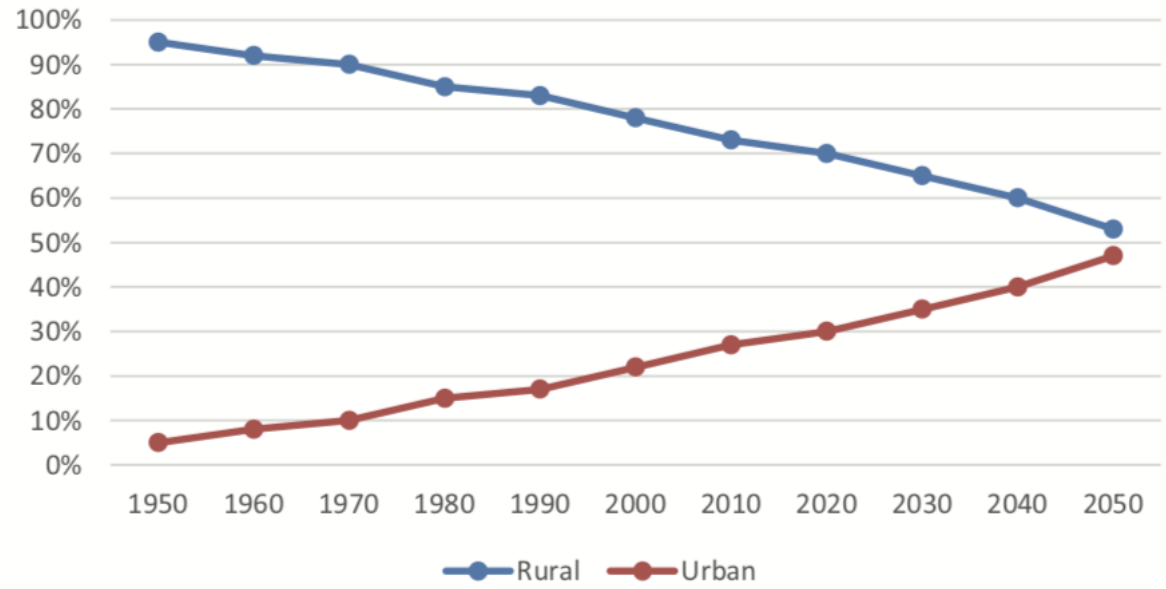


Figure 3: Urban and rural share of population (World Bank, 2016)

In 2008, Kenya launched an ambitious country development program called “Kenya Vision 2030” with the aim to transform the country into a newly industrializing, middle-income economy with a consistent annual growth of 10% by 2030. Developed through an all-inclusive and participatory stakeholder consultative process, and involving Kenyans from all parts of the country, the Vision is anchored on three key pillars: economic, social, and political governance. The program aims to impact every sector of development, including urban planning and urban mobility especially as cities are key engines of growth and will be key to achieving Vision 2030 goals.

Kenya also has an Integrated National Transport Plan and a National Urban Development plan that serve as important national frameworks for improving urban mobility and accessibility in the country where accessibility here refers to the fact that a key goal of urban transportation planning is to provide people with access to opportunities for interaction with other people and places, a goal which supports the creative dynamics, livability, and productivity of cities. Accessibility can be created by moving services closer to people to avoid travel or by building housing near transit hubs and is different from mobility which focusses on movement. The country is also committed to the Sustainable Development Goals including SDG11 “to make cities and human settlements inclusive, safe, resilient and sustainable” and is a signatory to the Kyoto Protocol and the Paris Agreement.

	COTE D'IVOIRE	ETHIOPIA	GHANA	GUINEA	KENYA	NIGERIA	RWANDA	SENEGAL
DEMOGRAPHY								
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
URBANIZATION								
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
ECONOMY								
GDP per capita *($PPP, 2016)*	3 693	1 734	4 293	1 966	3 151	5 861	1 913	2 567
Average economic growth rate *(% / year, 2010-2015)*	5,8%	10,6%	7,7%	4,5%	6,0%	5,2%	7,5%	4,1%
Poverty headcount ratio w/r to the international poverty line *(2011 PPP, % of pop.)*	28%	34%	14%	35%	34%	54%	60%	38%
Human Developement Index *(0-1 scale, 2015)* 0 - low , 1 - high human development	0,47	0,45	0,58	0,41	0,56	0,53	0,50	0,49
BUSINESS AND GOVERNANCE								
Doing Business *(Distance to Frontier, 2017)* 0 - lowest, 100 - highest performance over time or "frontier"	52	46	57	49	63	48	70	49
Corruption Perceptions Index *(1-100, 2016)* 1 - low transparency or high corruption, 100 - high transparency or low corruption	34	34	43	27	26	28	54	45
MOTORIZATION								
Gazoline Price / Diesel Price *(US$ / 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 *(2018)*	620 000 *(2016)*			1 300 000 (2014)	11 500 000 (2017)		470 000 *(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[1]

1.1.2 Presentation of Kenya's main cities

Nairobi, the economic hub of Kenya

Nairobi is the capital city of Kenya and its principal economic driver: the metropolitan area of Nairobi generates over 50% of the Kenyan GDP and accounts for 50% of formal employment in Kenya (JICA, 2014). Centrally located, Nairobi is also the administrative, political and cultural center of Kenya. According to UN Habitat, the total population was 4.43 million inhabitants in 2017 accounting for

[1] Data from World Bank, Doing Business, OICA, UNDP, UN Habitat, Transparency International, sources are detailed in appendix

9.13% of the national population. The average population density is 5,400 people per km^2 with great variations in density across the city. In line with national trends, the city is experiencing rapid urban growth with 6 million inhabitants expected by 2030 (World Bank, 2016).

Nairobi has a central business district (CBD) where a majority of businesses, government buildings and international organizations (incl. the African headquarters of the United Nations) are located. It is characterized by the availability of a high level of services and accessibility. Middle-income households live in extremely dense tenements in close proximity to the rectangular CBD. A long history of social segregation, where the rich live in secluded areas and the poor cluster around the CBD (Kibera is one of the world's most famous slums, is just 6 km from the center) continues with the ongoing construction of gated communities best accessed by private car.

The Kenyan constitution devolves some critical institutional governance functions for urban planning, development and mobility to the Nairobi City County government, although the Ministry of Transport, Infrastructure, Housing and Urban Development engages in developing key policy frameworks and major projects that impact the city – including national highway expansion as well as runs the railways.

In this intergovernmental context, it is important to note the establishment of the Nairobi Metropolitan Area Transport Authority (NaMATA) in 2017 by means of an Executive Order with the mandate to plan, regulate and oversee the establishment of an integrated, efficient, effective and sustainable public transport system within the Nairobi Metropolitan Area. This institution ideally brings the two levels of government together to cooperate and manage metropolitan wide transport issues.

Mombasa, Kenya's main port

Mombasa, located in the south-eastern part of Kenya on the shores of the Indian Ocean, serves as the sea lane gateway of Kenya to the world. It is 400 km southeast of Nairobi and 80 km north of the border of Tanzania. This major commercial and touristic hub is the country's second-largest city, with 1.1 million inhabitants in 2015. The city is served by an international airport and, most importantly, by the Kilindini Harbor, East Africa biggest seaport supplying Kenya and the larger Great Lake Region countries.

Figure 4: Ferry to the South cost of Mombasa

Most city functions are concentrated within Mombasa Island: it counts a population density of over 10,000 persons per km^2 (in comparison, other constituencies have a density of 3,500-5,000 inhabitants per km2) and is currently connected to the southern coast of Mombasa by the ferry service.

Kisumu, a commercial center on Lake Victoria

Kisumu is the third largest city in Kenya with 410,000 inhabitants[2], is growing at an annual rate of 4%. Located on the shores of Lake Victoria, this major commercial center shares borders with Uganda and Tanzania. Connected to Nairobi and Mombasa by train, it also has an international airport. Today, the main mode of transport in Kisumu is road transport with matatus, boda bodas and tuk tuks providing public transport services within the city. Many people also use non-motorized transport including cycling.

Nakuru, Kenyan mid-west urban center

Nakuru, the country's fourth-largest city, located in the Great Rift Valley, is the largest urban center in the Kenyan mid-west. The city counted 307,990 inhabitants in 2009, and its growth is mainly driven by agriculture, tourism and industrial production.

Eldoret, capital of Uasin Gishu County

The population of Eldoret was 289,380 in the 2009 census and it is mentioned as the fastest growing city in Kenya. The Economy of the city is driven by agriculture (large-scale grain farming, dairy and horticultural farming). The city is also a manufacturing hub, notably for agri-food processing. As Nakuru, the city is served by Kenya-Uganda railway .

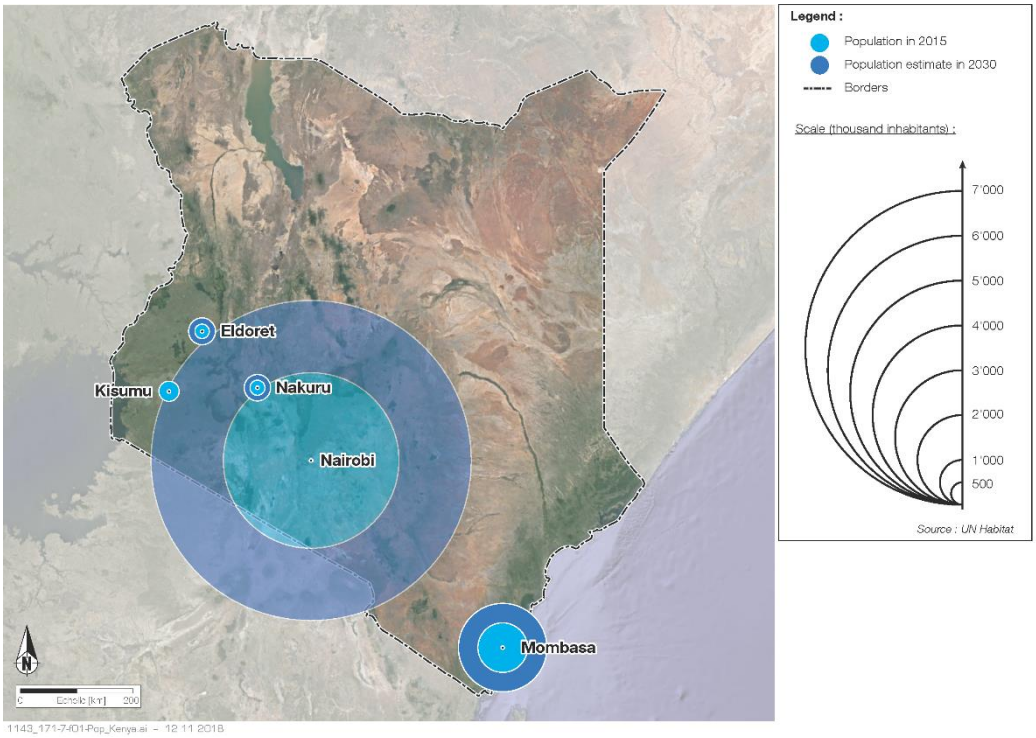


Figure 5: Cities over 300 inhabitants in Kenya in 2015[3]

[2] according to the 2009 census, but according to UN Habitat Kisumu counted less than 300,000 inhabitants in 2014.

[3] Data from UN Habitat. (2014). World Urbanization Prospects: The 2014 Revision.

1.2 Motorization trends

1.2.1 Rapid Motorization

At the national level, the motorization rate in Kenya remains low. The current motorization rate, depending on the source, ranges between 26 and 28 vehicles per 1,000 persons. However, this is forecasted to increase to 31.5 vehicles per 1,000 persons in 2019, reflecting vehicle ownership growing faster than Kenya's population (BMI, 2015). The Kenyan total vehicle fleet is estimated to be around 1.3 million units in 2014, with approximately 80% being second-hand vehicles.

Despite remaining low, the motorization rate is growing. According to the Kenya National Bureau of Statistics (KNBS), the volume of imported vehicles between 2003 and 2012 increased by over 300% from 33,000 units to 110,474 units. In 2015, a total of 112,536 vehicles were registered – this included newly registered and re-registered vehicles.

Import rules will change in the coming years in order to limit the aging of the car fleet and to support the increase in the number of vehicles produced in Kenya. The import age limit for vehicles, currently 8 years, will be reduced to 5 years by 2021. Currently the import rates don't encourage the import of new vehicles. Importation of all vehicles is subject to 25% import tax, 16% VAT, 2.25% import declaration fee and 1.5% levy for railway development composed of two types of taxes. The variable part according to the age of the vehicles is minimal: 150,000 KES for vehicles less than 3 years old and 200,000 KES for those over 3 years old.

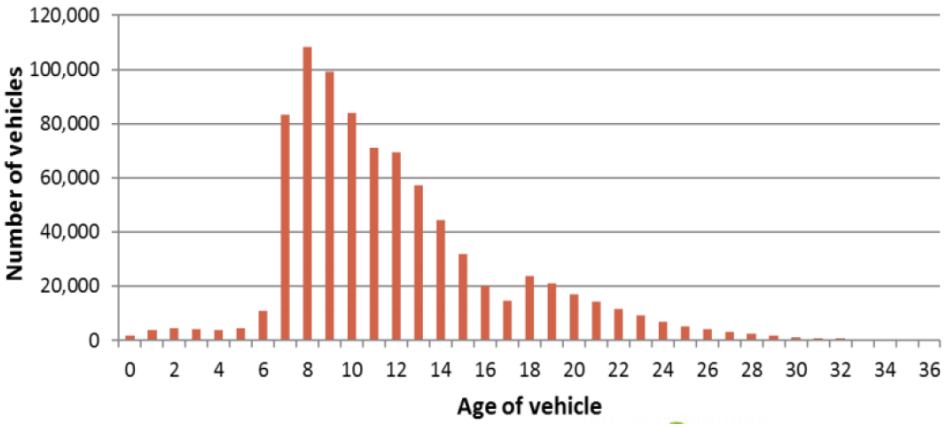


Figure 6: Average Profile of cars in 2016[4]

In 2018, Kenya saw its car production strengthened with Volkswagen's investment in its plant in Thika. As a whole this sector seems to be growing with the attraction of new manufacturers such as Peugeot or Nissan who plan to invest in the automotive industry in Kenya. It has to be noticed that bus body building and vehicle assembly already existed in the country since 1976, with Kenya Vehicle Manufacturers (KVM), a public-private joint venture.

If the current trend of 10% to 12% growth per annum on vehicle imports is to be maintained or substituted by local production, Kenya will have five million vehicles on the road by 2030.

Automobiles are not the only vehicle type impacting on this trend. KNBS data shows that motorbikes or boda bodas constitute more than half of the total number of vehicles registered between 2014 and 2016, and the number of boda bodas purchased had similarly been on a constant rise after government made them cheaper with the scrapping of the Sh 10,000 excise duty per unit in September 2016.

[4]Nyang'aya (2018), Fuel Economy Policy Impact Tool Case Study

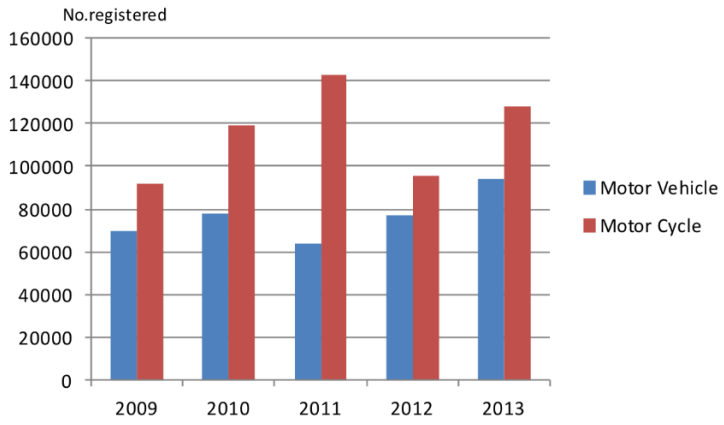


Figure 7: Kenya's number of newly registered vehicles and motorcycles (JICA, 2014)

Following the national trend, the motorization rate in Nairobi has also been growing, with a 67% increase in private automobiles between 2004 and 2013 (World Bank, 2016). Compared to other African capital cities, Nairobi has a high number of private cars at 96 cars per 1,000 inhabitants, although they are only used for a small share of trips (approximately 12%).

One key area of concern is the inadequate attention paid to NMT facilities and public transport upgrading when these are the dominant modes utilized by the majorities in Kenyan cities (ODI 2018, Nairobi City County 2017). The Nairobi County NMT Policy notes that "NMT users are exposed to fast, aggressive and high MT volumes with the consequences of high traffic accidents". From observations, encroachment of NMT spaces is evident and vulnerable road users, women and children have difficulties travelling without assistance.

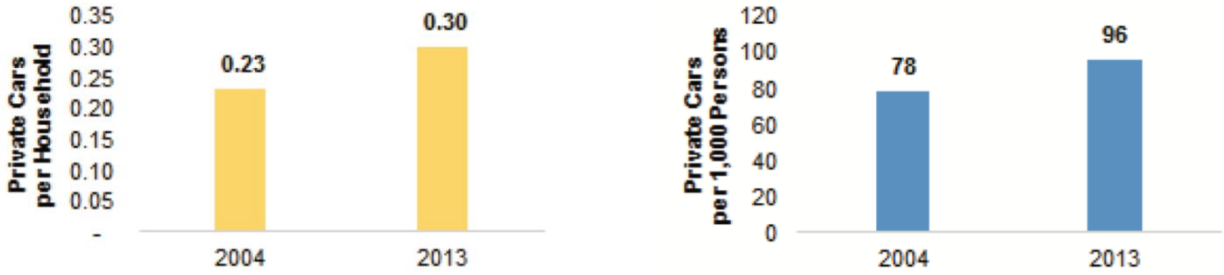


Figure 8: Motorization rates, Nairobi, 2004 and 2013 (World Bank, 2016)

1.2.2 Air pollution and greenhouse gas emissions

Air pollution is a major contributor to respiratory diseases in Kenyan cities, with concentration of particulate matter (PM) in many places exceeding recommended thresholds many fold. A study conducted on PM 2.5 in Nairobi, for instance (Kinney et al, 2011), found that residents are exposed on a regular basis to elevated concentrations of fine particle air pollution, with potentially serious long-term implications for health. One estimate suggests that exposure to fine particulate matter in the air is responsible for approximately 19,000 premature deaths annually, costing the country USD 2,244 million per year for ambient air pollution (Roy 2016). Thus, the health impacts of air pollution can hinder development and impede progress towards the achievement of Vision 2030 and SDGs. In urban areas, transport is the major contributor to this problem (Odhiambo et al. 2010).

National ambient air quality regulations exist in Kenya and are referred to as "The Environmental Management and Coordination (Air Quality) Regulations, 2014". Guidelines for assessment of air quality in the 2014 regulations seek to, among other things, "establish source contributions to ambient concentrations of pollutants" and "assess the environmental benefit of measures to reduce and

maintain air quality within limit values". Where there has been significant progress in formulating guidelines, no national or local air quality monitoring program is in place. Air quality monitoring is done on an ad hoc basis in response to air pollution complaints and short-term research campaigns often initiated by academic institutions.

The transport sector represented 15% of national greenhouse gas (GHG) emissions in 2015. This share is expected to rise to 17% by 2030 (Government of Kenya, 2017). The Kenyan government ratified the United Nations Framework Conventions on Climate Change, Kyoto Protocol and the Paris Agreement. The Ministry of Environment and Natural Resources of Kenya published its Intended Nationally Determined Contributions (INDC) policy in July 2015. With this framework, Kenya aims to achieve a low carbon, climate resilient development pathway and transportation is one pillar of this mitigation plan to ensure a decrease in GHG emissions. The overall target for Kenya is to abate emissions by 30% by 2030, compared to a business-as-usual scenario. The transport sector will contribute to this objective by cutting emissions by at least 8% (minimum target). The implementation of BRT and commuter rail systems in Nairobi are expected to support this effort, although their gains in terms of reducing GHG emissions require quantification and measurement. The National Urban Development Policy also recommends enforcing (a) emission testing in all transport modes and (b) the polluter pays principle and setting standards and guidelines for timely decommissioning of vehicles, marine vessels, aircraft and trains. Overall, as concern about decarbonizing transport systems increases with our climate change threat, more systematic monitoring in connection with improved transport interventions could help link to green financing for public transport improvements.

The Ministry of Environment and Forestry (MEF) is the lead ministry addressing climate issues in Kenya. While it is in charge of emissions monitoring through the establishment of national inventories, the responsibility to take actions to reduce emissions from the transport sector lies with MoTIHUD, through the implementation of projects such as the implementation of MRT systems.

1.3 Description of Urban Mobility Challenges

1.3.1 Main issues in Nairobi

Nairobi is the most populous city in Kenya and is expected to become a city of 6 million people by 2030 (World Bank, 2016). Today, it is one of the most congested cities in Africa, experiencing long-waiting times at intersections and slow-moving vehicles. Nairobi has one of the world's longest average journey-to-work times: regardless of traffic, the current average travel time is 47 minutes and only 11% to 20% of public transport users live within one-hour travel time of their place of work (World Bank, 2016). Similarly, difficult access to jobs, public services, parks and amenities impacts negatively on quality of life as most people experience long travel distances, inadequate public transport and long travel times. Nairobi also suffers a high level of atmospheric pollution (Kinney et al, 2011; Maina et al, 2018), and high vehicle crash rates especially impacting pedestrians. Poor infrastructure design causes many crashes (ODI, 2018).

Figure 9: Congestion in an important arterial of Nairobi CBD

Non-motorized transport (NMT) is the dominant travel mode in Nairobi, with 40% of commuters walking especially the poor who find public transport expensive (Gulyani et al. 2010). Public transport services are mainly road-based and rely heavily on the paratransit sector. Public passenger transport is operated by the private sector, mainly low-capacity minibus vehicles called matatus, they are used for 29% of trips in the urban area. Busses run on the same routes and in the same manner as matatus (10% of trips) and two-wheel vehicles (boda bodas) are used for 5% of trips. Commuter railway transport is limited to services during peak hours between the CBD and the eastern and southern parts of the city although there are important efforts to improve and expand capacity.

Recent accessibility studies show that the dominant matatus create important access to services but increased integration of all modes of transport and land-use is still required to avoid significant, existing spatial mismatch between residential areas, jobs and services (World Bank, 2015, Avner and Lall 2016, Campbell et al. 2018).

Destination	30-minute walk		30 minutes by matatu	
	Population with access	Share (%)	Population with access	Share (%)
Hospitals	2,955,473	74.8	3,387,962	85.7
Schools	3,335,202	84.4	3,942,722	99.8
Existing park	2,528,747	64.0	3,193,028	80.8
Proposed park	3,528,392	89.3	3,743,169	94.7

Source: Hospital locations, Google Maps; park and school locations, Columbia University CSUD (2005); population density, WorldPop; 30-minute accessibility calculated by Conveyal.

Table 2: Number and share of Nairobi City County's population with access to public services within 30 minutes, walking or by matatu[5]

Until 2014, there was no map of existing public transport routes in Nairobi, for instance. This gap was filled by the Digital Matatus project[6], which collected data on Nairobi's matatu routes and released it

[5] Source: Campbell et al. (2018)

[6] Tis project is led by Columbia University, MIT, University of Nairobi and the design firm Groupshot

publicly on various platforms. This data is also periodically updated it to keep up with a highly dynamics city. The creation of a GTFS dataset allowed application developers to access the data in a standardized format and use it for various purposes (e.g. online journey planning) and allows for the analysis of accessibility and spatial mismatch (World Bank 2016, Avner and Lall 2016, Campbell et al 2018). While this data contains information about operating hours and estimated headways, there is an overall lack of basic standardized data including performance indicators on passenger transport operations in Kenyan cities. Such data will also be needed for Kenya's reporting on SDG 11.2 target: "proportion of population that has convenient access to public transport, by sex, age and persons with disabilities" (UN Statistical Committee 2018).

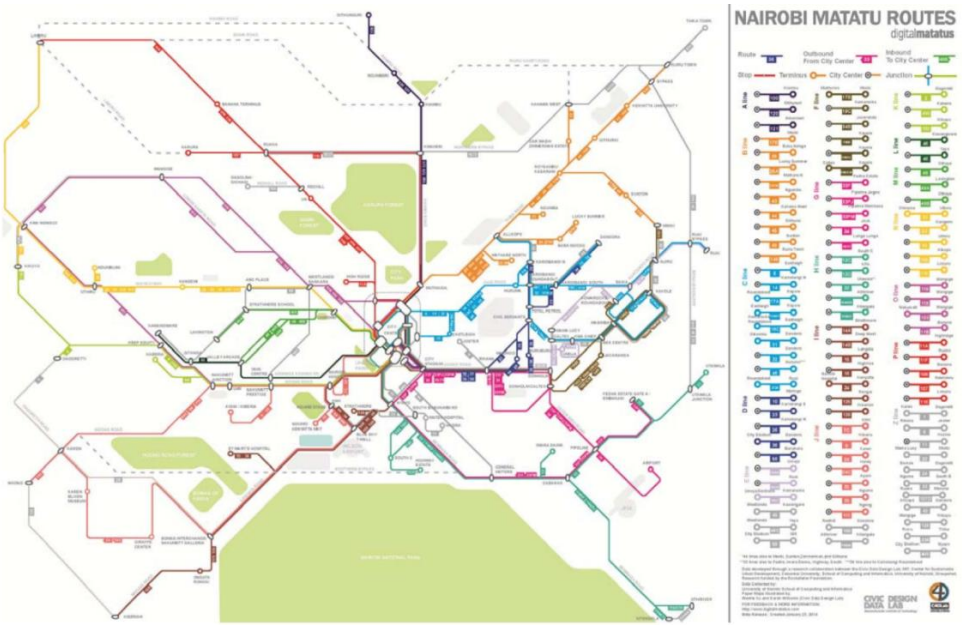


Figure 10: Map of Nairobi's matatu service (Digital Matatus, 2015)

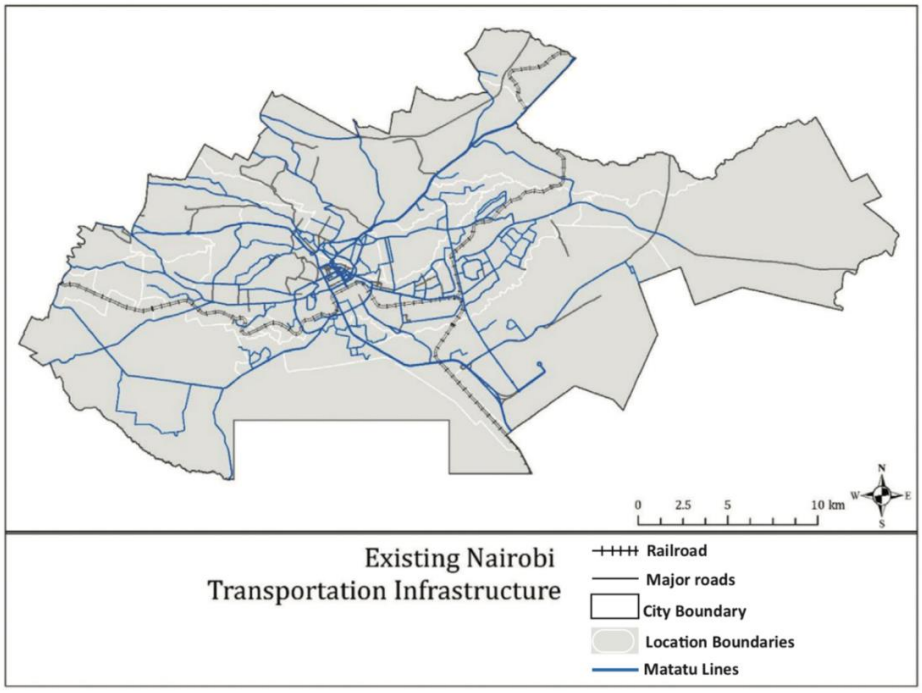


Figure 11: Existing transport infrastructure, Nairobi City County, including major roads, rail lines and matatu lines (World Bank, 2015)

Figure 12: Nairobi Commuter Train Route Map

As noted, there is a low but increasing use of private cars in Nairobi (12% of trips). Global trends show that as commuter income increases, the use of private cars increases accordingly, while the use of walking as a means of transport declines – in particular if no alternative is provided in the form of quality mass rapid transit system. However, with current high levels of congestion, pollution, crashes and climate change concerns, strong efforts are needed to encourage public transit and non-motorized transport (NMT) solutions as a way to address problems linked to this trend.

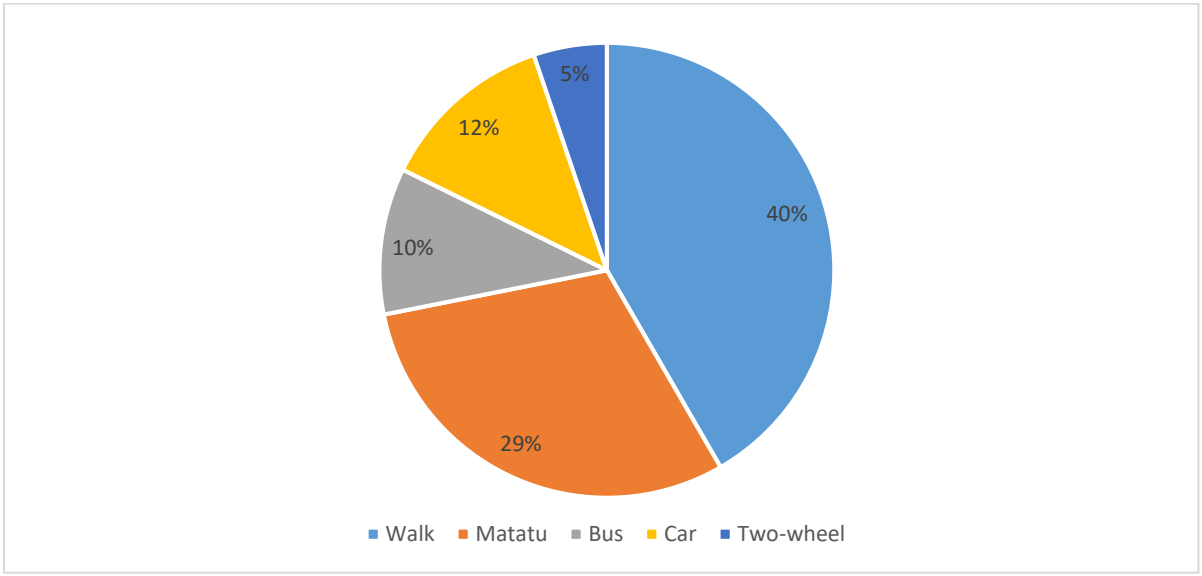


Figure 13: Transport modal shares in Nairobi (World Bank, 2014)

Nairobi is characterized by a rapid spatial expansion and is now, with other surrounding counties, the core of a larger metropolitan area. The urbanized spatial area is growing faster than its population: between 2003 and 2014, total urbanized land in Nairobi City County increased by 29% more than its

population, mainly in the eastern part of the city (World Bank, 2016). This expansion involves numerous middle and upper-class developments composed of gated communities and high-end real estate – where residents primarily rely on individual motorized modes of transport. It is made possible by infrastructure development, such as the recent construction of Thika highway, which allow commuters to reside further away from their workplace.

Poverty, gender, and social inclusion

It is important to note that, despite the emergence of a middle class, more than 50% of Nairobians still live in informal settlements, and there is some evidence that these residents accept poor housing in exchange for convenient access when public transport is expensive (Campbell et al. 2018). A survey of slum residents in Nairobi, found that the majority cannot afford any of the motorized transport options in the city (Salon & Gulyani 2010). They cope by limiting their travel outside their settlement and, if they do have to travel, they often choose to walk. This study also reported that the burden of reduced mobility is borne disproportionately by women and children who face distinct barriers to access. Improving NMT infrastructure is therefore critical, not only in terms of sustainable mobility, but also in terms of social inclusion – to increase access to jobs, services, and opportunities for the poor.

Harassment of women in the public space (be it physical, sexual, or verbal) is a major issue that particularly affects the urban mobility sector, as an important share of these incidents happen in or around public transport terminals and vehicles. The Flone initiative (cf. section 1.4.2) has developed a platform and a hotline allowing victims to report harassment online. More than 250 incidents have already been reported to date. To remedy this situation, a public safety certificate program (Usalama wa Uma) has been launched by Flone to train public transport providers on customer service, gender equality, prevention of sexual harassment, professional and personal development. As of March 2018, 554 public transport operators had received training countrywide.

Parking space

Parking space is a challenge for any motorist. According to the IBM Global Parking Survey (2011), the key issues are the amount of time required to find a parking spot, inability to find parking space, disagreement over parking spots, receiving a parking ticket for illegal parking and number of parking tickets received. The price is also a challenge where motorists pay a flat daily fee of Sh300. The City is seeking to increase the number of parking places from 12,000 to 20,000 (Standard Digital, 2018) as well as a decrease the cost of parking. The City Hall is thus planning to build multi-story parking lots which will further car use in the central business district (CBD). It is important to note that this move would be counter to the best practice of reducing private car use and enhancing public transport and walkability (and even car free zones) in city centers. Currently, these challenges mean many people choose to leave their car at home to use the dominant form of public transport, namely matatus which serves to reduce congestion.

In 2016, ITDP conducted a parking survey in central Nairobi, providing both occupancy and turnover analyses. Although the scope of that survey was limited to an area of 1.6 sq. km in the CBD, its conclusions are likely replicable in other areas and cities. The key finding was that parking management could be vastly improved by establishing a clear and systematic enforcement regime, as well as redirecting economic incentives to balance demand and supply. As is often the case when the price of parking is not linked to its duration, the observed situation is one where half of the parking slots were occupied by long-term users (representing only a fifth of the cars). Increasing parking turnover via progressive fares could therefore be an efficient way to increase parking availability for short-time users (e.g. shopping trips), while discouraging long-term users from monopolizing on-street parking.

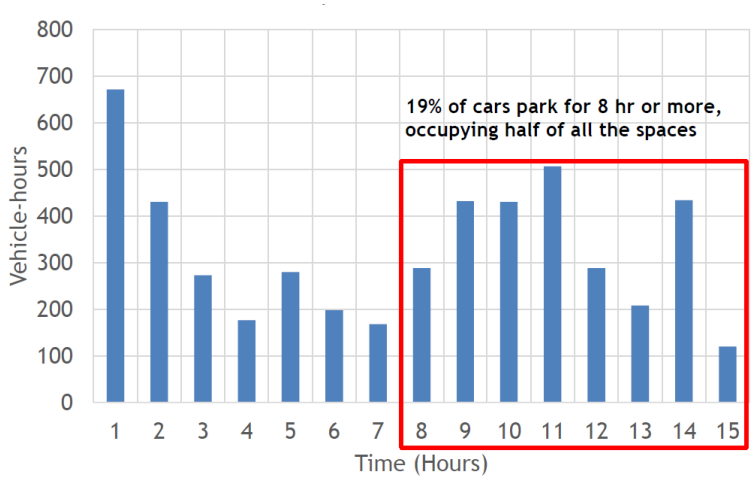


Figure 14: Parking turnover analysis in Nairobi's CBD (ITDP, 2016)

In 2017, the Nairobi City County announced that matatus would be banned from the CBD in order to ease traffic for private cars. The Nairobi Governor announced that 30,000 public service vehicles would no longer be allowed to access the center but would stop at nine different termini outside the CDB. There are currently no designated parking areas for matatus in the CDB, but major terminals exist in the core (see below) and some streets are turned into de facto parking lots where passengers queue during peak hours to get to their destination. Given how critical these terminals are to the function of the matatu system as a whole, this decision of the Nairobi City County was shelved after protest action by commuters and drivers alike.

While the civic center and most administrative jobs are located in the central business district of the city, secondary shopping and employment centers have developed in the periphery along the main arterials. Although Nairobi can no longer be considered as a monocentric city, the transport network is still very much organized around the CBD. Most public transport routes pass through the CBD and the road network has a radial structure. The lack of circumferential roads, a need for better public transport planning for cross- town routes, and an inner-district network have widespread negative effects on traffic flows. Because of the urban structure, most public transport users converge daily towards the Central Business District.

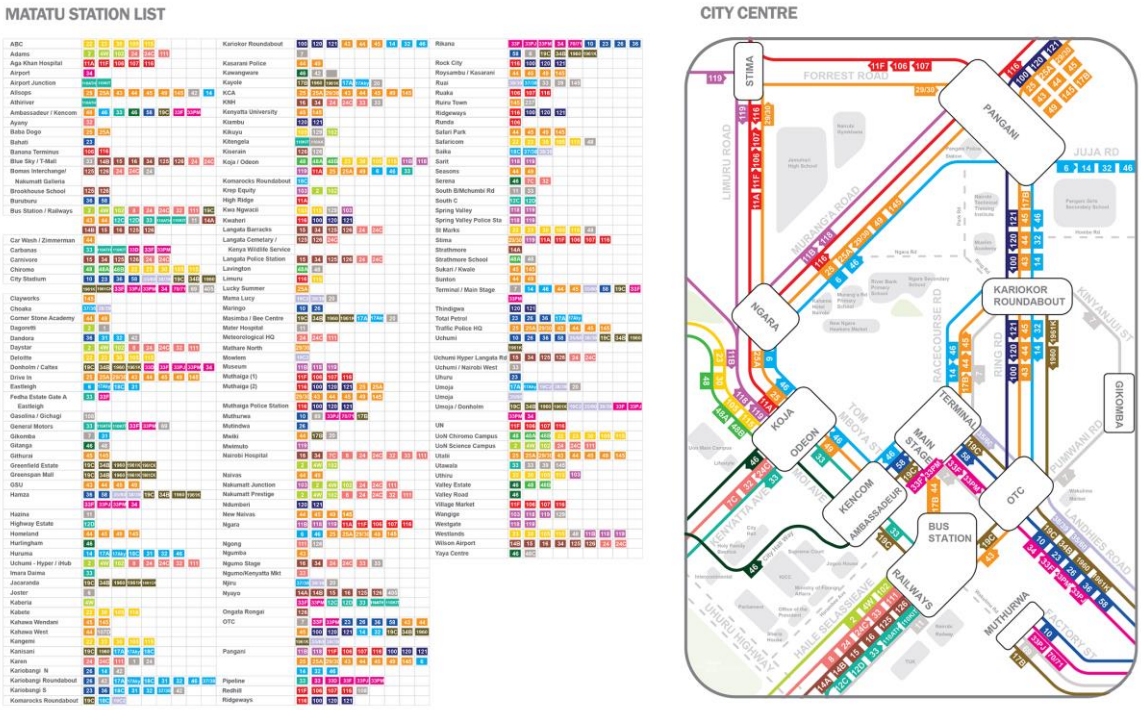
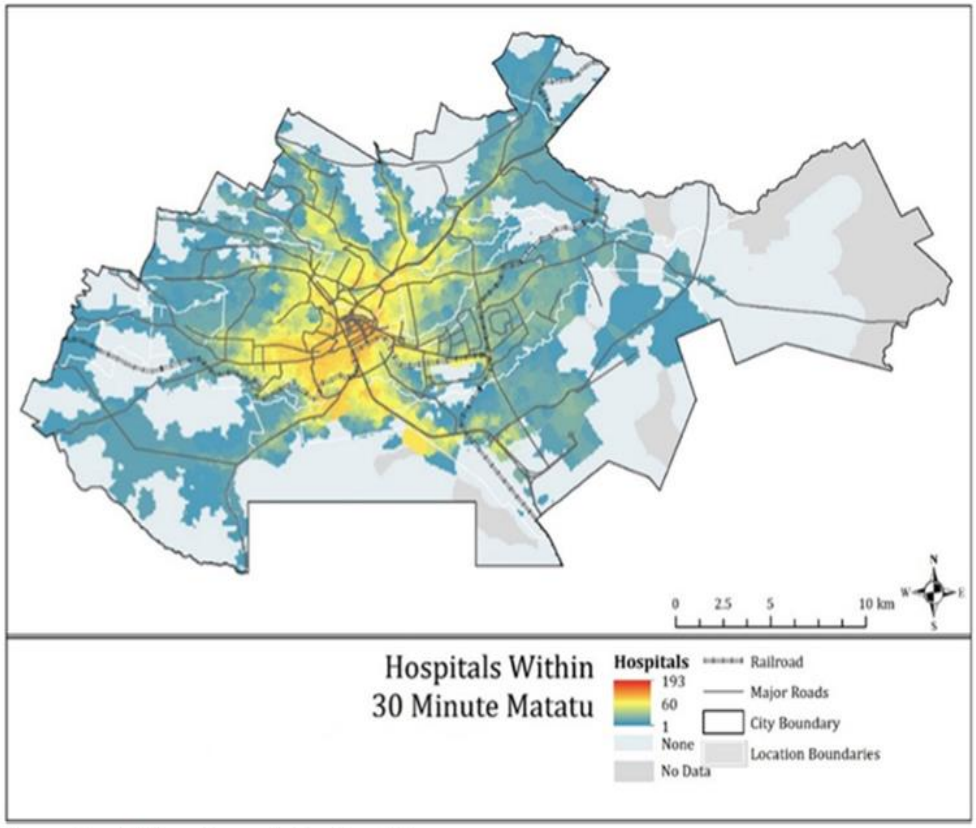


Figure 15: Digital Matatus map shows the complex problem of poor network design in Nairobi CBD

The Digital Matatus map allows us to see more clearly the matatu system as a radial network with all major routes converging on the center contributing –along with cars– to congestion. Connections cluster at the city center, and the absence of cross-town routes means passengers must get off and walk a distance to find another matatu to cross the city. As Jarrett Walker notes: "*This is a common thing that goes wrong in privately evolved systems. Every matatu wants to go downtown because it's the biggest market, and a matatu driver doesn't have to be coordinated with anyone else to fill a bus going to and from there.*" (Walker 2014). While these systems generate certain efficiencies, they do not create the best kinds of networks for the city and its residents. This suggests negotiating network reorganization, using financial support as a lever, could improve public transport significantly along with more localized upgrading of roads, stops and terminals, developing service contracts to improve service and other critical measures, lessons that might be learned from South African cities (Schalekamp and Klopp, 2018).



Source: Google Maps; Conveyal; OpenStreetMap.

Figure 16: Hospitals within a 30-minute matatu ride[7]

Given its urban population growth and spatial expansion, Nairobi suffers from an inadequate and insufficient supply of and management and planning for public transport. Technically, the public transport function is devolved to the county level, but Nairobi City County only recently has started to engage more in public transport issues including the creation of an NMT Policy. In 2017, NaMATA was created as a metropolitan governance institution to oversee the establishment of an integrated, efficient and sustainable public transport system involving the neighboring counties in the area (Nairobi, Kiambu, Machakos, Kajiado, Murang'a). The authority's medium-term objectives are the improvement and development of existing facilities (traffic signaling, parking space, dedicated bus lanes, etc.) and, in the long-run, NaMATA will lead a large-scale bus rapid transit (BRT) project consisting of 5 main routes within the Nairobi Metropolitan Area (2017-2021). The Nairobi Metropolitan Area Transport Authority Bill which sets up the framework for the institution is still in discussion in parliament.

Currently, Nairobi is characterized by stiff competition for limited road space among motorists, pedestrians and cyclists. There is a severe lack of NMT provision and appropriate road infrastructure facilities for pedestrians (e.g. pedestrian footpaths and separate bicycle lanes). While walking is the main means of transportation in the city, pedestrians experience poor safety conditions in Nairobi's urban areas, being exposed to fast, aggressive and high motorized transport volumes. Pedestrians suffer from high traffic accident rates. Road accident data for the period 2010-2013 show that out of 700 fatalities per year, about two third were pedestrians. According to ODI, the number of people killed in crashes in Nairobi has declined in recent years (Figure 17).

[7] Source: Campbell et al. (2018)

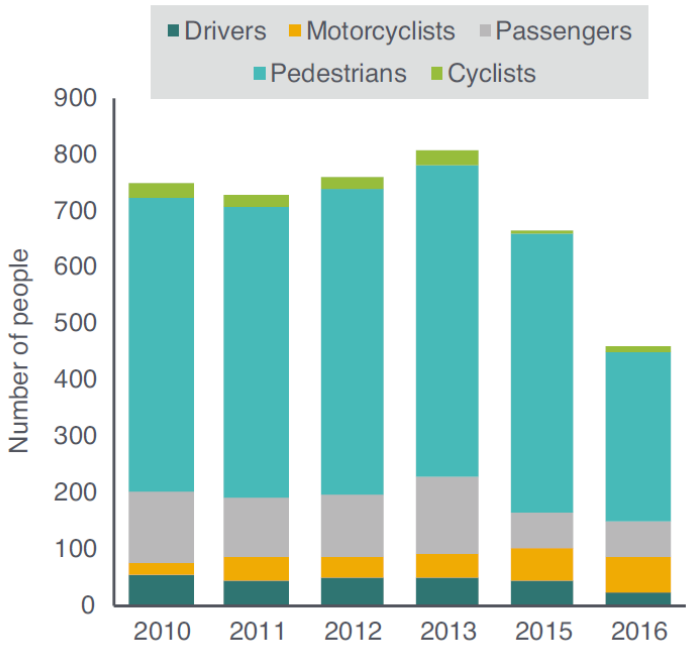


Figure 17: Traffic fatalities in Nairobi by road user (ODI, 2018)

Concerned about this issue, Nairobi City County, with support from the Kenya Alliance for Resident Associations, (KARA) enacted in 2017 the Non-Motorized Transport Policy in order to facilitate a mobility environment where the importance of NMT for the city is recognized. It provides an overview of the main NMT challenges in Nairobi and gives policy statements and an implementation plan for the improvement of NMT (Nairobi City County, 2017).

It is important to recognize the growing willingness and consciousness of Nairobi residents and civil society to improve their streets and public transport. For example, in cooperation with the Nairobi City County and the UN Habitat in the winter of 2016, the Placemaking Network Nairobi set up a Placemaking Week (Open Streets) and organized a cycle ride and community dialogue about public space initiatives, music, street food etc. An exhibition on existing worldwide BRT systems was also displayed for inspiring and sensitizing citizens of Nairobi on how the city's challenges can be overcome. The number of Nairobi cyclists is growing, and they gather for a "critical mass" ride every month. University of Nairobi is also working on a bike share program. The resident associations through KARA have also organized forums on road safety, air pollution and improving public transport. In addition, the FLONE initiative which uses education to create safe commuter spaces in the Kenyan public road transport network has been focusing more and more on critical issues of sexual harassment, rider safety and also conditions of women workers in the transport sector.

Finally, the freight has an important impact on mobility conditions as important volumes of cargo are transported from Mombasa to the Great Lakes region, through the Greater Nairobi area. Kenya serves also as an important transit country in the Northern Corridor for hinterland neighboring countries, as the port of Mombasa, is one of the main ports serving East Africa. The majority of freight in Kenya (76%) is carried by road (Kenya Roads Board, 2016), which has an impact of the overall state and performance of the road network. The ongoing construction of bypasses around the city center is expected to alleviate congestion resulting from freight traffic. Worth noting is also the use of handcarts to ferry goods over short distances in the city. Because this mode of transport generally uses the main carriageway and is considerably slower than motorized modes, it negatively impacts vehicular traffic.

1.3.2 Main issues in secondary cities

The Kenya Urbanization Review (World Bank, 2016) states that "transport mode patterns in Nairobi and other Kenyan cities do not differ drastically. Overall conclusions drawn for Nairobi are thus likely to be valid in all Kenyan urban settings, although the specifics will differ by city".

On average, the chart below shows that the same transport trends exist in Nairobi and other Kenyan cities. One can however notice that the share of walking is higher outside Nairobi than within the capital-city, so is the use of matatus (together, it comprises more than 85% of trips).

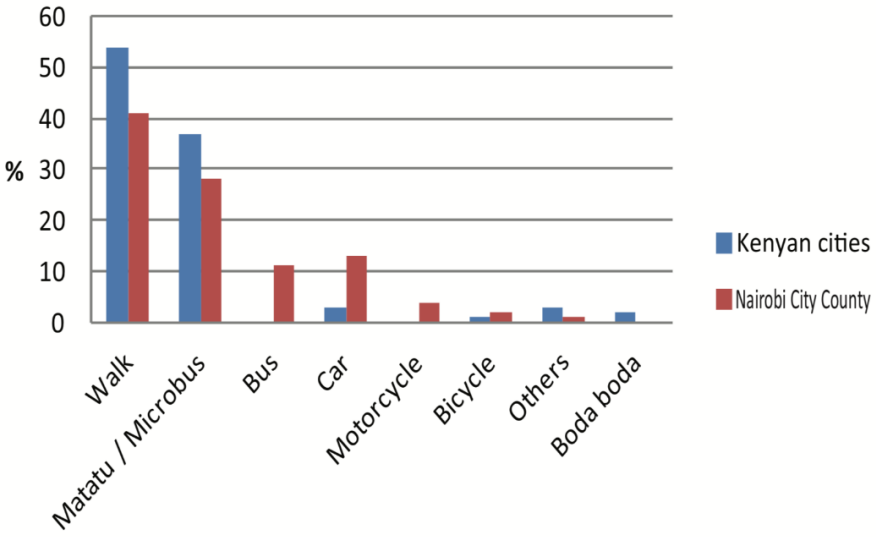


Figure 18: Transport mode share in Kenya compared with Nairobi (World Bank, 2016)

One of the specifics of Kenya 's secondary cities is that walking and, in some cases cycling including boda boda services, plays a more important role in daily commuting patterns and that car ownership is lower than in Nairobi making matatus and bus services more important as public transport modes in secondary cities.

Figure 19: Footbridge in Mombasa

Mombasa, the country's second-largest city illustrates the Kenyan urban areas issues' diversity. Due to the city's strategic position on the Indian ocean coast and its major role in the country's economy, Mombasa experiences different mobility patterns. In Mombasa, as an example of secondary cities, +40% of daily trips are made on foot. Therefore, NMT should enjoy priority in the inner city. The Mombasa County also has incorporated Three Wheelers (tuk tuk) in its regulatory system which opens the way to improved inter modal planning, regulation and inter-operability models.

Figure 20: Tuk Tuk in Mombasa

The utilization of a ferry system is necessary to connect from Mombasa Island to the southern mainland (NR-A14). Several projects are being initiated to improve the connectivity of Mombasa island to the southern mainland, such as the Mombasa Southern Bypass Road Project that will connect the city center directly with the SEZ and NR-A14 towards Tanzania without using the ferry service. This project is in the design stage and construction is planned to commence in 2018 according to KeNHA (Kenya National Highways Authority, 2018).

In the case of Mombasa approximately 300,000 public transport users travel from the mainland south of Mombasa island to the island where the main economic activities are. These commuters are dependent on a limited (four fleet) ferry system as part of their daily commute.

	Nairobi	Mombasa
DEMOGRAPHY		
Metropolitan population *(million, 2015)*	3,9	1,1
Percentage of the national population residing in the urban agglomeration *(%, 2015)*	8%	2%
Urban population growth rate *(% / year, 2015-2020)*	4,0%	3,7%
QUALITY OF LIFE		
Quality of life in African cities *(EPFL-AMB ranking, 2017)*	27/100	N/A
Urban mobility Index 2.0 - UITP *(grade 0-100, 2014)*	29,0	N/A
MOBILITY DEMAND		
Motorization rate *(vehicles / 1'000 inhabitants)*	96 (2013)	N/D
Number of trips per day *(million)*	N/D	N/D
Number of motorized trips per day *(million)*	N/D	N/D
Number of motorized trips per day per inhabitants *(million)*	N/D	N/D
Average trip distance (km)	N/D	N/D
Modal split - Personal Vehicles *(%)*	12%	N/D
Modal split - Public Transport, including paratransit *(%)*	39%	N/D
Modal split - Non Motorised Transport *(%)*	40%	45%
TRANSPORT SUPPLY		
Number of public buses	N/D	N/D
Number of paratransit vehicles (taxis excluded)	30 000	N/D
Length of existing urban rail road and/or reserved bus lanes *(km)*	None	N/D
Length of planned urban rail road and/or reserved bus lanes *(km)*	Dedicated bus lane under implementation	N/D

Table 3: Statistical data in Nairobi and Mombasa[8]

[8] UN Habitat, EPFL-AMB, UITP and World Bank data. Details of sources in the appendix

1.4 National Context

This section briefly presents the tenets of the legal and institutional framework applicable to urban mobility.

1.4.1 Legal framework

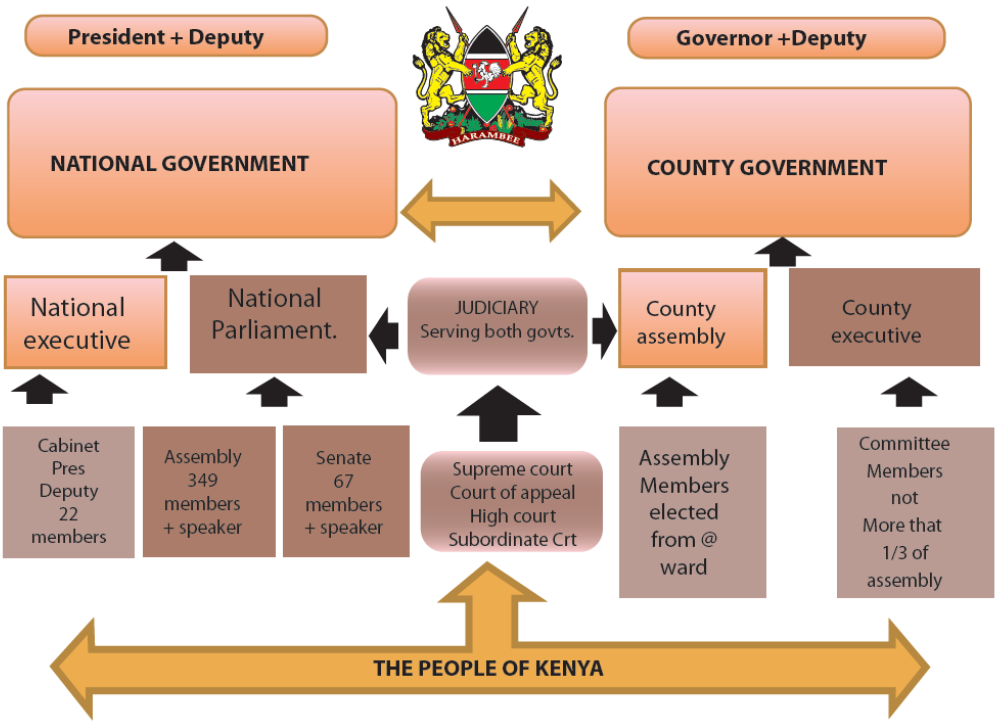


Figure 21: Kenya's government system (Transparency International Kenya, 2014)

As per the 2010 Constitution, there are two main levels of government in Kenya: the national and county (local) government systems. The Kenyan constitution gives the national government some critical planning, land-use and transport functions. Transport functions include, in particular (a) road traffic; (b) the construction and operation of national trunk roads; (c) standards for the construction and maintenance of other roads by counties; (d) railways while the counties are given jurisdiction over (a) county roads; (b) street lighting; (c) traffic and parking; (d) public road transport; and (e) ferries and harbors, excluding the regulation of international and national shipping and matters related thereto. Some jurisdictional overlap exists over transport as well as planning and land matters and this points to the strong need to coordinate across ministries and with counties for progress to be made on improving urban mobility and accessibility. Counties are meant to take on increased responsibilities as the devolution process gradually unfolds and the national government will need to take an important role in capacity building and supporting counties in their functions.

The main documents shaping the legal and policy environment for urban mobility in Kenya are as follows:

The Constitution of Kenya (2010)

Enacted in 2010, the Kenyan Constitution has deeply transformed the political and economic governance of the country by creating two autonomous but independent levels of government, namely the national level and the Counties. The primary objective of decentralization is to devolve power, resources and representation to the local level. The Constitution gives county governments the

bulk of the responsibility of urban management. In practice, some of these responsibilities overlap with the mandates of national-level institutions and have therefore not been effectively devolved.

County Government Act of 2012

This Act gives effect the chapter 11 of the Constitution (devolution) and provides for county governments' powers, functions and responsibilities. This Act gives county governments the power to control development and investment including infrastructure investment in their areas of jurisdiction through various plans such as County Integrated Plans and land use plans.

Urban Areas and Cities Act No. 33 of 2011

This Act is aimed at providing the system of governance and management of urban areas and cities, including the participation of residents in planning and decision -making processes. The Act establishes a three-tier administrative system of city, municipal board and town committees, and provides a legal framework for the county governments to establish their own systems of urban management. The Act also provides that a city shall develop a system of governance that encourages participation by residents in its affairs, and establishes appropriate mechanisms, processes and procedures for consultation with locally recognized resident organizations.

Kenya Roads Act No. 2 of 2007

This Act establishes the arrangement for the management and provision of road Infrastructure including non-motorized transport in all classes of roads throughout the various authorities. The Act establishes the Kenya National Highways Authority (KeNHA), the Kenya Urban Roads Authority (KURA), and the Kenya Rural Roads Authority, and assigns the relevant powers and functions to these authorities. A new roads bill, establishing a Public Roads Standards Board, was introduced in 2017 but is yet to be approved by Parliament.

The Traffic Act Cap. 403 (2012)

This Act sets out the laws governing road traffic. It provides the framework for the enforcement of traffic laws, including those relevant to non-motorized transport users.

National Urban Development Policy (NUDP 2015)

The National Urban Development Policy creates an important framework for sustainable urban development in the country and addresses several thematic areas such as, urban economy, urban governance and management, national and county urban planning and urban safety. Important key recommendations include:

Ensure that all urban areas and cities prepare and implement an appropriate transportation strategy with emphasis on mass transport, pedestrian and cycling modes;

Ensure safe, affordable, efficient, comfortable, reliable, inter-connected and sustainable transport systems in urban areas and cities;

Ensure that the urban transport system is properly integrated with land use planning and development;

Acquire and protect land reserves for transportation facilities;

Develop a transport system that more efficiently supports the economic development of urban areas and is interconnected with the rest of the country and neighboring countries;

Establish a comprehensive transportation management information system for all transportation modes;

Enforce (a) emission testing in all transport modes and (b) the polluter pays principle;

Set standards and guidelines for timely decommissioning of vehicles, marine vessels, aircraft and trains; and,

Harmonize the roles and mandates of all transportation agencies in the urban sector.

Integrated National Transport Policy (INTP 2009)

The Integrated National Transport Policy recognizes the importance of improving public transport and NMT and reducing pollution to address the needs of the poor as well as to promote the health of the whole population. The policy strongly recommends harmonization of NMT and concomitant infrastructure into the technical, legal and institutional mandates of transport agencies. It is unclear how this policy is being mainstreamed into projects and programs. In addition, some argue for the need to update this framework as it is now almost a decade old.

Non-Motorized Transport Policy (June 2017)

The Nairobi City County, with support from the Kenya Alliance of Residents Associations and UNEP, developed and passed a Non-Motorized Transport Policy to promote the NMT in Nairobi county. The vision of county with this policy is: "to be a County where NMT is the mode of choice for short and medium trips" (Nairobi City County, 2017) The main objectives of this policy are to increase mobility, accessibility and transport safety, to improve amenities for NMT and ensure that adequate funding and investment is set-aside for NMT infrastructure. It will also put in place laws and regulations to ensure that NMT facilities and areas are not encroached by the motorized transport modes and other street users. Currently the EU is supporting a consultant to help develop an NMT strategy and network for the city of Nairobi and prepare associated bankable NMT investment program.

Kenya Vision 2030

As part of this national and global project, the Kenya Vision 2030 contains several objectives which call for a nationwide urban planning and development campaign. The Vision aspires for the country to be firmly interconnected through a network of roads, railways, ports, airports, water ways, and telecommunications. It also aspires to setting up a strong institutional framework for infrastructure development, implementation of infrastructure projects that will target increased connectivity and reduced transport and other infrastructure costs. Finally, it targets the development and maintenance of an integrated, safe and efficient transport network.

Overall, Kenya has several excellent and mutually enforcing policy frameworks based on the fundamental principles of the Constitution of Kenya 2010. Thus, the challenge will be mainstreaming and implementing these frameworks in projects, programs and having them felt down to the street level.

1.4.2 Main Actors of urban mobility

At national level

Ministry of Transport, Infrastructure, Housing and Urban Development

The Ministry comprises different departments among which are the State Department for Transport and the State Department for Infrastructure. The State Department of Transport holds the functions of transport policy management, national road safety management, national transport safety and national roads development policy management. As for the State Department of Infrastructure, it supervises national roads development policy, and development and maintenance of roads.

National Transport and Safety Authority (NTSA)

The National Transport and Safety Authority is a governmental authority founded in 2012 that falls under the State Department for Transport. It aims at improving the accessibility of Kenya road transport system for all the population. It also has the objective to implement transport policies and handles the planning, management and regulation of the road transport system. Finally, the NTSA ensures the safety, reliability and the efficiency of the transport system. NTSA uses digital technologies to monitor and regulate the transport sector and increase the efficiency of operations. Online self-

service platforms are available to PSV operators and private vehicle owners/drivers to easily perform a number of administrative procedures. This allows the agency to constitute a digital database of active authorizations and users (both private and professional). NTSA also maintains a dataset on road accidents at national level. Detailed information on the number of accidents by category of road users involved are reported every month and stored in digital format, allowing for time-series analysis.

Kenya National Highways Authority (KeNHA)

This state corporation established under the Kenya Roads Act 2007 is responsible for the management, development, rehabilitation and maintenance of national roads throughout the country. This authority was inaugurated in 2008 and has since led several projects to rehabilitate, construct or maintain the national road network.

Kenya Urban Road Authority (KURA)

Defined in the Kenya Roads Act, 2007, the authority deals with the management, development, rehabilitation and maintenance of all public roads in the cities and urban areas in Kenya, except national roads. KURA functions have been devolved to counties but in practice KURA continues to operate with the main cities.

Kenya Roads Board (KRB)

The Kenya Roads Board (KRB) is a statutory body established by the Kenya Roads Board Act of 1999. The Board's main objective is to oversee the road network and coordinate its development, rehabilitation and maintenance. The board provides an institutional framework within which the entire road network is managed and is entrusted with the authority to efficiently use KRB funds to develop, rehabilitate and maintain the network. It is the principal adviser to the Government and the State Department of Infrastructure on all matters related thereto.

Transport Licensing Appeals Board (TLAB)

Created only two years ago in 2015, the Transport Licensing Appeals Board functions under the Judiciary and performs an appeals board role in respect of the administration of regulatory processes. It currently comprises 5 board members. The TLAB functions as an appeals tribunal and examines the claims of individual or operators relating to unjust treatment in respect of operating license applications, etc.

National Environment Management Authority (NEMA)

Established under the Environmental Management and Coordination Act No 8 of 1999, this governmental organ exercises general supervision and coordination over all matters relating to the environment and is the principal instrument of the government in the implementation of all policies relating to the environment. The Authority is a Semi-Autonomous Government Agency (SAGA) in the Ministry of Environment, Water and Natural Resources and has been in operation since 1st July 2002.

At the local level

- **Nairobi City County Government (NCC)**

Nairobi City County (NCC) enjoys a particular status among Kenyan local government bodies, as the jurisdictions of the City Council and of the County are one – it is de facto the only city-county in the country. It operates under the auspices of the Cities and Urban Areas Act 2011, the Devolved Governments Act and a host of other Acts. The Nairobi City County, charged with the responsibility of providing a variety of services to residents within its area of jurisdiction, has a Department of Roads and Infrastructure. It deals with all the matters related to transportation, road construction and maintenance. NCC is in the process of creating a department of transport, distinct from the department in charge of roads and infrastructure.

- **Nairobi Metropolitan Area Transport Authority (NaMATA)**

The Nairobi Metropolitan Area Transport Authority is a regulatory governmental transport authority created in 2017 to oversee the establishment of an integrated, efficient, effective and sustainable public transport system within the Nairobi Metropolitan Area. The authority, in charge of formulating public transport strategy, also has the role of improving transport facilities. NaMATA coordinates the Mass Rapid Transit System Project in Nairobi (2017-2021) aimed at developing and operating a 5-line Bus Rapid Transit (BRT) system as well as a commuter rail system.

- **Mombasa County Government (MCG)**

The Department of Transport and Infrastructure within the Mombasa County Government (MCG) is responsible for the construction and maintenance of county roads, the coordination and licensing of public transport vehicles as well as traffic management.

- **Savings and Credit Cooperative Organizations (SACCOS)**

First created in 1964, SACCOS are organizations that assembles Nairobian matatu owners into cooperatives. Each owner is required by law to be a member of a SACCO. These organizations have as their main objective to pool savings for its members and provide them with credit facilities. It also encourages thrift amongst members and encourages them to embark on the proper management of money and investments practices. It is estimated that there are 125 matatu SACCOS in Kenya and matatus and buses by law must register in a SACCO or be a registered business.

- **The Matatu Welfare Association**

The Matatu Welfare Association is the first of three-national collective operative structures to be created. The organization represents more of less one third of the matatu operators in Nairobi. Matatu Welfare Association has formed a partnership with the Management university of Africa and undertakes capacity building programs amongst its members.

- **Matatu Owners Association (MOA)**

The Matatu Owners Association is a Business Membership Organization registered in Kenya as a society. The association, in operation since 2003, was primarily formed to lobby and advocate on issues affecting owners of matatus with the government and stakeholders. The main functions of the association are to promote, protect and empower the matatu owners, to settle disputes with local authorities and national government, and to promote road safety campaigns.

- **Kenya Bus Service Management Ltd (KBS)**

KBSM is a transport management company established 10 years ago in Kenya to succeed the Kenya Bus Services Ltd (KBS). This private company operates public transport services within Nairobi Metropolitan Area through a bus franchising operator model.

- **The Kenyan Alliance of Resident Associations (KARA)**

The Kenyan Alliance of Resident Associations is a resident association actively promoting citizens' participation in land management and urban governance. KARA has proven itself to be an active participant in the planning and improvement of urban mobility matters.

Other institutions

- **Development finance institutions**

The major international development partners and lenders to Kenya figure among the leading multilateral and bilateral institutions worldwide. The Chinese Development Bank is now Kenya's largest lender. Kenya also recently joined the Chinese led Asian Infrastructure Investment Bank (AIIB) which may open up new financing. Based on 2014 OECD DAC CRS data, the combined agencies of the United States account for just twenty-five percent of Official Development Finance (ODF) to Kenya. The World Bank's International Development Association accounts for a further eighteen percent of

flows. Other major donors are the African Development Bank, the European Union institutions, the United Kingdom, Germany, France and Japan.

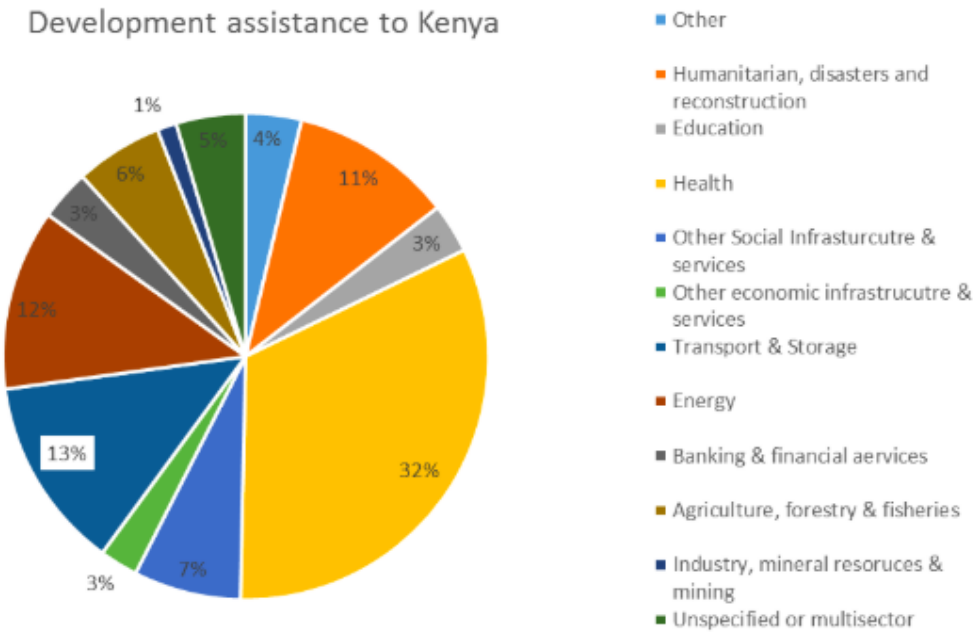


Figure 22: Development financial assistance to Kenya by sectors (OECD, 2014)

- **United Nations**

Nairobi is home to the African headquarters of the United Nations, hosting among others the duty station of the United Nations Environment Program (UNEP) and the United Nations Human Settlements Program (UN Habitat). Through the Share the Road initiative, UNEP worked with KURA on a pilot showcase road with safe walking and cycling infrastructure and helped Nairobi City County in developing and launching a Non- Motorized Transport Policy for Nairobi in 2015. UN Habitat is also active in the urban mobility sector. It supported the preparation of a sustainable urban mobility plan for Ruiru, launched a place making campaign, and financed a study on cycling in Nairobi. Finally, it is worth noting that the UN has an active partnership with the bike-sharing firm Mobike. Through this partnership, Mobike launched free-floating bicycles on the UN compound in Gigiri, a pilot that could be extended throughout the city in the future.

- **ITDP**

The Institute for Transportation and Development Policy is an international non-profit organization specialized in the design and implementation high quality transport systems (in particular, BRT) and policies. ITPD worked with KeNHA to provide direct technical assistance on the development of a BRT corridor (line no. 1), defined a service plan, and worked with NAMATA to update the BRT Design Framework. ITDP also regularly produces studies on various aspects of urban mobility, ranging from NMT integration to parking management.

- **FLONE**

Flone Initiative is a women -led organization based in Kiambu and working towards ending violence against women and girls in public spaces. It works at grassroots level to influence behavioral change and promote tolerance. Flone launched its Women in Transportation program, which aims to promote women in the transportation industry by providing them with skills and support to realize a safe, sustainable and lucrative working environment that is free from violence.

- **University of Nairobi**

The University of Nairobi is an active role player in improving urban mobility in the capital-city. For example, the University's Computing for Development Laboratory launched in 2017 the Bike Share program, with the aim of improving urban mobility in Kenya, improving health and reducing transport costs. It is also the home of the Digital Matatus project and is getting support from the TUMI Initiative to catalyze technology start-ups for the transport sector.

- **African Centre of Excellence for Studies in Public and Non-Motorized Transport (ACET)**

The African Centre of Excellence for Studies in Public and Non-Motorized Transport is a collaborative research center focusing on the development and governance of passenger transport systems in African cities. ACET aims to empower researchers in Africa to set their own research agendas and engage directly with urban transport challenges. The institution has a research center based at the Institute of Development Studies at the University of Nairobi in Kenya.

- **Centre for Urban Sustainable Development (CSUD)**

The Center for Sustainable Urban Development, launched in 2005 and based at Columbia University (New-York), is a Volvo Research and Educational Foundations center of excellence in future urban transport. CSUD has been working in the Nairobi region since 2005 and works to encourage collaborative scientific research and public engagement on the city's current land use, transport challenges and public health challenges. It is a sister center to and works closely with ACET.

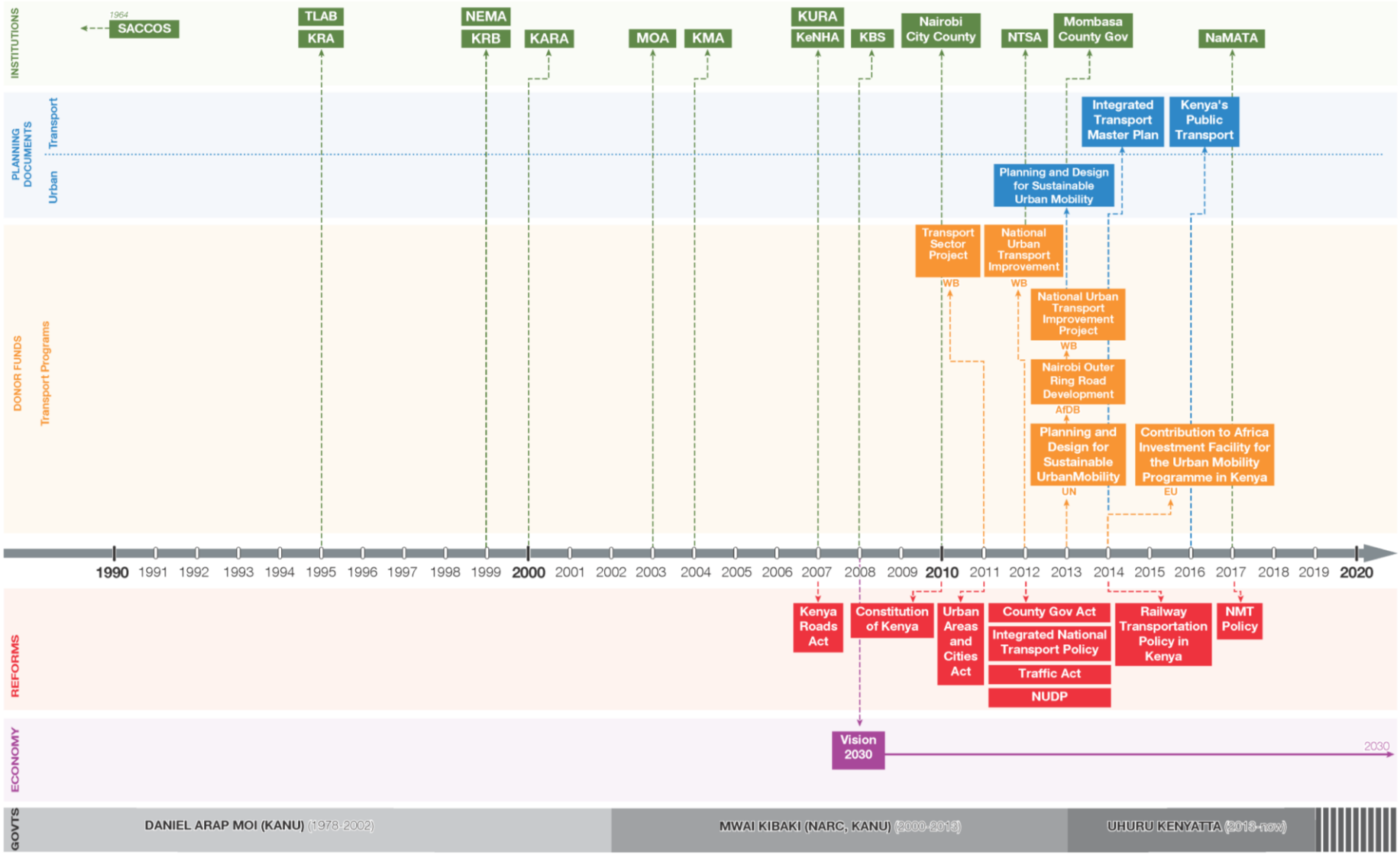


Figure 23: Timeline of urban mobility in Kenya

2. Main findings in respect of urban mobility in Kenya

2.1 Institutional framework for urban transport management

- As a result of recent institutional reforms, **there is a clear definition of roles and responsibilities** at national level as it pertains to the key urban mobility functions of planning, infrastructure implementation, and regulation. This conducive institutional environment has been gradually developed since the early 2000's through a series of reforms:
  - **Infrastructure provision is entrusted to implementing agencies with clearly delineated roles.** The 2007 Kenya Roads Act established three main authorities in charge of developing and maintaining the road network (KeNHA, KURA, and KeRRA). Existing roads are divided between classified and unclassified roads, and the responsibility for each class of road is clearly attributed to one of the three authorities. The three authorities are implementing agencies with broadly similar responsibilities over different classes of roads. Their mandate primarily consists in planning, constructing and maintaining the road network. They receive a share of the Road Maintenance Levy Fund administered by the Kenya Road Fund, as well as financing from external sources (development finance institutions, in particular). The responsibility for urban roads primarily lies with KURA, but KeNHA is also involved as highways extend into urban areas. The creation of the three authorities brought together responsibilities that were previously scattered under different ministries and levels of government. Some important overlap happens between these agencies as well as county government at the local city level and given the large impacts of larger roads especially national highways built within cities a need exists for more coordinated and participatory planning across agencies and levels of government.
  - **Regulation of road transport is handled at the national level.** The National Transport Safety Authority (NTSA) registers and licenses both vehicles and transport operators. NTSA was created by Act no. 33 of 2012 to replace the former Transport Licensing Board, in a rationalization process to bring together previously fragmented functions. Its mandate ranges from vehicle inspections and licensing to enforcement and road safety campaigns – NTSA has pledged to release statistics on road accidents on a daily basis. The licensing of PSVs is done in collaboration with county governments after assessing the balance between transportation demand and supply (although it is important to note that data on demand and supply is weak). It has put a strong emphasis on the digitization of its activities, and many of its services can now be accessed online. This is worth nothing as it reduces the burden of administrative tasks both for the customers and the staff of NTSA. In connection with the eCitizen service of the Kenyan administration, NTSA offers a web platform allowing users to perform a number of administrative procedures. For instance, it is now possible to renew a driver's license or apply for a road service license online. At the local level, enforcement is carried out by the Police department and the counties.
  - **Accountability is supported by the existence of an appeals board.** The regulatory powers of NTSA are balanced by the existence of a Transport Licensing Appeal Board, hosted by MoTIHUD but placed under the authority of the Kenyan Judiciary. The TLAB has limited but highly qualified staff and operates as a small centralized institution. It currently does not have the resources to scale up and decentralize its operations. As a result, it has only been able to handle 60 cases in two years and is limited in geographic scope. The TLAB plans to open local antennas in various counties to make the appeal process closer and more accessible to citizens. Although it still is in its infancy, the TLAB is an important instrument to promote

accountability in the licensing process and strengthen the trust of transport users and professionals in the regulatory system – and in particular, in NTSA.

- **Service delivery is managed by the private sector.** The bulk of urban transport services is provided by private bus operators as the public sector withdrew from the sector in the 1990's. Notable exceptions include the recently-launched National Youth Service Bus, which is publicly owned and operated by the eponymous institution and the Kenya Railways commuter rail service which runs four lines but is planning an expansion. Most of the matatus are run by small operators gathered in Savings and Credit Cooperatives (SACCOs) – the remaining 20% of the services being delivered by limited companies, such as Kenya Bus Service. Although matatus are only partially regulated by public authorities, the sector is rather strongly organized and self-regulated.
- One the strengths of the Kenyan institutional framework is that key responsibilities at the national level are placed under **the umbrella of a single institution** – the Ministry of Transport, Infrastructure, Housing & Urban Development (MoTIHUD). This allows for a good level of coherence across infrastructure provision, operations regulation, and the capacity to reserve land for future infrastructure development. While in many developing countries, the efficient planning and management of urban mobility is hindered by functional fragmentation between these areas, the institutional architecture in place in Kenya allows for integration across these three pillars. MoTIHUD is headed by a single Cabinet Secretary, seconded by six principal secretaries, each in charge of a different state secretary. This institutional framework is backed an extensive legal apparatus, establishing the main institutions responsible for the urban transport, and defining their mode of operation. As a result, there is a relatively clear separation between policy formulation and project implementation.

- **Institutional dynamics in Kenya are characterized by the ongoing devolution process.** The progressive passing on of new responsibilities to the counties including the public road transport function raises new challenges in the sharing of roles and responsibilities between national and local government. One of the areas that best illustrates the challenges faced within urban mobility is that of traffic management. Existing legislation stipulates that this responsibility is given to the counties, but the Roads Act of 2007 also indicates that KeNHA, KeRRA and KURA are tasked with overseeing traffic management "in collaboration with the Ministry responsible for Transport and the Police Department". The 2013 guide to the mandates and procedures of county government published by the Transition Authority explains that road traffic is the responsibility of the national government, but that county traffic and parking is the prerogative of counties. Of course, it is somewhat difficult and artificial to separate these two levels as a well-functioning transport system requires integration between different scales and modes, falling under the authority of different entities.
- **New responsibilities call for increased capacities.** The convergence of several factors makes it necessary to strengthen the capacities of key actors in the urban mobility system:
  - Several of the main agencies have only recently been established (e.g. NTSA);
  - Others are being created or will see their mandate evolve (e.g. NaMATA);
  - a new metropolitan level institution is emerging and will assume new responsibilities.

  These combined dynamics represent both an opportunity and a risk for the sector's institutional architecture. On one hand, they aim to build a modern and efficient framework for the management of urban mobility. On the other hand, they bring about deep and rapid changes that may have a disruptive effect. In order to ease into this new framework, institutions will require increased capacities (both human and financial) and a reorganization of working relations between levels of government to successfully take on their new responsibilities.

- **There is a risk of disjointedness between the main actors and levels of governance of the transport system.** The coordination of actions across national agencies and between the national and the county level could be improved to achieve seamless cooperation of all institutions. At the national level, the creation of Roads Standards Board, included in the 2017 Roads Bill, will partially address this issue by steering the work of the three main implementing agencies. At the county level, coordination between counties and national agencies will need to be improved, as the latter acquire wider scopes of intervention. The national government also needs to reorient towards engaging and supporting county capacities and setting strong guidelines and ensuring frameworks are understood and followed rather than proceeding with projects and programs as usual. Another important link that needs to be strengthened and formalized is the relationship with matatu operators. Existing channels of communication between the matatu industry and government bodies appear to be insufficient, which results in sharp tensions over public transport projects. The risk of disjointedness is reinforced by the fact that, due to limited capacities, institutions have to focus their efforts and resources on the accomplishment of their core mandate and lack sufficient time to coordinate their actions.
- One recent attempt to ensure adequate coordination between different levels and institutions has been **the creation of the Nairobi Metropolitan Area Transport Authority (NaMATA)**. Although active since February 2017, NaMATA's existence is for now based on an executive order, as the bill establishing it is yet to be approved by Parliament. NaMATA will take on the arduous task of bringing together different levels of governments, developing an integrated transport network, contracting transport services to existing or new operators, ensuring the financial equilibrium and sustainability of operations, and dealing with existing transport operators. NaMATA therefore embodies the many challenges faced by the Kenyan institutional setup as a whole in terms of capacity development, sectoral coordination, and private sector engagement. If NaMATA succeeds in tackling these challenges, it will serve as a model for the development of transport authorities in other large Kenyan cities.

The following table summarizes the distribution of responsibilities for the main modes of transport. The first two lines refer to strategic planning responsibilities, the "tactical level" refers to implementation responsibilities, while the bottom of the table presents operational functions.

Box 1 – 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. It is 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;
- 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. Examples: (1) The BRT of Lagos, inaugurated in March 2008, relies on the BRT Cooperative, a function of the powerful transport union, which acts as the BRT operator. (2) The red line of the Lagos Metro, designed to carry more than one million passengers per day through a profitable operation, relies on a concession holder to finance construction and operation. (3) The blue line of the metro relies on the State to finance the infrastructure and a concession holder to finance the rolling stock and operation.

Strengths	Weaknesses
■ Clarity of Constitutional and legislative role; ■ Commitment to devolution of powers and functions; ■ Progression towards a first Metropolitan Area Transport Authority; ■ Progressive Regulatory Authority; ■ Independent Licensing Appeals Board.	■ Inter-governmental relations model in its infancy and yet to be tested; ■ Lack of reliable data for regulations and operations. ■ Lack of Planning and management capacity at County level.
Opportunities	**Threats**
■ Establish a leading system of devolution in Africa; ■ Establish a fit for purpose and model Metropolitan Transport Authority.	■ Underestimating the complexity and governance challenges of giving effect to the Devolution Policy; ■ Being trapped in bureaucracy at the cost of action.

Table 4: SWOT matrix of issues and options linked to institutional framework and management of urban transport

<table>
<tr><th colspan="2" rowspan="3">Sector</th><th rowspan="3">Urban Planning</th><th colspan="4">Public Transport</th><th colspan="4">Public spaces</th></tr>
<tr><th rowspan="2">Planned BRT</th><th rowspan="2">Rail</th><th colspan="2">Paratransit</th><th rowspan="2">Road infrastructure and road network</th><th rowspan="2">Traffic management</th><th rowspan="2">Parking</th><th colspan="2">Non-motorized</th></tr>
<tr><th>Boda Boda & Tuk Tuk</th><th>Matatu</th><th>Walking</th><th>Cycling</th></tr>
<tr><td rowspan="2">Strategical level
What strategies?
With which ressources?</td><td>Policy and planning</td><td>Ministry of Lands and Physical Planning</td><td>NaMATA</td><td>KRC</td><td>NTSA</td><td rowspan="2">SACCOs</td><td colspan="2">MoTIHUD</td><td rowspan="5">Counties</td><td colspan="2" rowspan="2">Counties</td></tr>
<tr><td>Funding</td><td>Consolidated Fund</td><td colspan="2">Consolidated Fund + DPs</td><td>Self-financing</td><td colspan="2">Consolidated Fund, Roads Fund (maintenance)</td></tr>
<tr><td rowspan="4">Tactical level
What services ought to be developed?
How to go about it?</td><td>Regulation</td><td rowspan="2">Counties</td><td rowspan="2">NaMATA</td><td rowspan="4">KRC</td><td>Counties</td><td rowspan="2">NTSA</td><td colspan="2">Traffic Police</td><td rowspan="3"></td></tr>
<tr><td>Licensing, permits and contracting</td><td>NTSA (drivers) / Counties</td><td colspan="2"></td></tr>
<tr><td>Fare system</td><td></td><td>Private operators?</td><td>Self-regulation</td><td>SACCOs</td><td colspan="2"></td></tr>
<tr><td>Infrastructure, Equipement</td><td>Counties + national agencies</td><td>KURA</td><td colspan="2">Counties, KURA / KeNHA</td><td>KeNHA & KURA</td><td>KURA</td><td colspan="2" rowspan="2">Counties</td></tr>
<tr><td>Operational level
How to produce services efficiently?</td><td>Operations / Maintenance</td><td>Counties</td><td>Private operators?</td><td>?</td><td colspan="2">Private operators</td><td>KeNHA KURA + Counties</td><td>KeNHA KURA + Counties</td></tr>
</table>

Problematic	*Responsabilities not allocated, unexercised or conflicts between actors annihilating the action*
Insufficient	*Responsabilities not sufficiently defined and latent conflicts between stakeholders*
Non applicable	

Table 5: Governance matrix

2.2 Funding for urban transport management

- **The two main sources of funding at the national level are the Consolidated Fund and the Road Maintenance Fund.** The majority of monies collected at the national level are centralized into the Consolidated Fund. Part of these resources are appropriated yearly for the use of the three road agencies through an act of Parliament. KeRRA and KURA are also entitled to receive at least 30% of the Local Authorities Transfer Fund. The main source of dedicated funding for transport is the road maintenance fund (RMF). The RMF was created by an Act of Parliament in 1993 (Road Maintenance Levy Fund Act no. 9) and is replenished from revenue generated by the road maintenance levy. This levy is collected on fuel, and currently represents 18 shillings per liter of petroleum sold. The RMF is administered by the Kenya Roads Board, which shares its proceeds between five main entities, as presented in the following chart.

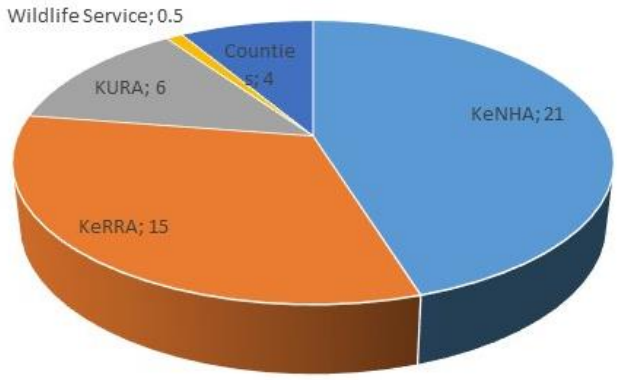


Figure 24: Disbursement from the Roads Funds for the FY 2016/2017 (in billion KES)

- **Total disbursements for the fiscal year 2016/2017 amounted to approximately 465 million USD,** mainly used for the maintenance of existing roads. Although sizeable, this amount is insufficient to fully cover the maintenance and investment needs of Kenya's vast road network. The main beneficiaries of the RMF are the three authorities placed under MoTIHUD, with KeNHA and KeRRA receiving over 75% of yearly disbursements. This distribution gives priority to large trunk and interurban roads, as well as on the extensive secondary roads network. The amount available to KURA for urban roads is fairly limited in comparison (approximately 60 million USD). Although a large share of the country's GDP is produced in urban areas, these areas only receive a limited share of the Roads Fund's proceeds through KURA. This is partly because some road maintenance projects taking place in urban areas are managed by KeNHA, and because a limited portion of the funds are channeled through the counties.
- **Cities are left with a deficit of investment and maintenance,** translating into an infrastructure backlog. This deficit is partly compensated by the mobilization of external sources of funding, in particular from international development finance institutions (DFIs). The World Bank, for instance, financed a 155 million USD Urban Transport Infrastructure Project in 1996, followed by a 300 million USD National Urban Transport Improvement Project, approved in 2012 and still ongoing - both of these projects have large road components. The African Development Bank, Japanese International Cooperation Agency, European Union and the China Export-Import Bank Chinese Development Bank all have financed various aspects of transportation infrastructure in and between Kenyan cities. A large number of DFIs are active in Kenya's transport and infrastructure sector, and their contribution represents a large share of total investments made in the sector.

- **Counties have the capacity to generate funds but are still largely dependent on national transfers.** Nairobi City county manages to cover 55% of its expenditures with internally generated funds (IGF), but the majority of counties have to rely predominantly on the Local Authorities Transfer Fund. In Nairobi, rates on properties represent over a quarter of resources collected locally. Also, worth noting is the fact that parking fees generate the same amount of revenue for the county than the issuance of business permits (close to 20% of the county's IGF each). These parking fees are imposed on PSV operators for the use of transport terminals owned by the county.
- **Taxation of transport operators is disconnected from their performance.** The Kenya Revenue Authority collects advance tax from PSV operators, who pay different rates depending on the capacity of their respective vehicles. According to the advance tax rule, PSVs pay a lump sum ranging from 290 USD (for a 41-seater) to 100 USD (for a 14-seater). This arrangement makes it difficult for the government to efficiently tax revenues generated from the public transport sector, as the law ties payments made to the capacity of the vehicle and not to the benefits that it generates.
- **The rolling stock is almost exclusively financed by the private sector.** The majority of matatus are owned individually and run without any public subsidies or support but this comes at the cost of poor service, safety and problematic labor conditions (ITF 2018). Savings and Credit Cooperative Organizations (SACCOs) play an important role in providing access to financing for operators by mutualizing funds and sharing risks collectively. According to the Matatu Owners Association (MOA) there are over 80,000 PSVs active in Kenya. These vehicles alone therefore constitute a colossal investment made by private operators.
- **The funding mechanisms of NaMATA are yet to be specified.** The 2017 NaMATA bill creates a Nairobi Metropolitan Area Fund vested in NaMATA and replenished from three main sources:
  - The national budget (monies allocated by Parliament);
  - County budgets (Metropolitan Area County Exchequers);
  - IGFs (primarily derived from user charges).

NaMATA will have the power to levy user charges on operators in exchange for access to the BRT infrastructure that it will manage, but it is not clear what portion of its expenditures can be recovered from these charges. International experience has shown that tying the financing of the authority to the performance of its operations can have negative effects. First, in case of delays in implementation or lack of interest from private operators, the authority may find itself lacking sufficient resources to cover its operating costs. Second, because the scope of activities undertaken by the authority should not be dependent on the volume of licenses issued. It is therefore crucial to define the principles of contributions by national and local authorities to the Nairobi Metropolitan Area Fund (distribution between national and county levels, and between counties themselves). As with most transport authorities in the world, NaMATA will need steady revenue streams from government to function.

Strengths	Weaknesses
■ Existence of a fuel levy and a Road Maintenance Fund;	■ Lack of a predictable grant application model;
■ Capacity of Counties to generate internal funds (parking fees, rates, etc.);	■ Reliance on external funding for infrastructure investment;
■ Current allocation system between key National Authorities.	■ Current distribution of funding favors National Authorities over Cities and Counties.

Opportunities	Threats
▪ Explore alternative funding sources (i.e. green funding tied to emissions reductions); ▪ Centralize and redistribute funding at Metropolitan Area scale (establishment of NaMATA); ▪ Optimizing local revenue collection.	▪ Not providing for the cost of Public Transport operations; ▪ Devolution of functions not followed by devolution of funds

Table 6: SWOT matrix of issues and options linked to dedicated funding sources of urban transport

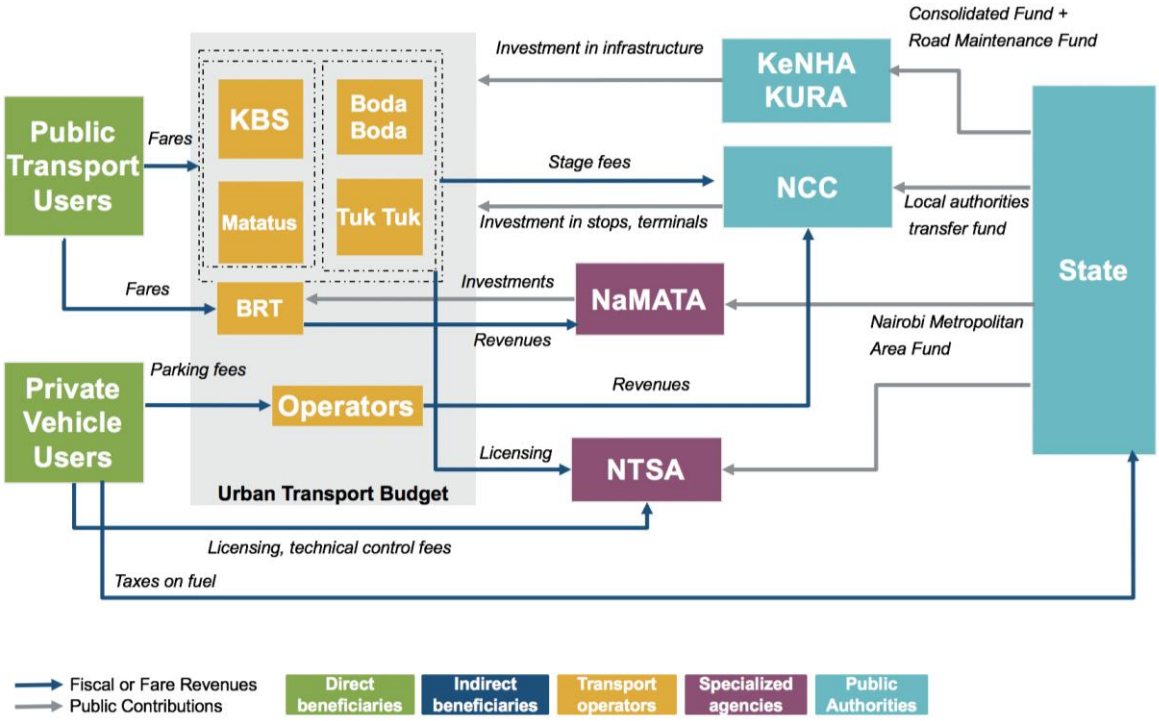


Figure 25: Financial Flows in Nairobi

2.3 Civil society participation in urban transport management

- **Kenya possesses strong and evolved systems of civil society participation** in the planning, implementation, and monitoring of urban mobility matters. There are well-developed government, university and community-based research programs focused on urban mobility matters. In addition, the high level of organization of public transport service providers means that operators have well established channels to make their voice heard both at national and county-level governments.
- **Matatu operators are well-organized and can count on structured organizations.** Their main organizations are the Matatu Welfare Association (MWA), the Matatu Owners Association (MOA) and Kenya Bus Services (KBS). Beyond representing the interests and rights of their members, these associations play an active role in the promotion of general interest goals. The MWA, for instance, has launched a campaign called Road Safety Solutions of Kenya (ROSSOK), to advance road safety within the industry and create capacity in this field among operators. To do this, MWA has joined forces with an academic partner (the Management University of Africa), which delivers training for the program. Another example of matatus establishing their presence and relevance

beyond their role as private service providers is the Matwana Matatu Culture organization. This organization promotes the culture of the matatu industry, in particular from an artistic point of view, highlighting the creativity of matatu designers. In 2017, it produced a documentary casting a fresh and positive light on the sector, as perceived by those employed by it. During the last presidential election, Matwana also organized the Matatus for Peace Campaign, advocating for an electoral process without violence. Overall, the matatu sector consistently positioned itself as a voice to be heard in the civil society dialogue about public transport.

- **The evolution and strength of the Kenya Alliance of Residents Associations** over the past 18 years in all counties, with amongst others, a dedicated focus on urban mobility matters such as safe pedestrian crossings, and the expansion of NMT infrastructure represents an asset for the improvement of the urban mobility sub-sector. KARA is the apex body representing the voice and pro-active action of resident associations on consumers and taxpayers' rights countrywide. Over the years, KARA has worked with and received support from an impressive number of international organizations and programs, such as UNDP or USAID. KARA has been pushing for road safety and the integration of NMTs in the planning process, demanding better pedestrian infrastructure and dedicated bicycle lanes, for instance. The wide network of associations brought together by KARA makes it a powerful voice on both national and local issues pertaining to urban mobility and access and a potential ally to drive reforms.
- **Academia has a long-standing involvement in the urban transport sector.** Kenyan universities contribute to the production of knowledge on urban mobility, which in turn informs public debates and policies. Of particular interest is research on the matatu sector, which remains insufficiently documented and understood by governmental institutions in charge of regulating it. Researchers from the University of Nairobi, for instance, have contributed to the seminal book *Paratransit in African Cities*, bringing together research from different African countries on this mode of transportation. They have also formed the Kenya Transport Research Network, which convenes local scholars across disciplines to share and promote research on the sector. Another well-publicized initiative on this subject is the Digital Matatus project, which mapped Nairobi's matatu and rail routes using digital technologies through a partnership between Kenyan and American academic institutions. It is continuing to update this data set and the data is publicly available and also on Google maps to help provide passenger information for matatus, a first in Africa. The Kenyan academic voice thus carries beyond national borders and provides references for other African countries.
- Kenya also has a **strong tech sector increasingly helping to provide assistance to the transport sector.** Several tech start-ups are providing mobile or web-based solutions seeking to improve mobility. One example of this is Ma3Route, which builds on data made available through the Digital Matatus partnership to crowd-source transport data and provide users with information on traffic, matatu directions and driving reports. BuuPass also provides mobile payments for fares especially for inter-city routes. The C4D Lab at the University of Nairobi is an important incubator of these companies that can also provide technical assistance to government when needed on some data matters.

Strengths	Weaknesses
■ Strong and evolved systems of civil society participation; ■ Well-organized matatu / SACCO systems; ■ Active role of academia and research institutions in urban mobility matters.	■ Lack of capacity and recognition ■ Disconnect with Ministry

Opportunities	Threats
▪ Institutionalization of participation processes.	▪ Co-option of civil society bodies.

Table 7: SWOT matrix of issues and options linked to civil participation in urban transport

2.4 Multi-modal planning and operations for city centers

- **With the exception of commuter rail in Nairobi, the transport system in Kenyan cities favors low-capacity motorized modes.** For lack of better options, city dwellers have to rely on transportation modes that are inefficient in a dense urban environment but nevertheless provide a wide range of access:
  - **Medium to micro-size buses (matatus) are the main mode of public transport.** They provide transport services in quantity, with varying levels and quality of service. Despite being the main mode of transport to work, matatus do not benefit from any priority measures over other road users and often have to load passengers from the roadside.
  - **Motorcycle taxis (boda bodas) form an important part of the urban mobility system.** They are subject to specific NTSA regulations (obligation to wear a helmet, prohibition to operate in certain areas) but these rules are not consistently enforced. Boda bodas are often seen driving on sidewalks or cycle lanes to avoid congestion, which constitutes a hazard for cyclists and pedestrians.
  - **Three-wheelers (tuk tuks) offer passenger transport services in Mombasa.** This mode is more regulated than boda bodas and is included in the Mombasa County regulatory system. According to their welfare association, there are about 6,000 tuk tuks in Mombasa.
  - **The use of private cars is progressing rapidly.** As motorization rates increase with economic growth, a growing number of urbanites own private automobiles.

  While constituting a flexible system, this combination of modes is inadequate to serve the mobility needs of large urban areas like Nairobi and Mombasa, where commuter volumes call for higher-capacity modes.

Box 2 – Mototaxis in Rwanda

Mototaxis, or two-wheeler motorcycle taxis, form a key part of mobility systems in both cities and rural areas in Rwanda. In cities, particularly in the capital and largest city, Kigali, two-wheelers offer a way to circumvent heavy general traffic congestion, while in rural parts they are often better suited to lower passenger demand and unpaved and winding or steep roads. However, unlike most counterparts in other countries in the region that have also seen the rapid rise of this mode of transport, in Rwanda mototaxis are relatively well regulated. This constitutes a major achievement and provides a unique opportunity to define and build the role of moto taxis in a multimodal urban mobility system.

In terms of numbers, estimates provided by the AfDB and the Rwanda National Police suggest that the overall motorcycle fleet in the country has increased from around 7,000 in 2004 to around 100,000 in 2017, only 13 years later – and that the large majority of these serve as taxis. It is estimated that in Kigali there are between 10,000 and 15,000 mototaxis, and that they make around 200,000 trips every day (Le Monde 2016).

Though there are still some unregistered operators, mototaxi operators particularly in Kigali are under obligation to hold operating licenses, but can only qualify for one if they own a fleet of more than 100 mototaxis or belong to a cooperative with more than 100 mototaxis registered to it. Once this condition is met the whole fleet receives a license to operate in a particular area. The carriage

of only one passenger at a time is strictly observed, while both passenger and driver wear helmets while on the move. Further regulatory steps that government authorities are planning for the mototaxi sector are, firstly, roadworthy inspections to match the current bi-annual and annual inspections that commercial and private vehicles, respectively, are already subject to, and, secondly, emissions standards that are appropriate to local conditions. The benefits to passenger safety and general air quality are clearly evident.

Since 2015 mototaxi passengers and operators in Kigali have been making use of the locally developed SafeMotos smartphone-based e-hailing system (www.safemotos.com). Fare payment is cashless, which aligns with the Rwandan government's efforts towards a cashless society. The platform estimates a current market penetration of ±10% of passenger trips in the city. Increased uptake of this form of technology provides the opportunity both to enhance passenger access to the service particularly for last-mile connectivity, while providing detailed data for authorities' multimodal transport planning processes. Instead of anticipating an unchecked growth in moto taxi numbers the Rwandan authorities, based on strong regulation of the moto taxi mode, is in a good position to define appropriate roles for this mode in a truly multimodal urban mobility system.

Image 1 – Moto taxis stop in Kigali

- **Nairobi and Mombasa are both planning for the introduction of Mass Rapid Transit systems.** In Nairobi, five BRT corridors are being developed with the support of several DFIs. As initial planning for these corridors was carried out by different engineering firms through several projects, a harmonization study was conducted in 2014 to bring together all previous studies and plans and to develop an integrated public transportation network. The BRT corridors will be rolled out progressively with financing from the WB, AfDB, AFD, the EU, EIB, KfW, GIZ, and the authorities have already geared up for implementation by delineating BRT lanes on Thika Highway in Nairobi. A monorail system is also envisaged for Nairobi with potential financing from JICA in the wake of the NIUPLAN. Both systems will be aimed at dealing with the large number of public transport users who, on a daily basis, commute between their places of residence on the urban fringe to the urban core and back.
- **Expansion of commuter rail capacity and stations in Nairobi and Mombasa are ongoing.** Led by Kenya Railways Company and with support from the World Bank, these efforts include rehabilitation of the existing railway lines, introduction of new rolling stock, upgrade of stations, and the introduction of new or improved services. It is therefore expected that rail could play a much more important part in the modal split of Kenya's two largest cities in coming years. The development of commuter rail should therefore be considered as a structuring component in their transport network and factored in when planning the introduction of other mass rapid transit modes (e.g. BRT). In addition, rail stations constitute critical anchor points for the organization of multimodal urban mobility and can be developed into intermodal hubs (bridging rail and road transport). Rail services connecting the airport to the city center, though addressing a different

segment of the population, will also play a key role towards the integration of air travel with the land transport network.

- **Current mass rapid transit projects tend to put infrastructure in the front seat.** The focus of ongoing BRT or LRT projects has been on dedicated infrastructure design and technical specifications of the rolling stock. However, infrastructure is only one of the many components needed to run a good transport system. It could even be argued that adequate infrastructure is relatively easy to achieve in comparison to the contracting of services, definition of performance standards, development of legislative instruments, integration of existing transport operators, etc. There is therefore a need balance the engineering approach with economic and social, and organizational considerations.
- **Non-motorized modes are difficult or dangerous to use.** Non-Motorized Transport (NMT) represents a large share of urban trips, predominantly in the form of walking: up to 30% of daily trips in Nairobi and 40% in Mombasa are made by walking. Existing NMT infrastructure is generally in need of repair and maintenance, and walkability is generally impaired by discontinuous sidewalks. Both Nairobi and Mombasa have conducted studies to improve their NMT infrastructure, and Nairobi City County enacted a non-motorized transport policy in 2017. Nevertheless, varying degrees of NMT infrastructure exists in both cities and various stakeholders consulted in this study reported a concern with the high level of pedestrian and cyclists' fatalities as a result of the lack of dedicated infrastructure. Facilities for the safe crossing of highways and arterial urban roads are often lacking, resulting in dangerous jaywalking behaviors and putting pedestrian at risk and speeds on densely populated roads is also an important factor (ODI, 2018). To remedy this, footbridges have been built at several "black spots", which promotes a model based on grade-segregation. While some situations undoubtedly call for this solution, putting the burden of the effort on pedestrians (climbing up and down stairs as high as 9 meters) can also be perceived as a disincentive to walk. As far as cycling is concerned, there seems to be a spatial mismatch between the location of bike lanes and the corridors where demand is the highest. As cycling is mostly used by poorer residents, infrastructure located in affluent neighborhoods is underutilized.
- **Multimodal mobility is inadequately taken into account from a planning and operations point of view.** The existing transport system does not fully make a place for all modes of transport and future plans have a tendency to consider the development of each mode side by side rather than in an integrated manner. This is exemplified by Nairobi's Integrated Urban Development Master Plan. Not only is integration between road, rail, and air transport lacking, but the importance of matatus in the transport system is not acknowledged. Lack of policy implementation continues to frustrate provision of a balanced transport system including, matatus and NMTs, despite the existence of an Integrated National Transport Policy (INTP) released in 2012. The INTP recognizes that over the years, transport development has focused attention mainly on roads for motorized transport because the role of NMT was not fully recognized by transport professionals, and therefore did not receive sufficient financial support.
- **Drastic improvements in traffic management are required to meaningfully improve operating conditions for all modes.** Poor traffic management inhibits the smooth functioning of the urban mobility system and has negative effects for all modes. Inadequate types of intersections (e.g. roundabouts at critical transport nodes) results in massive lines during peak hours. The police department is regularly called upon to ease these choke points by manually directing traffic, which tends to improve flows in one direction while adding congestion in other areas. The accumulation of private cars, combined with the absence of dedicated lanes, limits the efficiency of public transport by bus or minibus. To escape traffic jams, commuters turn to boda bodas who take over the sidewalks, thus further deteriorating walking conditions. Weaknesses in traffic management thus negatively affect all modes. KURA has plans for an ambitious intelligent transport system in Nairobi to address this issue.

Strengths	Weaknesses
■ Well-established paratransit supply system; ■ Planning for the introduction of Mass Rapid Transit systems.	■ Data, planning and implementation of multi-modal systems is lacking; ■ Traffic management systems are at best rudimentary and outdated; ■ Access to Public Transport is problematic in many parts of the city; ■ The absence of a well-developed NMT network.
Opportunities	**Threats**
■ Increase the capacity and efficiency of the Public Transport system to draw latent demand onto the system (NMT users); ■ Establish a truly multi-modal Public Transport system (incorporating modes such as boda boda).	■ Exclusionary and divisive Mass Transit Model; ■ Lack of prioritization (or absence of focus on decisive items)

Table 8: SWOT matrix of issues and options linked to multi-modal and operations in urban transport

2.5 Public transport performance and paratransit reform

- **Urban mobility is heavily dependent on the matatu sector**. Matatu operators are regrouped into SACCOs, which have on average 50 members. Most SACCO members are individual owners. NTSA regulations apply to the matatu sector (in terms of vehicle registration, inspection, and licensing), but current standards are relatively easy to meet. For instance, the only condition for being licensed as a matatu driver is to have had driver's license for four years and no training is provided by the government. No specific qualifications in passenger transport, road safety, or customer relation is required of the applicant, although some companies and SACCOS strive to improve these. Little support is given to matatu drivers who work under difficult, precarious conditions and poor wages without contracts and complain of police harassment and extraction of bribes (ITF, 2018). The matatu industry is an important source of employment for youth, and therefore represents an important source of livelihoods including conductors, Kamagera, (callers), vehicle washers, squad drivers, food and drink vendors, painters and artists, mechanics, stage clerks, SACCOs, “set guys”, stage “owners, and others (ITF, 2018). In addition, the sector is sometimes depicted as having some routes run by cartels prone to violence to defend their economic interests. There are also conflicts of interests between government officials who are supposed to enforce regulation and yet own matatus. Overall, engaging with this sector will be critical but is clearly complex and multi-layered, requiring refined and sophisticated approaches that also address problems in the sector.
- **The matatu system is characterized by numerous negative externalities.** Matatu users tend to have a negative opinion of this mode of transport based on:
    - Safety concerns, as matatus are regularly blamed for reckless driving;
    - Security problems, with thefts being common onboard vehicles and at stations;
    - Unavailability of vehicles or long waiting times at stations, particularly during peak hours;
    - Fare variations, especially on rainy days where sudden fare increases are reported;
    - Low levels of comfort, though some vehicles provide modern connectivity options.

Despite this negative image, 70% of the residents of Nairobi are reported to use matatus a least once a month, which would indicate that the majority of users are in fact captive customers. Interviews with passengers also suggests that the major requirements of bus/matatu passengers were 1) Improvement of bus stop facility/Information, 2) Improvement of accessibility, and 3) Improvement of regularity/punctuality (NIUDP, 2014). Some of the problems with the sector is not just in its operations but also in the infrastructure including bus stops and terminals and lack of information provided for passengers.

- **Misplaced economic incentives result in poor level of service.** Most of the undesirable characteristics exhibited by the sector result from the economic incentives to which drivers are subjected. Matatu owners rent their vehicle to a driver against a fixed fee. This fee ranges from 80 to 120 USD (for larger fully equipped vehicles). In addition to the daily fee, the driver has to buy fuel, pay the conductor, and cover miscellaneous expenses. His or her profit is made of the difference between these costs and the total revenue that s/he manages to collect within a day (ITF, 2018). The main objective of a crew is therefore to maximize passenger throughput in order to boost its revenues. Customer satisfaction and quality of service are therefore low on the agenda, as operators are almost assured of filling their vehicles (since transport options are limited for commuters). However, in most well-functioning public transport systems, government infrastructure and subsidies are required to improve the service. In South Africa, where this is a subject of debate, for example, cities are experimenting with dedicated lanes like the N2 Expressway in Cape Town, upgraded minibus stations, and service contracts for improved service (South African National Treasury and World Bank forthcoming). Similarly, in Kenya, the private sector has supported some matatu shelter improvements.
- **The underlying financial model makes it difficult for operators to improve their services.** The target system results from short vehicle-amortization periods. Loans are frequently made over periods as short as 1.5 year, which puts a lot of pressure on the owner to quickly generate significant revenues to relay loans. On the other hand, this also means that owners make sizeable profits during several years after the amortization period, since the daily target imposed on the driver does not change and the life span of the vehicle extends over several years. Rough driving which is incentivized by this system, however, reduces the lifespan and roadworthiness of vehicles. The matatu business model therefore perpetuates sub-optimal public transport performance as daily cash targets rather than profitability through efficiency improvements and operational optimization appears to hold sway (it has been suggested that the current route licensing model may also contribute to congestion challenges). In this way, seeking to improve the driving behavior or road safety of matatus without changing the underlying financial model amounts to treating symptoms without addressing their causes.
- **Public interventions have oscillated between laissez-faire and attempts to regulate the sector.** After the collapse of national operators, national and local authorities have had no choice but to accept the development of the matatu system to absorb a growing transportation demand. The sector subsequently by and large evolved by itself. In the early 2010's, a set of rules known as the Michuki rules were imposed on the sector by the minister Michuki to enhance the safety of PSVs. Attempts to develop regulation were pursued by subsequent administrations, with varying levels of success. Recent attempts to impose speed governors or a cashless payment system, for instance, were met with resistance from a wide array of stakeholders and never implemented. Overall, the current situation appears to be closer to the pre-Michuki rules period, as some of its benefits have eroded. However, NTSA has recently initiated new regulation and enforcement efforts, which results are yet to be evaluated. At county level, Nairobi has made several attempts at banning matatus from the city center, with the aim to decongest the streets. Even so, these bans are difficult to enforce in the absence of practical alternatives. It is important to note that besides regulation and primarily “sticks” there have been few efforts if any to improve “carrots”

or incentives for better performance and few efforts to upgrade the infrastructure, routing, right of way and other critical enabling conditions for better performance.

- **Operators complain about discretionary enforcement practices.** Fast-changing or unrealistic regulation has bred inconsistent and opaque enforcement. This, in turn, results in abuses, and a general climate of mistrust between authorities and operators. Matatus are not allowed to pick up or drop passengers outside of designated areas, but official bus stops are scarce, which makes it almost impossible for matatus to operate lawfully. Operators feel that their needs (and those of the travelling public) are not taken into account by the agencies in charge of the road infrastructure, resulting in impossible operating conditions for them. As a result, drivers are frequently faced with fines, and sometimes prison sentences. This creates an unstable business environment and encourages the quest for immediate profit in order to compensate risks.
- **At management level, operators appear ready to welcome reforms.** The ownership structures of the matatu system at collective (SACCOs and SACCOs Federation) level appear to be ready to embrace change in the sector and to professionalize operations. It is however not clear if these sentiments are supported by the majority of operators/individual owners. MWA, for instance, has proposed to move towards a concession and franchise system for route licenses in Nairobi, by dividing the city into ten zones. It also promoted the adoption of a cashless fare system, in order to avoid corruption and maximize revenue collection. However, these changes may not bring added value from the user's perspective and could go against the immediate interests of matatu crews unless some of the improvements can lead to higher wages (Kelley et al, 2017).
- **Forthcoming BRT projects could represent an opportunity for matatu professionalization.** The engagement with the current public transport service providers (matatus) in Nairobi and Mombasa regarding the planned implementation of Mass Rapid Transit Systems is intended but yet to commence. Matatu operators have expressed their desire to operate the future BRT services, but would require substantial scaling up of their capacities to do so. There is also a fear that they will be excluded from the main BRT corridors and relegated to provide feeders' services. Matatu drivers while largely uninformed of the BRT plans, when asked also raised concerns (ITF, 2018). This would most likely not be an acceptable solution for the matatu industry and could trigger considerable backlash against the BRT project. The recent launch of the publicly operated NYS buses has also raised suspicion that BRT operations could be left with the public sector. The engagement of paratransit operators and their participation in future mass rapid transit systems will therefore be a critical success factor. It also constitutes an opportunity to professionalize existing operators through training and capacity-building to take part in the new system.
- **Up-to-date and consolidated data on the transport system is needed to inform decision-making.** Although innovative approaches to data collection have been pioneered in Kenya (e.g. initiatives led NTSA, the Digital Matatus partnership), there is no centralized database to store it. The While the Kenya Open Data portal makes public datasets accessible for free to the public in reusable formats, it focuses on spatial data and does not contain urban mobility data at the moment. The existence of a centralized transport data repository would allow the various institutions interested in this data for planning or monitoring purposes to readily access it. Plans and procedures to regularly enrich this database would also need to be developed in order to keep it up to date.

Data	Scope/area	Mode and year of acquisition	Owner/custodian of data	Availability and format of data	Regular updates	Comment
Land use						
Spatial distribution of population and jobs	Nairobi	2010	Columbia University Center for Sustainable Urban Development	GIS data released under an open license	No	-
Travel demand						
Modal split	National and Nairobi	2014	World Bank	Aggregate data, Kenya Urbanization Review	Yes	Raw data and systematic breakdown by county not provided
Origin-Destination data	Nairobi	2014	JICA/Consultants	Data not released, report available online	No	Collected during the preparation of the Nairobi Master Plan
Traffic						
Traffic counts	Nairobi	2015 Surveys/traffic counts	ITDP	Not released publicly	No	Scope limited to main corridors
Parking						
Occupation and rotation data	Nairobi CBD	2016 Occupancy and rotation survey	ITDP	Report available, raw data not released	No	-
Public transport						
Route itineraries and stops	Nairobi	2017 Surveys of matatu routes	DigitalMatatus	Open GIS data released online	Third update currently ongoing	Data collected with smartphones, in partnership with UoN
Level of service	Nairobi	2017 Surveys of matatu routes	DigitalMatatus	Open GTFS dataset released online	Third update currently ongoing	Data collected with smartphones, in partnership with UoN
Users satisfaction data	n/a	n/a	n/a	n/a	n/a	n/a
NMTs						
Pedestrian/bicycle counts	Nairobi	2014 Bicycle survey	Green Africa Foundation & UN Habitat	Report available online but not raw data	n/a	-
Users satisfaction data	n/a	n/a	n/a	n/a	n/a	n/a
Models						
Traffic model	n/a	n/a	n/a	n/a	n/a	n/a
Transport model	n/a	n/a	n/a	n/a	n/a	n/a
Externalities						
Road Safety	National	2018 Regular reporting	NTSA	Statistics available online	Yes, very regularly	Statistics on road crashes are reported on NTSA's website
Air Quality	Nairobi	2016 Inernational report	WHO	Statistics available online	Yes	The sensor.Africa initiative also collects some data using sensors assembled locally
Gender issues	Nairobi	2017 Survey	FLONE Initiative	Report available online	n/a	Report available: Violence against Women and Girls in Public Road Transport and Connected Spaces in Nairobi County, Kenya

Table 9: Overview of available urban mobility data in Kenya

Strengths

- Well-established matatu / paratransit supply model (with no direct costs to government).

Weaknesses

- Lack of HOVs in the Public Transport supply model and of a Mass Transit model;
- Negative externalities of the paratransit supply model;
- Lack of incentive for recapitalization.

Opportunities

- Convert matatu business model into a modern enterprise;
- Enhance eligibility for contracting.

Threats

- Limitation of the current matatu business model;
- Destructive competition rather than collaboration.

Table 10: SWOT matrix of issues and options linked to public transport performance

2.6 National government support for urban transport management in "secondary" cities

- **The relationship between the national and local levels is shaped by the dynamics of devolution.** The devolution process is relatively recent, as it was initiated by the 2010 Constitution that divided the national territory in counties and established two distinct level of government. Yet, the actual creation of counties was not done before 2013, and county governments have been progressively gathering momentum since. In terms of responsibilities, the fourth schedule of the Constitution states that the national government is responsible for road traffic and the construction and operation of national trunk roads, while county governments are in charge of county transport, including county roads, traffic and parking, and public road transport. This distribution of roles provides needed flexibility, as transport, in essence, is anchored locally while having national (and international) dimensions. Yet, it also leaves room for contradictory interpretations, and the scope of responsibilities that are actually passed on to counties as far as transport is concerned will also be defined by practice. In addition, it can lead to conflicts, for example, the national government may run what it sees as a high capacity highway through a dense urban core as a national highway to enhance intercity travel, but it is in fact also an urban road that in its design leads to local problems for pedestrians, public transport, businesses and the overall urban fabric.
- **County governments are eager to embrace new functions.** These new functions have to be operationalized through a series of bylaws, which have been or are being prepared. In order to facilitate the devolution of the appropriate urban mobility powers and functions to counties, support for adequate policy and bylaw preparation is therefore required. In addition, national authorities need to approve bylaws prepared at county level to give them legal power. In Mombasa, for instance, the county government has prepared enforcement bylaws but is missing the needed legal backing to de facto take over enforcement.
- **Counties will have to develop capacities commensurate with their new responsibilities.** While new responsibilities are progressively passed on to counties, the capacity of counties to actually take on these responsibilities will depend on the level of resources (both human and financial) available to them. A large part of these resources will come from the central level (be it in the form of financial flows or capacity building programs), but counties will likely need to increase their capacity to generate funds internally. In addition, levels of technical and organizational capabilities vary greatly across counties, and harmonization efforts will be required.
- **NMTs enjoy a higher mode share than in the capital city.** While the modal share of walking tends to be higher in secondary cities (World Bank, 2016), the question of maintaining (or improving) this share is twofold. First, a number of pedestrians are forced to walk long distances because they cannot afford the daily cost of public transport – and even less so to own a personal vehicle. Second, a number of trips over short to medium distances in central urban areas are made by motorized modes. It is therefore necessary to provide "captive pedestrians" with affordable alternatives to walking while promoting a shift towards NMTs for shorter trips. While some infrastructure is available along the main corridors, it generally lacks in continuity, safety (in particular, at crossing points), and comfort.
- **There is a need to systematize transport planning in secondary cities.** Although Mombasa has integrated strategic urban development plan, most secondary cities are lacking transport plans to guide the development of their infrastructure. In smaller cities, such plans would aim at better structuring road transport through integration with land use policies. At the same time, a city like Mombasa also requires investment in Mass Transit as a large part of the urban population (50% or more) live in the rural outskirts of the metropolitan area and face travel distances of 10 to 20 km (one way) on a daily basis. Planning for secondary cities can be seen as an opportunity, since

congestion problems have generally not reached the severity of those observed in Nairobi (although Mombasa exhibits a comparable profile).

- **Coordination between national and local levels is required in all fields.** Regarding the devolution of urban mobility functions, good articulation between the national and the local sphere will be critical. Regulatory and traffic management functions handled at the county level, for instance, need to be in alignment with infrastructure or transport services projects decided at the national level.

Strengths	**Weaknesses**
■ County governments are eager to embrace new functions; ■ Progress with development of urban mobility plans.	■ County lack capacities commensurate with their new responsibilities.
Opportunities	**Threats**
■ Enhance Public Transport supply to capitalize on later demand (NMT users); ■ Positive impact can still be made on levels of congestion; ■ Establish well-functioning NMT networks.	■ Funding not following devolution of functions.

Table 11: SWOT matrix of issues linked to national government support for urban transport management in secondary cities

3. Recommendations for each thematic area

3.1 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 26):

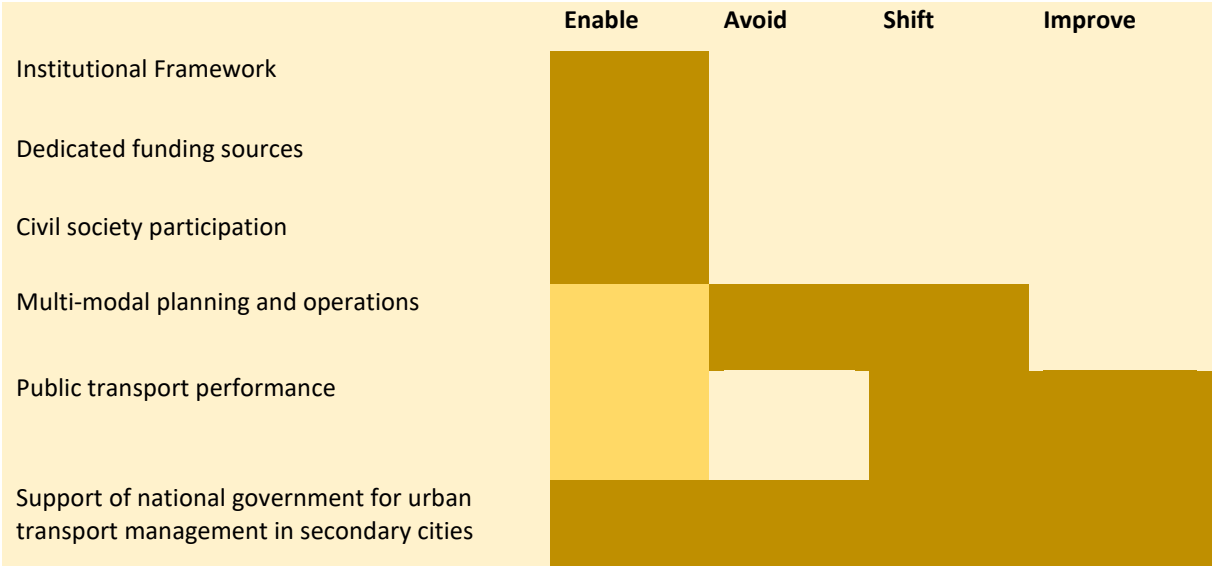


Figure 26: The six thematic areas of the study and the EASI conceptual framework

In order to best support decision-makers in improving the conditions of mobility and accessibility in Kenyan 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 and globally validated during the National Forum on Urban Mobility, aim to respond at national and local level to the main challenges of the sector in Kenya. The improvement of urban accessibility and mobility is a complex task, and these recommendations aim at mobilizing all stakeholders around specific interventions.

3.2 Recommendations in respect of governance efficiency

E1: Develop a finance and fiscal framework for urban mobility and access

Although government recognizes the need to consider urban transport as a public good, there is currently no dedicated source of funding for urban mobility and access improvement. There is therefore a need to develop an inter-governmental finance and fiscal framework for urban mobility and access. Such framework should set out the way in which urban mobility and access is to be dealt with in the national inter-departmental allocation process, (i.e. the urban mobility shares of the national fiscus), as well as the basis (criteria) in accordance with which applications for urban mobility funding will be dealt with at the inter-governmental level. This would increase the predictability of public contributions to the sector, thus improving the planning capacity of ministries, departments, agencies, and counties. The framework should also establish an urban mobility fund and set out criteria in accordance with which Cities and Counties can apply for funding to improve urban mobility and access. A clear inter-governmental finance and fiscal framework in support of urban mobility provides clarity on available funding and transparency on the rules to be followed and criteria to be met in order to access such dedicated funding. There is also a need to explore alternative funding sources that can be dedicated to urban mobility improvements. In this regard, so called “green funding” solutions linked to carbon emission reduction initiatives should be considered and a link should be made via the

Ministry of Environment to monitoring of emissions and ways that improvements can help the country meet its NDC as well as source such financing streams dedicated to low carbon and no carbon transport.

In order to give effect to this recommendation it is proposed that it be taken up by the National Treasury in consultation with the MoTIHUD and Ministry of Environment. It is further proposed that the national administration engage local government at the county level in this process. As a first step, it is recommended that a systematic inventory of needs and resources available to the sector be established. In terms of needs, the development of a Public Transport Data Portal containing indicators on the quality and accessibility of public transport services at a fine spatial scale would allow for the objective assessment of funding needs. In terms of resources, it is necessary to have a global understanding of the costs associated with urban mobility, with a breakdown by institution, government level, mode of transport, and capital vs. operating expenditure. This inventory should not be limited to public expenditure and resources, but also recognize the importance of private sector's contributions (in particular, the weight of the matatu industry). Building a clear understanding of the sector's financial flows is a critical prerequisite to informed decision-making. This will also serve as a basis to direct the proceeds of a future dedicated urban mobility fund. The preparatory process should ideally be completed by the end of the next financial year.

Box 3 – An example of a financial incentive program targeted at local governments in Morocco

The Fund for the Support of urban and interurban road Transport Reforms *(Fonds d'Accompagnement des Réformes du Transport routier urbain et interurbain – FSTR)* is a financial incentive mechanism created in Morocco in 2007 to encourage the development of mass transit infrastructure in Moroccan cities. The fund supports mass transit projects in cities by funding infrastructure investment. It can also finance initial operating deficit during the three first years of operations of the project, expecting that the mass transit line will then have no operational deficit.

Based on the estimated infrastructure needs of the 10 main cities of the Kingdom, FSTR targets the implementation of a total investment program of about 30 billion MAD (approximately 3.27 billion USD) until the year 2027. The fund's resources come from the State budget and a special purpose account for the Value Added Tax (VAT) managed by the Ministry of Interior.

Projects eligible for the FSTR's financial support include:

- Construction of tramway and BRT lines (including contributions to cover operating deficits up to the third year after the date of operations);
- Creation of dedicated bus lanes and/or facilities designed to improve their commercial speed (such as tricolor traffic signal systems capable of giving priority to buses and trams).

Projects are considered eligible to funding based on allocation criteria regarding notably:

- Strategical, technical, financial and socio-economic pertinence of the project;
- Coordination, planning and implementation modes and processes for the project;
- Emergency of mobility needs in the cities considered.

Box 4 – 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 6th 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.

E2: Support the establishment of good metropolitan governance

Although NaMATA is yet to be formally established, it is felt that the Transport Authority model for Nairobi could become a model for other counties and metropolitan areas such as Mombasa and Kisumu. It is therefore recommended that the institutional model, managerial capacity and financial sustainability of NaMATA be developed by drawing on lessons to be learnt from international good practice, including lessons from recent transport authority establishment processes in leading African cities, and that the role of NaMATA in the development, implementation and management of the planned Mass Rapid Transit system in Nairobi be confirmed as part of this process. These objectives will best be achieved through a pragmatic and evolutionary approach, starting with the strengthening of NaMATA's institutional capacities by focusing on its coordination function (especially while NaMATA is operating under an executive order). In the interim period leading to the formal establishment of NaMATA, counties should develop coordination and activation mechanisms to tackle urban mobility challenges at the relevant metropolitan scale.

Kenya adopted a framework for devolution of powers and functions to county level in the 2010 Constitution. Over the period 2010 to 2017, limited implementation of this policy took effect. The establishment of a metropolitan transport authority in the City County of Nairobi provides a unique opportunity to demonstrate the national government's resolve with regard to the policy of devolution and provides the opportunity to put into place and test the working of the policies and mechanisms required to make a devolved system of government work in respect of urban mobility powers and functions.

In order to give effect to this recommendation it is proposed that the State Department for Urban Housing and Urban Development of the Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD), under which NaMATA is currently placed, assumes the primary responsibility. It is further proposed that MoTIHUD engage the counties constituting NaMATA on

this question. As a first step, it is proposed that NaMATA be established by an act of Parliament and that there is further consultation with the counties on needed capacity building. NaMATA is currently established a state corporation, under the State Corporations Act (Act 11 of 1986). As a result, it does not have the legal backing of an authority and cannot take on its full role. The enactment process should be completed as soon as possible.

E3: Enhance the devolution of urban mobility functions by building standardized data, design standards and institutional capacity

The national devolution policy raises the question of the effective transfer of responsibilities for urban mobility planning and regulation at county level. To take on these new responsibilities, counties need to receive or develop adequate human and financial resources and also have adequate data for planning and managing urban transport as well as better design guidelines. For example, Kenya does not yet have up-to-date and complete urban streets guidelines the properly prioritize pedestrians who are a majority (most people walk even after they park a car!) and include the most vulnerable in line with SDG11.2, and this process should be accelerated.

Capacity building efforts should nevertheless not be limited public administration and extend to other key stakeholders of the urban mobility system (e.g. public transport service providers, civil society bodies, and user groups). An assessment of the needs of the various target audiences is needed (the missing data, knowledge, skills and attitudinal change requirements of each target audience), prior to identifying appropriate service providers to address them. The outputs and outcomes to be achieved by the various capacity building programs should be clearly defined and lead to systematic reporting through a system of monitoring and evaluation.

There should be a focus on the devolution of the appropriate urban mobility powers and functions to urban counties, for the latter to gradually develop capacity in transport planning, service regulation, contracting functions, transport management and funding, and infrastructure delivery where relevant. In the same way, the capacity of local administration to work with the matatu industry needs to be improved through training and the development of streamlined processes. One of the preconditions for the effective transfer of these functions is the development of human capital at county level, failing which devolution is at the risk of remaining a protracted process. For it to succeed, this process needs to be accompanied by the establishment of strong coordination mechanisms

- Between the national and local levels, pas per the intent of the Urban Areas and Cities Act and the National Urban Policy (e.g. the coordination between County, KURA and KeNHA around infrastructure development and or traffic management);
- At national government level to build transversal implementation management capacity.
- All levels of government need to invest in creating capacities to collect and manage data for planning, operations and passenger information services as well as reporting for SDG11.2. Data should be shared and stored on the national transport data portal and as part of the Kenya Open Data Initiative,

While these efforts involve the design processes and ways of working together between institutions, they do not necessarily require the creation of new institutions as such, and the proliferation of inter-governmental coordination structures should be avoided.

In order to give effect to this recommendation it is proposed that the Secretary for Devolution and Intergovernmental Relation (Ministry of Devolution and ASAL) assume the primary responsibility. As a first step, it is proposed that the Ministry create a Public Transport Academy in collaboration with local universities to develop a recruitment, training and placement program providing the requisite human capital at city, town and County level to give effect to the devolution of urban mobility powers and functions to cities and Counties. As counties progressively acquire the required capacity

to manage urban mobility, the effective transfer of new responsibilities in this field will become possible. The Public Transport Academy should also offer curricula dedicated to industry professionals and serve as a platform to engage civil society. The government should also explore supporting a Transport research center and curriculum development with partner universities both local and global which could run critical executive courses especially in new areas involving data, technology, safety and street redesign and multi-modal and mass transit operations management. The first phase of this program should be gradually rolled out over a period of several years.

Box 5 – "Conseillers en mobilité" – Belgium's initiative to build institutional capacity in urban mobility planning and management

At the end of the 1990s, following a significant rise in motorization, most Belgian cities were facing increasing congestion, deterioration in the supply of public transport, and a degradation of the urban environment. Regional and municipal authorities found it difficult to deal with these problems due to a lack of the necessary skills at all levels of the administration.

The Walloon Region, one of the three entities comprising the Kingdom of Belgium, was the first to set up, as early as 1998, a training program for 'Conseillers en Mobilité' (Mobility Advisors) aimed at public administrations. The basic training covers the main technical areas related to mobility planning and management. Within the public administration, the role of the advisor is to act as a relay between the different stakeholders (politicians, technical departments, interest groups, users, operators, etc.). The program forms part of the "Charter for Mobility", which commits all stakeholders to develop a municipal or inter- municipal mobility master plan for public and non-motorized transport targeting quality of life and environmental improvements. Prerequisites to obtain funding from the Region for municipal mobility projects (e.g. investments on road or public transport networks) include not only the adoption of a mobility plan, but also training and putting in place at least one advisor within the local administration.

Since 1998, more than 1,000 mobility advisors have been trained and placed in Wallonia, in addition to which there are 300 advisors in the Brussels-Capital region. This network constitutes a community of practice and exchange, and is supported by regular publications, advanced training, workshops, an annual symposium and regular technical visits.

E4: Strengthen the role of the Transport Licensing Appeals Board

The role of the national transport regulator (NTSA) is supported by the existence of the Transport Licensing Appeals Board (TLAB), which falls under the Judiciary. The independent TLAB established in Kenya represents a significant advancement in ensuring administrative justice in the execution of transport regulatory processes. The building of the capacity of the Appeals Board as the institution charged with this responsibility can provide a good practice model that can be considered by other African countries. The advancement of administrative justice in the transport regulatory system builds transparency, confidence and trust between operators, administrators and law enforcers. This system is however still in its infancy. It is therefore recommended that the role of the TLAB be strengthened by opening branches at the county level and enhancing its investigative and administrative capacities through the introduction of a legal and or para-legal candidacy and career path model in support of the work of the Board. Finally, the TLAB should launch a communication campaign to inform professionals from the transport industry and citizens of its existence.

In order to give effect to this recommendation it is proposed that the Department of Justice assume the primary responsibility. As a first step, it is proposed that branches of the TLAB be opened in Mombasa and in the Rift Valley region to bring services closer to the users. Communication

campaigns should be carried out locally to inform members of the transport industry of the existence of this body. This process should ideally be completed within two years.

3.3 Recommendations in respect of land-use efficiency

A1: Integrate land use and multi-modal planning in urban areas

In order to limit the overall number of motorized trips and their distance, land use and transport planning need to be better integrated in Nairobi metropolitan area. At a planning level, this can be achieved through three main avenues. First, by limiting urban sprawl through the development of metropolitan-level governance and the control of building permits. Second, by promoting transit - oriented development – that is, the construction of new residential areas and activity zones along existing or planned transport infrastructure. Third, by promoting mixed land-use with the aim of bringing jobs closer to households, thus reducing travel needs. This approach improves transport performance while also delivering more livable towns and cities. It is therefore recommended that the effect be given to integrating land use and multi-modal planning in all urban areas (where no land use and multimodal master plans exists such plans need to be developed as a matter of priority).

In order to give effect to this recommendation it is proposed that County Governments assume the primary responsibility. As a first step, it is proposed that Counties develop integrated multi-modal urban development and mobility plans at a metropolitan scale. The preparatory process should ideally be completed within a period of two years.

3.4 Recommendations in respect of multimodal transport system efficiency

S1: Avoid mistakes made by others in implementing Mass Rapid Transit systems

Both the cities of Nairobi and Mombasa are planning to implement Mass Rapid Transit systems. In the case of Nairobi, NaMATA will be assigned the planning implementation and oversight role over the Mass Rapid Transit system. A number of African cities have, in the last decades, planned and implemented Mass Rapid Transit Systems. There is a significant body of research and learning available on the successors and failures / difficulties experienced in implementing these systems in African cities. Some of the most common challenges encountered by BRT projects across the continent include incomplete implementation, high operating costs poor design and integration with existing land-uses and other modes.

It is therefore recommended that, the planning and implementation of Mass Rapid Transit systems in Kenyan cities be informed by a structured process of learning from comparative African cities. The benefits to be derived from an investment in learning exchanges from comparative African cities will significantly outweigh the cost of repeating the mistakes of others. In addition, attention must be paid to upgrading bus services and NMT across the city and not just where these systems intersect along high-speed corridors.

In order to give effect to this recommendation it is proposed that NaMATA assume the primary responsibility. It is further proposed that NaMATA engage the Ministry of Transport, Infrastructure, Housing and Urban Development (MoTIHUD) and counties in this process. As a first step, it is proposed that study tours be organized on the African continent in countries where BRT projects have been implemented with varying degrees of success. Such tours should not be designed to illustrate success stories, but rather focus on the challenges and failures experienced by the institutions in charge of implementing these projects. Study tours should be organized at the soonest, as the planning of the BRT systems is ongoing.

Box 6 – 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 7 – BRT in Dakar: example of a Mass Transit Project

Expected to be operational in 2020, the Dakar BRT project links the city's CBD (Le Plateau) with the northern most commune: Guediawaye. The BRT system consists of an 18.3 kilometers corridor expected to serve 300,000 daily passengers.

The city's transport authority (CETUD) is in charge of implementing the project. With this project, CETUD seeks to highlight the role of public transport services as the main mode in Dakar's mobility system, while also aiming at curving motorized traffic increase, as evidenced in recent years.

Dakar's BRT implementation should improve travel conditions in the city. According to most recent surveys, walking is the primary mode of travel in Dakar (70% of all trips), followed by public transport services (25% of all trips). However, public transport users have to endure long travel times mainly the result of increasing levels of congestion. Using exclusive corridors and high capacity vehicles, the BRT services are expected to result in substantial travel-times reductions for users: modelling exercises suggest that a 95-minute trip from 2015 will be cut in half after the system's implementation. Different analyses suggest similar results: according to Stokenberga (2017), for several areas in Dakar, travel times to the CBD will be reduced by 15 to 21 minutes.

Using datasets constructed by CETUD, the World Bank further analyzed accessibility improvements resulting from the BRT system's implementation. In 2020, Dakar's BRT will improve from 52% to 59%[9] general accessibility to job opportunities of inhabitants. Furthermore, for instance, accessibility to health services improvements are also expected: 60% of inhabitants will then be able to access one more health center when compared to pre-BRT conditions.

A second mass-transport project is also expected in Dakar: The Train Express Regional (TER) should be implemented in 2019. This rail project will link the CBD with the new urban centrality of Diamniadio, located 30 kilometers to the East of the city. Estimates suggest a 150000 daily passenger patronage. For CETUD, it is key that TER and BRT projects be well articulated with the incumbent bus network. Preliminary studies calculated that 90% of patronage of the TER would come from feeder bus services, while the percentage is 60% for the BRT system. In order to ensure articulation, CETUD is conducting a large project that seeks to restructure the incumbent bus network in order to improve inter-modality.

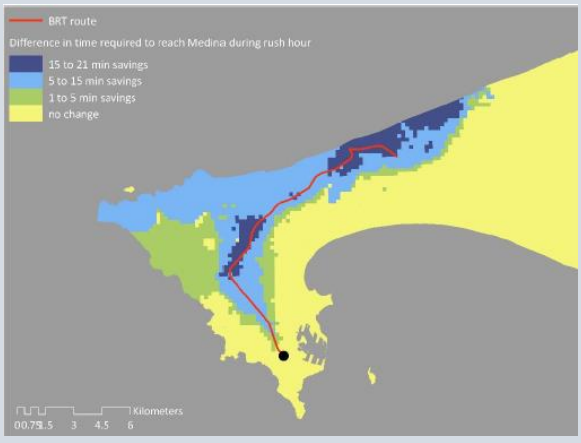


Image 1 – Time savings to reach Dakar's central area estimated with the BRT corridor implementation

Image 2 - Future BRT corridor image for Dakar[10]

[9] In this case, accessibility is the percentage of job opportunities made accessible to inhabitants travelling hour or less.

[10] https://i.ytimg.com/vi/6G0/maxresdefault.jpg

S2: Invest in building the capacity of the matatu sector and city-matatu engagement

The matatu business model perpetuates sub-optimal public transport performance as daily cash targets rather than profitability through efficiency improvements and operational optimization appears to hold sway. Inadequate traffic management intensifies congestion on the road network, thus reducing the commercial speed and profitability of public transport operations. It is therefore recommended that an investment in the development of the capacity of the paratransit (matatu) sector be made with the view to assist the sector in managing change, enhancing the operational capacity of the sector and rethink the matatu / SACCO business model, so that the sector can become the driver of the urban mobility improvement agenda.

Investment in the capacity of the paratransit sector as the dominant public transport mode to manage change is an essential step in breaking the "gridlock" that keeps the urban mobility system in the main urban areas trapped in a state of inertia. It is also critical that the city is supported in finding new ways to engage with the matatu sector to co-develop solutions that can improve operations including better infrastructure, passenger information and route rationalization which will also require the support of the national government. We recommend a more thorough analysis of incentives and shared responsibility for improvements rather than just regulation.

In order to give effect to this recommendation it is proposed that the National Transport and safety Authority assume the primary responsibility. It is further proposed that NTSA engage SACCOs 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 the matatu industry. While acknowledging the strong foundations of the sector, in particular through the SACCOs, 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…). This support program should be implemented over a period of several years, starting with pilot interventions in a limited number of cities, and working with responsive SACCOs.

Box 8 – 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.

S3: Set up a national portal for digital mobility data

Kenya nurtures a vibrant digital ecosystem that has given birth to internationally recognized innovations such as the M-Pesa system. The role of ICT as a tool to get critical data for planning and passenger information systems as well as a catalyst in facilitating rapid improvements in key elements of the urban mobility system needs to be explored. It is therefore recommended that the National Government launches a dialogue with its tech sector with the aim of developing a partnership to explore the catalytic changes to the urban mobility landscape that can be brought about by Information and Communication Technology and piloting selected programs and applications with the

view to initiate change in the urban mobility sector. The capacity of the local ICT sector to facilitate change in the urban mobility sector appears to be under explored and not harnessed to support change in the sector. In addition, technology is critical for helping to create data that is a basic requirement for multi-modal planning as well as passenger information.

Lack of data hinders the development of informed policies, and the implementation of relevant measures. It also prevents implementing agencies and oversight bodies from effectively monitoring and evaluating the programs that are implemented – thus limiting accountability. Where pertinent data does exist, it is not easily accessible to the institutions that need it, as it is not consolidated in a central repository, but distributed amongst a number of different actors using different formats and standards. It is therefore recommended to set up a national portal and repository for digital mobility data. This platform could be developed a sub-section of the existing Kenya Open Data portal.

In order to give effect to this recommendation it is proposed that the MoTIHUD assume the primary responsibility. It is further proposed that the Ministry engage NTSA, the Ministry of Information, Communications and Technology, and the ICT Authority in this exercise. As a first step, it is proposed to organize a national competition asking developers and technologists to devise innovative solutions to collect, harmonize, store, share, and analyze digital mobility data. This event can take the form of a "hackathon", where computer programmers work in teams, and have a limited amount of time to develop a solution that they present to a jury of professionals. The preparatory process should ideally be completed within a six-month period.

3.5 Recommendations in respect of road-space use and vehicle efficiency

I1: Improve Nairobi traffic signaling system

Inadequate traffic management, particularly at key intersections, intensifies congestion on the road network. Optimizing the operation of intersections will allow maximizing the potential of road infrastructure, thus avoiding significant time losses for all road users, the reduction of commercial speed and profitability of public transport operations, and increases of air quality pollution. It is therefore recommended to prioritize investments in the improvement of the Nairobi traffic signaling system. This will alleviate the significant peak hour congestion at key intersections in the immediate term and lay the foundations for sustained improved traffic flows in the city.

It is important to underline that traffic signaling is a circulation management tool that allows reaching mobility policy objectives: It allows controlling different traffic flows, promoting specific movements, and giving priority to public transport. Interventions should not be limited to optimizing the operation of traffic lights at intersections.

Any intersection traffic light intervention must be based on a well-defined mobility policy. It is recommended to define a global traffic signaling strategy (at the city scale), answering to the previously defined urban mobility objectives, as well as a local traffic signaling strategy (at the intersection scale) which proposes the desired optimization of operation of the traffic lights intersection. Any such implementation of a traffic lights strategy must be carried out in parallel with a traffic plan, to avoid the transfer of undesirable traffic from the primary road network to the secondary road network.

In order to give effect to this recommendation it is proposed that Kenya Urban Roads Authority (KURA) in collaboration with the Counties assumes the primary responsibility. It is further proposed that KURA engage the Traffic Police to enhance the management of intersections that will continue to be controlled manually. As a first step, it is proposed to fast track the implementation of the Intelligent Traffic System, first through the definition of a global traffic signaling strategy, followed by optimizing key intersections accordingly (planned under the World Bank-financed NUTRIP), and finally engaging with university partners and the Kenya Institute of Public Policy and Research Analysis (KIPPRA) to monitor resulting improvements.

I2: Formalize civil society bodies in urban mobility and access

There are strong systems of civil society participation already in place in Kenya. Nairobi City County, for instance, has an official MoU and legislation on cooperation with KARA for service delivery. The country also presents well-structured engagements in terms of Public Transport Service Providers at both national and county level. It is recommended that the role of structured civil society bodies such as KARA as well as research and academic institutions be formalized in urban mobility planning, and decision-making processes, by legislating the consultative steps required prior to the approval of an urban mobility related policy, plan or decision – in a manner similar to the processes globally followed in respect of Environmental Impact Assessments.

This recommendation ties in with recommendation E3, as civil society bodies will establish relevance by developing evidence-based advocacy capabilities and being recognized for their role in providing data and analysis to government while making the case for change and improvement. In the same way, the university and education sectors should consider aligning curriculums with specific needs from government and civil society, particularly in terms of monitoring and evaluation capacity.

The institutionalization of consultative processes relating to urban mobility planning and decision-making processes will enhance the legitimacy, practicality and quality of such plans and decisions, while making them more transparent in the eyes of the public. Communication with the general public should also be pursued through the use of social media platforms to foster a public conversation about urban mobility and access issues.

3.6 Synthesis of recommendation on suggestion of implementation

N°	Recommendation	**Who?** *Which institution to manage the implementation?*	**With who?** *Which institution involved / consulted?*	**How?** *How to implement? What are the next steps?*	**When?** *What timeframe for implementation? What temporal opportunities and constraints?*
E1	Develop a finance and fiscal framework for urban mobility and access.	National Treasury	MoTIHUD, Ministry of Environment County governments	Step 1: Establish a systematic inventory of needs and resources available to the sector; Step 2: Build a clear understanding of the sectors' financial flows; Step 3. Develop clear criteria for accessing funding, reporting and transparency.	End of the next financial year.
E2	Support the establishment of good metropolitan governance.	State Department of the MoTIHUD	Metro-Counties NaMATA	Establish NaMATA by an Act of Parliament.	ASAP.
E3	Enhance the devolution of urban mobility functions by building standardized data, design standards and institutional capacity.	Secretary of Devolution and Intergovernmental Relation	Counties Universities MoTIHUD ICT Ministry	Create a Public Transport Academy, Data Portal, Transport Research Centre.	Over a period of several years.
E4	Strengthen the role of the Transport Licensing Appeals Board.	Department of Justice	MoTIHUD	Open branched of TLAB in Mombasa and in the Rift Valley region.	Within 2 years.
A1	Integrate land use and multi-modal planning in urban areas.	County Governments	MoTIHUD Lands	Develop Integrated Multimodal Urban Development and Mobility Plans.	Within 2 years.
S1	Avoid mistakes made by others in implementing Mass Rapid Transit systems.	NaMATA	MoTIHUD	Organize study tours on African continent where BRT have been implemented. Have adequate data for the entire system for proper planning.	ASAP.
S2	Invest in building the capacity of the matatu sector and city-matatu engagement.	NTSA	SACCOs Universities	Develop a support program to improve the organizational and business management skills of the Matatu industry.	Over a period of several years.
S3	Set up a national portal for digital mobility data	MoTIHUD	NTSA ICT Ministry ICT Authority	Organize a national competition asking developers and technologists to devise innovative solutions to collect, harmonize, store, share, and analyze digital mobility data	Within 6 months.
I1	Improve Nairobi signaling system.	KURA and Counties	Traffic Police	Fast track the implementation of the Intelligent Traffic System.	
I2	Formalize civil society bodies in urban mobility.	MoTIHUD.	Counties Universities KARA	Develop guidelines and process for public participation. Conduct analysis of existing civil society network	Within 1 year.

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5. Appendices

Appendix 1: Kenya Counties Map (Ministry of Devolution & Planning)

- Sources for transnational data in the eight pilot countries :

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

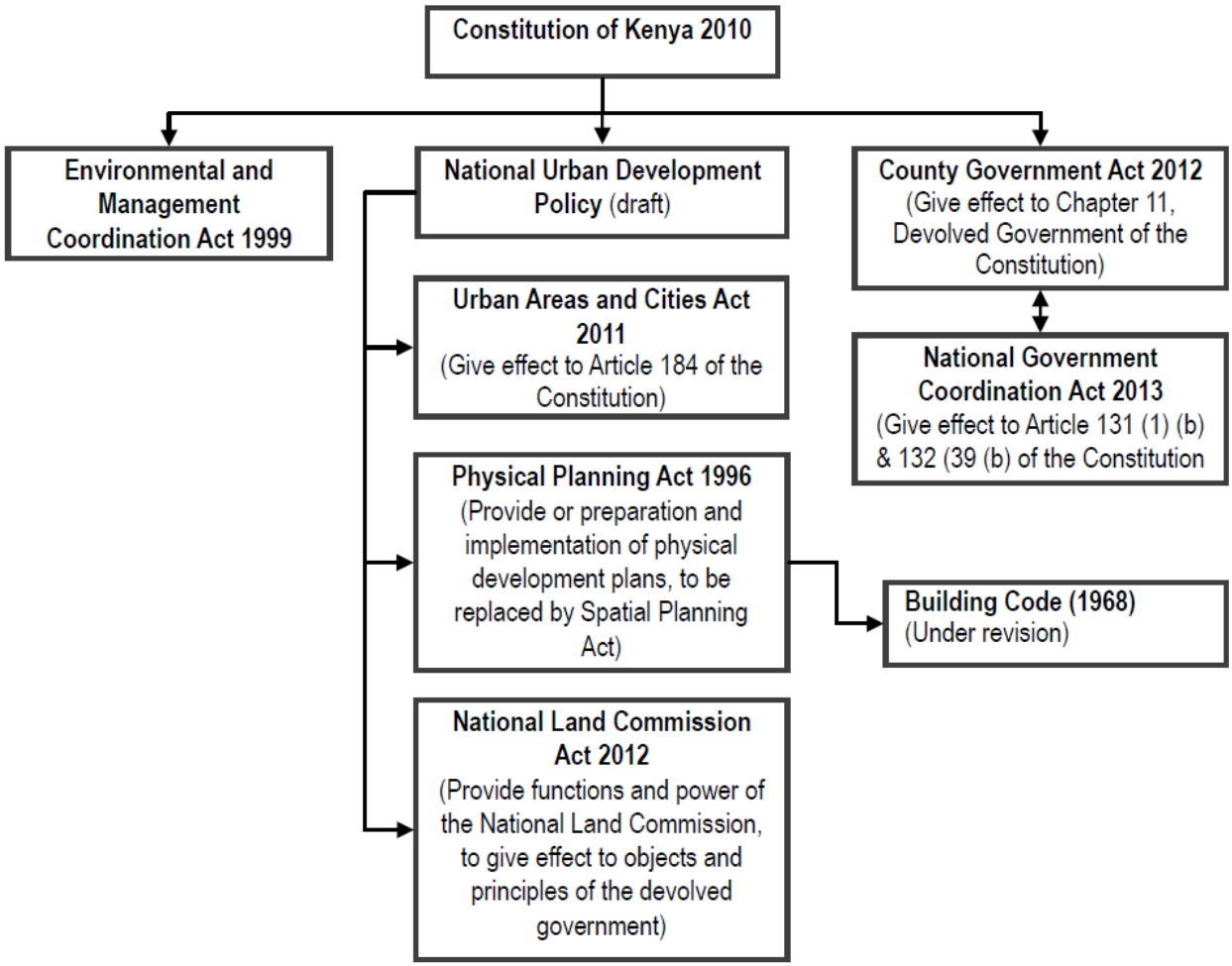
- Sources for statistical data in Nairobi and Mombasa :

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

Sector		Urban Planning	Transport public					Public spaces				
			Institutional collective transport (train, metro, bus, boats, etc)	Bus stations (or bus terminals)	Paratransit		Taxis (shared taxis, mototaxis and three-wheelers)	Road infrastructure and road network	Traffic management	Parking	Non-motorized modes	
					Professiona-lized	Non professionalized (minibus, shared taxis)					Walking	Cycling
Strategical level *What strategies? With which ressources?*			Policy definition and/or multimodal urban mobility plan definition									
	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					Builders' standards definition	Highway (or road) code regulatory framework definition and enforcement by responsible entity			
	Licensing, permits and contracting	Building 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-orad parking fare setting mechanisms		
	Infrastructure, Equipement	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
Operational level *How to produce services efficiently?*	**Operations / 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	Operations and maintenance of on-the-road or off-road parking	Cleaning and maintenance of non-motorized modes infrastructures	

Appendix 3: Kenya Counties Map (Ministry of Devolution & Planning)

Appendix 4: Structure of Laws and Plans



Source: JICA, 2014

Appendix 5: The context of the Urban Mobility Forum

The purpose of the Urban Mobility Forum

The Urban Mobility Forum was held on 17 and 18 May 2018 and took place in the Crowne Plaza Hotel in Nairobi, Kenya. The purpose of the Forum was to outline the diagnosis (findings and recommendations) established during the first field mission held in February 2018 in Nairobi and Mombasa 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 Kenya.

Attendance

The Urban Mobility Forum was attended by more than 80 representatives from the following institutions:

- The Ministry of Transport, Infrastructure, Housing and Urban Development;
- Ministry of Environment and Forestry;
- Nairobi Metropolitan Area Transport Authority (NaMATA);
- National Transport and Safety Authority (NTSA);
- Representatives from Nairobi City County;
- Kenya Urban Roads Authority (KURA)
- Kenya National Highways Authority (KeNHA);
- Kenya Alliance of Residence Associations (KARA);
- Kenya Railways Corporation;
- Matatu Owners Association;
- Matatu Welfare Associations;
- Kenya Bus Services;
- Transport Licensing Appeals Board;
- Representatives from Mombasa County;
- African Development Bank (AfDB);
- Institute for Transportation and Development Policy (ITDP)
- World Bank;
- French Embassy.

Opening address

M. James THEURI and Ms. Judith KERICH from the Project Management Office introduced the Urban Mobility Forum with a welcoming address as well as introduced the different attendees.
M. Zemedkun Girma TESSEMA then presented the SSATP program and its objectives followed by an opening address by the Principal Secretary, the Charles HINGA, on the behalf of the Cabinet Secretary.
M. Nico MCLACHLAN, as the Country Manager, then presented the different facilitators of the Forum as well as a short introduction to the EASI framework. The Country Manager introduced 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 the State Department of Transport and Urban Development, NTSA, Nairobi City County, the Transport Licensing Appeals Board, Mombasa County, the University of Kigali and the Matatu Welfare Association provided an initial round of responses to

the presentation of findings and recommendations, with the view to stimulate discussions to follow during break away sessions.