Transforming Urban Transport – The Role of Political Leadership
TUT-POL Sub-Saharan Africa
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FOREWORD

In a world of rapid urban growth and looming environmental crisis, the urgency of addressing transportation challenges could not be greater. Scores of public authorities, scholars, and foundations – not to mention technology innovators in the private sector – are turning their creative energies and insights towards the study of mobility and access. Many seek to discover new tools and practices to make cities and their transportation infrastructures more sustainable, as well as to link these goals to equity and social inclusion. To date, much of this work has focused on Europe, the Americas, and South as well as East Asia. But one region that has remained understudied is the African subcontinent. This is something to remediate, not just because African cities are among the most rapidly urbanizing locations in the world, but also because the transformation of these cities is laying the foundation for new development trajectories, both urban and nation. As Africa sits at the crossroads of change in the 21st century, finding itself the privileged site for new global investments in activities as divergent as resource extraction and transcontinental infrastructure, its cities will play an increasingly important role in establishing the contours for future prosperity – not just of urban residents but for the entire region.

Rapid urbanization underway in African cities presents both challenges as well as opportunities to enable development at the urban and national scales. As cities expand, in terms of population and physical space, the need for significant improvements in urban infrastructure, transport, and mobility has become evident. At present, inadequate infrastructure and spatial planning in Sub-Saharan Africa complicate typical urban transport challenges such as: spatial mismatches between housing and economic opportunity, rising motorization, extreme congestion, and deteriorating environmental conditions. With an eye to these conditions, our research tackles the question of what can be done, by whom, and how in order to help African cities pursue equitable and sustainable transportation policies, priorities, and investments. In asking questions about how to introduce change, as opposed to merely assessing the problems associated with current transport and mobility conditions, we follow many of the insights generated by the Transforming Urban Transport – the Role of Political Leadership project, also undertaken at Harvard and funded by the Volvo Research and Educational Foundations. Indeed, we were eager to take the framework developed to study advances in transportation policy in more prosperous cities across Europe, the US, and Latin America, and consider their relevance to the African subcontinent.

In this initial stage of research, we examined the strategies and tactics undertaken by policy innovators in transport, whether in the public or private sector, with an eye to identifying barriers and enablers to transformative change. In turning our attention to the very different political, social, economic, and even spatial context of African cities, we have proceeded under the assumption that while there may be some relevant knowledge transfer coming from the initial stages of our research, we also want to identity the specificities associated with the African context. We firmly believe that there are not one-size-fits-all pathways towards sustainable urbanization through transport, but that the possibilities for transformative change must be grounded in a deep understanding of local conditions. With our research, we have tried to begin to understand the political, institutional, and governance context within which more sustainable transport futures can and will be crafted.

Specifically, we sought to extend the TUT-POL research framework and its findings (to the extent possible) about the role of political leadership and governance in the implementation of transformative transportation policies in cities around the world, to inform and develop our understanding of transportation interventions in Sub-Saharan African cities. The study sought to explore the major urban transport interventions across three cities in Sub-Saharan Africa – Accra, Ghana; Dar Es Salaam, Tanzania; and Kigali, Rwanda – to understand each city's approach, progress, and remaining challenges. By highlighting the challenges and possibilities for urban transport, we hope this research contributes to improved governance and implementation of more sustainable and transformative urban transport initiatives in African cities.

Diane Davis

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1. Introduction

Context

Africa is currently in the midst of a number of simultaneously unfolding transitions, among them demographic, economic, environmental, and urban (UN Habitat, 2014). The urban transition, which entails the shift from rural to urban population majorities, is perhaps the most comprehensive phenomenon since independence across African nations. From 2010 to 2050, the number of Africa's urban dwellers is projected to increase from 400 million to 1.26 billion. The ability of African cities to cope with these numbers is tenuous, as most lack the institutional and infrastructural capacity to absorb such high population levels. In addition to Africa's rapid urban growth is economic growth. In recent years, Gross Domestic Product (GDP) in many countries across the continent has increased to more than twice the rate of the 1980s and 1990s, suggesting that Africa is rising. By 2020, 128 million African households are projected to become middle class, boosting living conditions and consumption patterns (UN Habitat, 2014).

Amidst dramatic population and economic growth is the critical need for infrastructure and transport to support development. The policy consensus for Africa's development is focused on economic transformation. The African Union's Vision 2063 calls for integration of the continent more substantially in the global economy. The objective of the African Development Bank (AfDB) is to establish Africa as the next emerging market. Meanwhile, the Economic Commission for Africa reports on making the most of Africa's commodities and industrializing for growth, jobs, and economic transformation. Each of these regional bodies is heavily invested in developing infrastructure and transportation that links rural to urban areas and creates connections both within and between Africa's most significant cities. Nationally, many African countries have recognized the potential of cities to drive this transformation. Rising urban populations, particularly with a young and growing labor force, suggest the potential to support diversified and accelerated economic growth. As such, cities present opportunities for connectivity, trade, and investment. The nexus of infrastructure and transport are foundational to the developmental goals at the national and urban scales. These global and national priorities set the parameters for the governance of urban transport in African cities.

Urban Transport in Africa

Transport in Africa's urban centers is the product of historical legacies of governance and decision-making regarding urban form, exclusive access, and limited infrastructure. Rapid urbanization and increasing motorization are pushing outmoded urban transport systems beyond their capacity. At present, the dominant mode of transport in the region is road-based – inclusive of private vehicles, buses, and paratransit – the latter often being the only means to access employment, education, and other public services for low-income populations (Fenta, 2014). For rising middle and upper-income populations, private vehicles are the preferred modality. In cities such as Accra, Lagos, and Nairobi, road-based transport contributes to severe congestion, threatening productivity and sustainability. Transport-related externalities are also on the rise including air pollution, traffic fatalities and injuries,[1] noise, energy depletion, and lack of accessibility for the poor (Pojani et al., 2018). Non-motorized

[1] While Africa possesses only two percent of the world's vehicles, it contributes 16 percent to the global deaths. Seven countries in Africa, namely Nigeria, the Democratic Republic of Congo, Ethiopia, Kenya, South Africa, Tanzania, and Uganda, are responsible for 64 percent of all road deaths on the continent.

transport (NMT), such as walking, represents a significant modal share of transport, though this is dependent on the location of housing relative to economic opportunity and is largely driven by poverty. Public transport is receiving increasing attention in African cities as an integral element of urban systems and one of the factors that determine socio-economic and spatial development of cities (UN Habitat, 2014).[2]

The imperative to improve urban infrastructure and transport is evident in most cities. Globally, urban transport contends with increasing motorization,[3] spatial mismatches between housing and economic opportunity, extreme traffic congestion, and deteriorating environmental conditions. However, transport related challenges in the developing world extend beyond those in advanced countries. Cities in Sub-Saharan Africa contend with additional concerns inclusive of complex land regimes,[4] urban primacy, underdeveloped road networks,[5] and large-scale informality.[6] The combination of these factors with urban sprawl and poor spatial planning have given rise to dysfunctional mobility patterns. As African cities grapple with these challenges and seek to transform urban transport, governance and decision-making determine priorities and policies. This raises a critical question regarding the objectives of policy making regarding infrastructure and urban transport systems and interventions. Is the emphasis placed on supporting economic transformation, or is there a commitment to develop sustainable urban transport that facilitates mobility and access? While the two are not necessarily opposed, the prioritization of one over the other could signify very different decisions regarding transportation initiatives and interventions. This tension regarding what objectives are prioritized raises the necessary question: which actors make the decisions and toward what ends?

References

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Fenta, Tilahun M. (2014) "Demands for Urban Public Transportation in Addis Ababa." *Journal of Intelligent Transportation and Urban Planning, Vol. 2 Iss.3 121-128*.

Pojani, Dorina and Dominic Stead. (2018) "Policy design for sustainable urban transport in the global south." *Policy Design and Practice, 1:2 90-102, DOI:* 10.1080/25741292.2018.1454291.

[2] Infrastructure supporting non-motorized transport has often been neglected in policy making.

[3] With economic growth, many cities in developing countries have begun to follow the trajectory of motorization that developed countries once followed, but at a much faster rate. Worldwide, rising incomes are fueling automobile ownership, spurred by increasingly affordable vehicles. Many urban inhabitants – often the middle-income population – are making the shift from public or non-motorized transportation to private automobiles (Suzuki et al., 2013).

[4] Land regimes vary significantly across African countries, ranging from state to private, and customary ownership of land or some combination of these systems. These ownership regimes render land governance more complex, particularly the coordination of land management, administration, and use.

[5] Stemming from colonial legacies, road networks were limited in scope, emphasizing the export of natural resources and insulating small urban cores from competing colonial powers and indigenous populations. Road development since has progressed in limited fashion. However, much is still focused on supporting the extraction and export of natural resources rather than facilitating urban mobility.

[6] Urban informality is particularly challenging in Sub-Saharan African cities. The growth of urban populations without concurrent increase in affordable housing alternatives has contributed to the growth of informal settlements. Spatially, informal settlements often exist within the urban core, precluding spatial development and land use planning.

Suzuki, Hiroaki, Robert Cervero, and Kanako Iuchi. (2013) *Transforming Cities with Transit: Transit and Land-Use Integration for Sustainable Urban Development*. World Bank, Urban Development Series 74630.

Acronyms

African Development Bank (AfDB)
Gross Domestic Product (GDP)
Non-motorized transport (NMT)

2. Research Design and Methodology

Research Significance

The transformative potential of urban transport to improve urban outcomes in Sub-Saharan Africa is evident. Accepting this potential, what does research on urban transportation in Sub-Saharan Africa offer? First, it is significant to note that knowledge of Sub-Saharan African cities exists primarily outside of core urban and transportation research. An agenda that focuses on the governance of urban transport in this region will expand knowledge and put it into conversation with experiences from other regions. Such research also has the potential to contribute practically to policy formation and exchange information in support of interventions. To achieve their economic, social, and environmental objectives, cities are faced with the need for informed experimentation to learn how to structure, finance, implement, and maintain sustainable urban transport systems. Secondly, while the objectives of sustainable urban transport seem broadly shared and best practices identified, local context matters. Cities in Sub-Saharan Africa exist across highly diverse contexts in terms of geography and culture, colonial and post-colonial histories, state formation and political organization, resources, and developmental trajectories. In addition, competing interests, approaches, and investments in the region are a concern given the plurality of actors – internal and external – engaged in the development of the infrastructure-transport nexus. Thus, it is imperative to gain a deeper understanding of governance and institutional arrangements that support or obstruct urban transport interventions.

Understanding the governance of urban transport is a preliminary step to engage, support, and institutionalize improved decision-making, capacity, and implementation in African cities. This research, conducted following the Transforming Urban Transport – The Role of Political Leadership (TUT-POL) project, provided an opportunity to build on existing knowledge. This project sought to extend the TUT-POL research framework and its findings around the role of political leadership and governance for the implementation of transformative transportation policies in cities around the world, to inform and develop our understanding of transportation interventions in Sub-Saharan African cities. Key questions include: What are the transport policies being produced and why? Who makes the decisions? And what are the impacts? The research has afforded the extension of these questions to an understudied region where urbanization demands nuanced approaches to improve urban transport and mobility patterns. By highlighting the challenges and possibilities for urban transport, we hope this research contributes to improved governance and implementation of urban transport initiatives in African cities.

Design and Methodology

In this exploratory research, we sought to identify several cities engaged in transport interventions, that represent diverse governance systems, institutional arrangements, and approaches to improving urban transport. We began with a sample of over 20 cities in Sub-Saharan Africa, along multiple dimensions including sub-regional variation, city size, administrative or economic capital, decentralized structure, and so on. Ultimately, we selected three cities to conduct preliminary cases studies: Accra, Ghana; Dar es Salaam, Tanzania; and Kigali, Rwanda. In addition to the three exploratory cases, we identified a set of cities for which we developed case notes – intended as abbreviated write-ups to determine potential cases for comparison in future rounds of research. These include Dakar, Senegal; Kampala, Uganda; Lagos, Nigeria; Maputo, Mozambique; Nairobi, Kenya; and Windhoek, Namibia. Write-ups for each of these cities can be found in the Appendix at the end of this report.

For the cases, we sought to identify what the major urban transport intervention(s) were, who the central actors and key stakeholders are in the intervention, and how the engagement of these actors influences the trajectory of the intervention. Overarching questions for the study are as follows:

- What urban transport policies are being produced and why? How are they integrated with urban development more broadly?
- What is the landscape of actors in the infrastructure-transport nexus that determine transportation policy and urban mobility?
- What are the key obstacles or challenges to transformation in the urban transport sector?

The research presented here is based on data collected in Accra, Dar es Salaam, and Kigali between January and February of 2019. Methodologically, document analysis was employed for the desk study. Semi-structured interviews were conducted with key stakeholders in related sectors ranging from state and local government officials, paratransit operators, union and association leaders, civil society representatives, academics, and journalists. Ultimately, the exploratory case research can serve as the basis for a broader set of case studies for comparative analysis to determine similarities and differences among African cities regarding the governance of urban transport, as well as what lessons, experiences, and knowledge can be conveyed to partners in urban transport research, policy, and practice.

Acronyms

Transforming Urban Transport – The Role of Political Leadership (TUT-POL)

3. Exploratory Cases

3.1 ACCRA, GHANA

A. Development Backdrop

Since the late 20th century, Ghana – and by extension Accra – have undergone and continue to experience dramatic economic and demographic transitions. During this period, Ghana experienced increasing political stability, deepening democracy and economic transition from a low-income to lower-middle income country status as ranked by the World Bank (WB). Ghana's urban areas currently contribute close to 70 percent of Gross National Product (GNP), signifying their importance and potential for contributing further to economic growth. Ghana's experience with rapid urbanization began in the mid-1980s until the present, reaching a 50 percent urbanization rate in 2010. The population of Ghana is estimated at 28 million inhabitants, with the urbanization rate projected to increase to 72 percent by 2035 (AfDB, 2016). Greater Accra, which has the smallest land size of the country's ten regions, is projected to have one of the highest urban populations and maintains the highest population density of 1,235.8 persons per square kilometer. At an urban population growth rate of 3.3 percent, Accra and Kumasi metropolitan regions have both grown to over four million inhabitants. With these levels of urban population growth and expansion, there are many challenges facing Accra – the administrative and economic capital of Ghana – including: uncontrolled urban sprawl, slums and squatter settlements, poor sanitation and service provision, as well as inadequate infrastructure and transportation. The urban transport system in Ghana is characterized by the congested central areas of cities, poor quality of service from public transport operators, high exposure to road accidents, and poor environmental standards (Kwakye and Fouracre, 1998). The Government of Ghana (GoG) and its development partners are supporting various interventions in Ghana's urban areas, particularly in the Greater Accra region, to ensure integrated and sustainable spatial development, coordination, and planning.

Transport and Development

In 2008, Ghana developed its National Urban Transport Policy, set within the framework of the Millennium Development Goals (MDGs) and Ghana's Growth and Poverty Reduction Strategy (GPRS), to guide the sector. The vision of the Policy is to develop an affordable, safe, and efficient urban transportation system that supports the overall development and competitiveness of Ghana's urban areas.

National Urban Transport Policy Goals:

a. Establish Ghana as a Transportation Hub for the West African Sub-Region.
b. Create a sustainable, affordable, and efficient Transport system that meets customer needs.
c. Integrate Land-Use Transport Planning, Development Planning, and Service Provision.
d. Create vibrant investment and performance-based management that benefits for public and private sector investors
e. Develop and implement comprehensive and integrated Policy, governance, and Institutional Frameworks.
f. Ensure Sustainable Development in the Transport Sector.
g. Develop adequate Human Resources and apply new technology.

(Source: National Urban Transport Policy; Government of Ghana, 2008).

In relation to the transportation policy, Ghana formulated a comprehensive National Urban Policy (NUP) in 2012 to promote a sustainable, spatially integrated, and orderly development of urban settlements to support rapid socio-economic development of Ghana (GoG, 2012). The NUP seeks to address some of the fundamental problems associated with urban development, including weak urban transportation planning and traffic management as well as land use disorder and urban sprawl.[7] The policy indicates that inefficient transportation and mobility in Ghana's urban centers are economically and socially costly. These costs make Ghanaian cities, especially Accra and Kumasi, less competitive while hindering mobility and access for urban residents and Ghanaian citizens.

The link between transportation infrastructure and economic development has always occupied a significant place in the development plans of less developed countries (LDCs).[8] As such, Ghana's vision is to provide an efficient, cost-effective, and sustainable transportation system that is responsive to the needs of society, supports growth and poverty reduction, and establishes Ghana as a transportation hub in the West Africa sub-region. Several projects have been developed to achieve these goals. The Ghana Urban Transport Project, developed in conjunction with the World Bank, was implemented between 2008-2014 and will be discussed in greater detail below. The Accra Urban Transport Project (AUTP), developed in 2016, seeks to contribute towards integrated transport and urban development solutions in Accra. The AUTP focuses on building infrastructure to improve accessibility, to reduce traffic delays in the project area, to promote efficient movement of goods and people, to boost trade and industrialization, to promote affordable transport services, and to improve livelihoods through job creation. Ghana is also developing a 40-year, long-term development plan that includes a national infrastructure plan and a spatial development framework to transform where Ghanaians live and work. The plan is expected to enhance the Accra and Kumasi city regions and other urban clusters through improvements in the transport network that integrate towns and cities. According to the Ghana Transport Sector Medium Term Development Plan, roads are the principal means of transportation in Ghana and expected to play a critical role in socio-economic development and integration of the urban area. Additionally, the AfDB is supporting the expansion of the Abidjan-Lagos Corridor, which connects five coastal economic capitals from Ivory Coast to Nigeria with the largest portion of road located in Ghana (AfDB, 2016). As recognized in these broader development strategies, answering the urban transportation and mobility puzzle has become one of the major challenges facing Accra, where rapid urbanization and spatial expansion requires urgent action.

B. Urban Transport Context

Urban Transport in Historical Perspective

It is useful to provide some context regarding the urban transport sector in Ghana to understand the historical legacies that led to the dominance of paratransit and foreshadowed present-day challenges for urban transport and mobility. The origins of urban passenger transport in Accra date back to 1927 with the introduction of ten Dennis buses by British colonial authorities of the Gold Coast (Okoye et al., 2010). As motorization increased towards the end of the colonial period, the Road Traffic Ordinance of 1952 was enacted to establish a licensing authority to register and license drivers, vehicles

[7] Transportation and land use are closely linked elements of urban development. Urban transportation systems impact growth patterns, economic activity, the environment, and quality of life.

[8] The incorporation of transportation in the development plans of these countries dates back to the colonial era. Investment in transportation was deemed an indispensable element in imperial schemes designed to evacuate natural resources from colonial territories (Njoh, 2000).

and manage traffic related to motor vehicle usage in the colony. This ordinance was replaced in the post-independence period by the Ghana Local Government Act of 1961, which led to the establishment of the Omnibus Service Authority (OSA) to develop infrastructural facilities such as bus terminals, buses, and rolling stocks for the movement of freight and passengers in Ghana's urban centers.

British colonial policy also laid out the city development and road infrastructure that shapes Accra. In the coastal cities of British territories, the road network typically consisted of a major trunk road from the central business district (CBD), leading out of the city to the provinces, spurring development in the industrial and port areas (Banjo and Dimitriou, 1983). Economic motivations led to the radial and concentric road network structure of Ghanaian cities, with a concentration of high-density activity at the hub, but limited road space. With emphasis on the city center, there is a deficit of east-west corridors, limiting mobility between residential and commercial areas (Addo, 2002).

Accra Central is bounded by Accra Ring Road and remains the most diversified economic area in terms of the concentration of industries, administration, marketing finance insurance, transportation, and tourism firms. These activities attract high levels of traffic, with an estimated one million passenger trips made daily in and out of Accra Central. These trips are dominated by the informal paratransit services known as trotro. Long commute distances between GAMA's peri-urban localities and Accra Central result in a relatively high use of motorized transport modes (98.5 percent), compared to non-motorized transport modes at 1.5 percent (Agyemang, 2017).

Kaneshie Market, Central Accra.

Regarding passenger transport services, there were three state-owned enterprises that operated bus services under the Ministry of Transport and Communication, which was responsible for their programs and operating budgets (Fouracre et al., 1994). These include the State Transport Corporation (STC), the City Express Service (CES) and the aforementioned OSA. The STC and CES provided mostly inter-urban service between regional capitals and other large urban centers or

between cities in neighboring countries. The OSA, constituted in 1969 under the Ministry of Local Government, offered services previously offered by the municipalities in its major cities: Accra, Kumasi, Cape Coast, and Takoradi. These bus services provided frequent, safe, and comfortable intra and inter-urban transport services. However, the companies were also characterized by financial losses, mismanagement, and increasing competition from the private sector. A large public sector and poor management, coupled with rising economic crises in the developing world during the late 1970s and 1980s, led to questioning the state's ability to direct development. Donor partners including the World Bank and the International Finance Corporation (IFC), critical of state practices recommended structural adjustment programs seeking to reduce the role of the government and encouraged privatization. Conditional access to loans in the 1980s required divesting state-owned enterprises including the OSA (Kwakye and Fouracre, 1998).[9] With the decline of these service providers, the informal or paratransit sector entered to provide *private* transport services in a gap-filling function. The GoG, at that time under the leadership of Jerry Rawlings, encouraged unionization of the paratransit sector and turned the operation of lorry parks or terminals over to the largest paratransit trotro union the Ghana Private Road Transport Union (GPRTU),[10] which secured a dominant position.[11] This decision further removed authority and revenue from local governments.[12] Thus, public transport transitioned to a privately-operated transport system that was empowered to contest public urban transport interventions.

Urbanization and Challenges for Urban Transport

The process of rapid urbanization that began in the mid-1980s contributed to urban expansion in Ghana's most prominent cities. While cities in developing countries typically have higher densities, urban expansion has led to the flattening of urban density, mimicking the sprawling pattern of developed cities (Cervero, 2013). Urban expansion in Accra is dramatic and seemingly uninterrupted, as the city absorbs peri-urban and rural land for mostly residential use. In Accra, sprawl is rendered more complex due to poor infrastructure and inadequate land use and transportation planning. Unplanned physical development is a major issue, including encroachment on public spaces such as roads and limited walkways, contributing to congestion and limiting mobility. As urban residents move further into peripheral areas, they increasingly require access to transportation options to facilitate their mobility into the city center in order to access economic opportunities and social amenities. Economic and political activity is concentrated in Accra's CBD, as the primary location of major companies and government offices (Agyemang, 2017). The CBD is also home to Accra's largest market and hosts a significant amount of formal and informal trade. The informal sector of the economy supports 70 percent to 80 percent of Ghana's labor force, suggesting that a significant amount of the population heads into the CBD daily to engage in economic activity. Urban sprawl has increased overall trip distances, pushing up the price of transport that implies an increasing cost

[9] Due to fiscal mismanagement and the pressure for structural adjustment, the GoG divested itself of its public investment in bus operations through the Economic Recovery Programme.

[10] Ownership of the terminals rests with the municipal assemblies, who have statutory power to establish, maintain and control parks and terminal facilities. However, the management was assigned to unions and bus companies leading them to compete for terminals rather than routes. Following this, a circular on the administration and use of lorry parks from the Ministry of Local Government (addressed to the Metropolitan and District Secretaries in 1989) recognized the GPRTU as the sole organization to control, regulate the movement and operation of all vehicles at lorry parks.

[11] The source of the unions' power stems from control of the terminals as the base for service operation, which was derived their power through government patronage (Fouracre et al., 1994).

[12] With unions collecting tax on 'behalf' of the GoG, the authority of the metropolitan and municipal governments was undermined by the recognition of the GPRTU and their role as terminal operators (Fouracre et al., 1994).

burden, particularly for low-income populations who are most dependent on the paratransit sector for mobility and access to these economic activities.

Rising Congestion in Accra.

The combination of a sprawling city with economic activity still concentrated in the CBD has resulted in severe congestion and intensified environmental degradation. Daily commutes have become increasingly difficult, with rising costs in terms of time lost,[13] trip connections, and fuel. NMT, primarily walking, is a low-cost, environmentally friendly option. However, the ability to rely on NMT is dependent on where urban residents live and where they access economic opportunity. On the supply side, there is very little attention paid to providing appropriate infrastructure to facilitate or encourage NMT. Regarding motorized transit, the primary modes of transport have both been private. First, the informal or paratransit system, in which approximately 70 percent of the population use trotros to move within the metropolitan area, is the largest modal share,. Trotros provide a relatively inexpensive service and are generally poor quality. A typical commute from peri-urban areas can include taking two or three trotros to arrive into the city center, with significant wait times as trotros do not move until they are filled with passengers. The second mode of private transport is the use of individual vehicles, which approximately 30 percent of urban and peri-urban residents utilize. As the middle class rises in Ghana, the desire to own cars is increasingly realized, demonstrating the status and behavior attributed to this progression in economic status.

Rising motorization and congestion,[14] coupled with poor inter-city and intra-city connectivity led to the introduction of Metro Mass Transit (MMT). Metro Mass Transit Limited was established in 2001 by John Kufuor, former President of Ghana, who directed the re-introduction of public transport in

[13] Morning and evening commutes often take a minimum of 2-3 hours, with congestion continuing throughout the day, reducing overall productivity.
[14] Motorization in Accra metropolitan area was high by African standards at 90 vehicles per 1,000 population as compared to 20-30 for Nairobi, Dar es Salaam and Addis Ababa (World Bank, 2007).

the metropolitan and municipal areas to ensure safe, affordable, efficient, and reliable movement of Ghanaians. Since then, the Government has been actively promoting public transportation. Metro Mass Transit Limited was officially incorporated and launched in 2003. In 2008 it had a fleet of 1,063 buses and was a major employer in the country. The MMT initiative was meant to reintroduce scheduled bus service into Ghana's most congested metropolitan areas, including Accra and Kumasi. However, as will be described below, this project became politicized in a struggle between powerful actors in the paratransit sector and the administration associated with this initiative. Following this attempt at reviving scheduled bus service, the GoG began the process of formulating the National Urban Transport Policy to serve as a framework for improving urban transport and mobility within and between Ghana's urban centers.

C. Urban Transport Reform

Stemming from the National Urban Transport Policy, the GoG in collaboration with the World Bank, the French Development Agency, and the Global Environment Facility launched the Ghana Urban Transport Project (GUTP). The GUTP sought to address institutional, management and regulatory issues to improve mass transit services and mobility in Ghanaian cities, with an initial focus on the two major metropolitan areas of Accra and Kumasi.

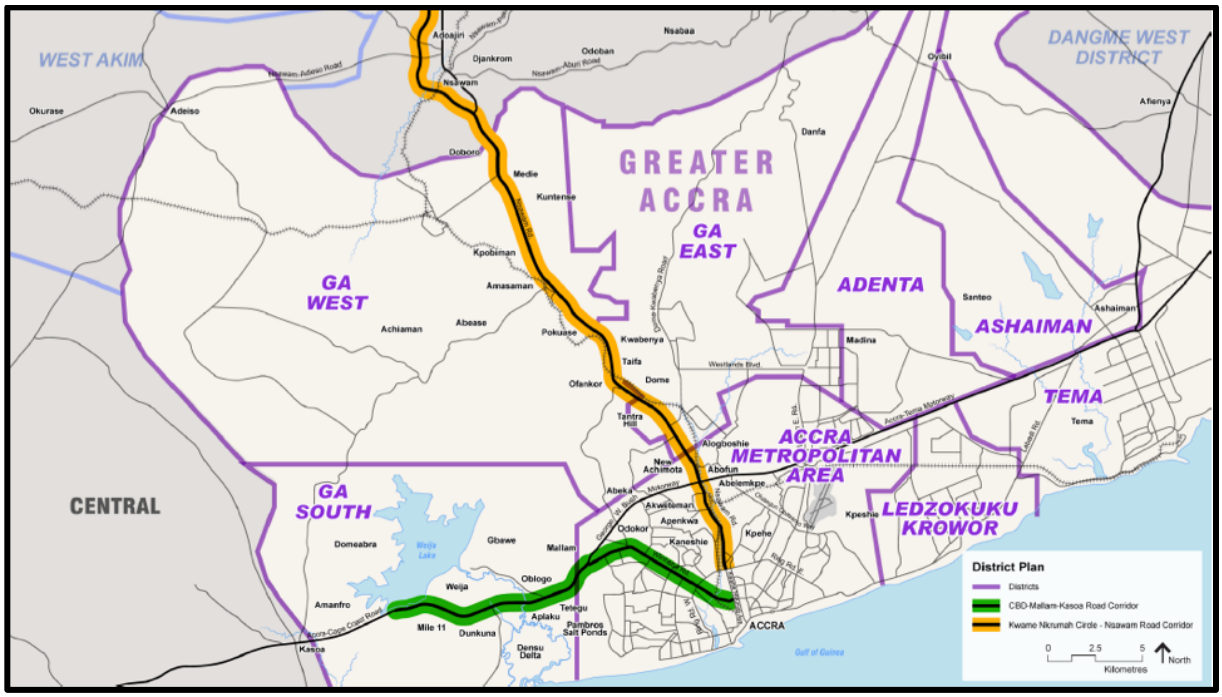
The **Ghana Urban Transport Project** was comprised of five components:

- *Component 1:* Institutional Development USD$13.6 million;
- *Component 2:* Traffic Engineering, Management and Safety USD$26.9 million;
- *Component 3:* Development of a Bus Rapid Transit System USD$46 million;
- *Component 4:* Integration of Urban Development and Transport Planning for Better Environmental Management USD$2 million;
- *Component 5:* Project Outcome Monitoring USD$1.5 million.

Among these components, the two most relevant for this research are the institutional component and the Bus Rapid Transit (BRT). The project sought to improve the institutional and regulatory framework that supports urban transport services. Proposed institutional arrangements included the establishment of the Greater Accra Passenger Transport Executive (GAPTE) to address cross-jurisdictional issues of regulation, development, and organization of urban passenger transport. The executive incorporated local government representation from metropolitan, municipal, and district assemblies (MMDAs). The GAPTE also has permanent staff to carry out functions including regulation, permit issuance, co-ordination of travel demand analysis, transport planning, and coordination of fares. A Center for Urban Transport was also proposed to stand as a center for both research and dissemination of information on sustainable transport practices as well as training and capacity building for specialists in the urban transport sector. In addition, an inter-ministerial transport committee was proposed to bring together all interested agencies in the development of urban transport in the country.

The BRT component of the project received the majority of attention and resources (Respondent, 2019). The selection of BRT was based on several factors, with the two most significant being the cost of BRT versus metro or rail interventions and the influence of policy diffusion through best practices. To facilitate the implementation of the BRT component, a scoping study was conducted to determine the main routes into the CBD experiencing extreme congestion. Five routes into the city from the

periphery were identified. The Kasoa line into the CBD was chosen for the initial pilot of the BRT, along Winneba and Graphic Roads. It is one of the most heavily burdened routes into the Accra metropolitan area. However, the projected costs were too high, and progress was halted in developing the infrastructure. [15] In 2012, the WB reviewed the GUTP project, deemed it unsatisfactory due to a lack of progress and cost overruns, and prepared to close the project. However, due to interest from the paratransit sector to participate as critical stakeholders in support of a multi-modal system inclusive of the BRT and trotros, the project was extended.



BRT Corridors as envisioned in the GUTP project.

The GoG and the World Bank agreed to move forward with the pilot, selecting a different corridor that runs from Amasaman to Achimota into the CBD. Some relabeled this pilot as a quality bus service, to acknowledge that the intervention was down-scaled due to the inability to secure the political and financial support to implement dedicated bus lanes. The Aayalolo bus service, (loosely translated as "let's go" or "together we go"), was launched in September of 2016. At the height of its functionality, the bus service carried 11,000 passengers daily. The buses used smartcards that could be pre-charged, were accessible for the disabled, and had features such as air-conditioning and USB chargers. However, in addition to the lack of a dedicated lane for the entirety of the corridor, there was limited infrastructure for stations, along with encroachment into existing infrastructure. The Aayalolo bus service was grounded in October 2018.

[15] One major concern was the economic cost on local commercial activity during the construction phase and once the BRT became operational. This area hosts Kaneshie market, the most vibrant commercial area in the CBD for formal and informal trade (Okoye et al., 2010).

Aayalolo Buses parked at Achimota Terminal.

D. Governance and Politics of Urban Transport

Mapping the Actors

As suggested, the governance and institutional arrangements guiding the BRT intervention are complex puzzles that can enable their success or lead to their failure. This section analyzes the actors involved, with emphasis on their ability to coordinate and negotiate the contested space of urban transport provision. The research revealed a high number of state agencies held diffused responsibility in implementing the BRT component of the GUTP project, suggesting significant institutional fragmentation. At the national level, there are a number of actors within the state including: The Ministry of Transportation – responsible for road transport; Ministry of Local Government, Rural Development and Environment – responsible for implementing decentralized public transport; Ministry of Finance and Economic Planning – with taxation authority; and the Ministry of the Interior – responsible for motor traffic and transport.

Still within the state, but beyond the ministerial level are the local assemblies: Accra Metropolitan Assembly; Tema Metropolitan Assembly; Ga East District Assembly; and Ga West District Assembly. At the start of the project there were only these four local assemblies in the Greater Accra area. However, over time, the state has continued to decentralize authority, splitting these assemblies into ten and ultimately 21 municipal jurisdictions, further fragmenting political and fiscal authority. These assemblies pass by-laws and issue permits for operators in the paratransit sector. The Town and Country Planning departments within the assemblies are responsible for land use planning and support the management of the terminals. In addition, there are environmental planning agencies that support considerations relating to the environment. The list of actors is extensive and continues to grow as

institutions are further split and recombined in new institutional arrangements. GAPTE,[16] as previously mentioned, is the parastatal formed to support the operation of the bus service.

Beyond the state, the key stakeholders driving urban transport in Accra are a heterogeneous array of actors and organizations in the paratransit sector. These actors can be segmented into three categories – owners, drivers, and unions or associations. Trotros are owned by an indeterminate number of individuals and families that use the paratransit sector as a secondary income strategy. Families save, or use remittances from family members abroad, to buy a vehicle and hire a driver. The middle class and civil servants including bureaucrats, military, and the police are all engaged in this practice. The drivers are usually lower income and hired by these middle-class families to operate the vehicles. However, the main stakeholders in the negotiations regarding urban transport are the paratransit unions of drivers and associations. These organizations are interest-based actors in society, self-organized, and setting and enforcing their own rules.

The major unions and associations include the:

- Ghana Private Road Transport Union (GPRTU), a national union reported to have up to 90 percent of the trotro and shared taxi business with regional clusters and local branches that organize routes;
- Ghana Cooperative Transport Association (GCTA), a national association organized along similar lines of the GPRTU with significantly less market share;
- Progressive Transport Owners Association (PROTOA), the only organization dedicated to the interests of owners; and
- Ghana Road Transport Coordination Council (GRTCC), an umbrella body of all transport operators in Ghana that represents the interests of road transport operators in negotiating with the GoG for transport tariffs and vehicle acquisition.

Among them, the GPRTU is the most dominate, and there are contentious politics between union members protecting their turf. The GRTCC is dependent on the willingness of the GPRTU to cooperate; otherwise, their ability to negotiate is severely undermined. Key concerns for these stakeholders include: the negative impact of the BRT on their operations due to dedicated lanes; being relegated to feeder routes that are particularly poor quality; and financing to secure higher quality vehicles to operate along all routes. As the GUTP progressed, the GPRTU and PROTOA were invited to form limited liability companies (LLCs) that are stakeholders in the Aayalolo bus company. This has created further fissures with other unions and associations that perceive themselves left out of this arrangement.

The Politics of Paratransit

Knowing the stakeholders is perhaps the first element of understanding the governance of urban transportation. However, a deeper level of understanding is necessary if transforming the urban transport system is the objective. Governance and decision-making over infrastructure and urban

[16] GAPTE was meant to work with the LLC and provide data collection and analysis to support the operation of the bus service, as well as negotiate with unions regarding management of the terminals. The Ministry of Transport and the MMDAs provide oversight are meant to facilitate coordination across districts. However, political will and capacity regarding urban transport and the Aayalolo service are not consistent due to inadequate training and electoral turnover.

transport systems is a contested space, where political struggle enters and stakeholders vie to attain their interests.

In this case, there is a strong political thread that shapes the evolution of urban transport in Ghana. Improving urban transport in Ghana was a priority for former President John Kufuor.[17] In 2003, he introduced MMT, the scheduled big bus service. This intervention was viewed by the GPRTU as competition and members of the union labeled them Kufuor buses, even going as far as insulting those who rode the buses, a form of social shaming (Agyemang, 2015). Following this intervention, the National Transport Policy and the GUTP were both signed under Kufuor's tenure, in an attempt to reassert public transportation service. Kufuor also undertook the first attempt at establishing BRT pilot under Metro Mass Transit in 2005 with a pilot line running from Adenta to Kimba in the city center. However, after two years of running the service diminished and his transport agenda was cut short after losing the 2008 election.[18] The National Democratic Congress (NDC) came to power under John Atta Mills the following year. This signaled a politically salient moment as the NDC was perceived to be more favorable to the paratransit sector, with its progenitor Rawlings who pushed unionization of the paratransit sector and turned over the terminals to the GPRTU. This political shift happened just as the GUTP and its BRT component entered the initial project implementation phase. With a sympathetic political party in power, the paratransit unions and associations sought to renegotiate their position under more favorable political circumstances, stalling implementation of the project.

As the 2016 election approached, the NDC administration under John Mahama sought to project demonstrable wins to the public, i.e. relieving rising congestion, reducing commutes, and facilitating economic growth. They pushed the process to procure 240 high quality buses from Scania, a Swedish company, at a cost of USD$61.6 million and were able to launch the Aayalolo in September 2016. Despite deploying the Aayalolo bus service, alternately called Mahama buses, the NDC lost the election. Under the current administration of Nana Addo Akufo-Addo and the NPP, the buses operated until October 2018, when the buses were grounded due a number of factors including financial insolvency of the system, lack of ownership due to institutional fragmentation and lack of political will. The NPP administration continues to politicize the bus system, using it as a tool to highlight potential graft under the previous government. In addition, they are hesitant to engage with Aayalolo or Mahama buses as it would be seen as building on the work of a political opponent. One of our respondents lamented, *"Just as we took off the NDC lost power. Whenever there is a change in government, the new government wants to do some 'editing' of previous projects,"* (Respondent Paratransit Association, 2019). Indeed, the NPP government is currently questioning decisions and investigating the procurement process supporting the Aayalolo bus service. Thus, the Aayalolo is caught in the political crossfire and urban residents who once benefited from the service have returned to private vehicles and trotros to address their mobility needs.

[17] Kufuor is a member of the National Patriotic Party (NPP), which was perceived to advocate the formalization of informal service provision.

[18] The pilot BRT enjoyed initial success characterized by high ridership. However, compliance with the right of way provision was rarely enforced, leading to downgrading the BRT (Agyemang, 2015). In this capacity, the buses were permitted to collect passengers in between stations, like trotros operators, further diminishing the efficiency of the service.

E. Findings and Policy Implications

From this discussion, what do the attempts at BRT, as the primary urban transport intervention in Ghana, tell us about transforming urban transport and mobility? The Accra case illustrates complex and compounded challenges. One aspect, specific to this case, is the relative strength of the paratransit unions and associations. These organizations, and the GPRTU in particular, exemplify contestation between the state and societal actors – otherwise framed as the public and private sectors. As private-sector service provision filled the space left from early scheduled bus services provided by state-owned enterprises, their position became entrenched economically and culturally. On the economic side, the GPRTU gained control of terminals or lorry parks, which shifted revenue away from local authorities into the coffers of the union. Administratively, this diminished the power of local governments to provide oversight to the paratransit sector, ceding public transport to private service provision. Culturally, urban residents became accustomed to trotros as their primary mode of mobility. The flexibility of these services allows commuters to board and disembark where needed, and importantly for those going to markets – specifically market women, there is the ability to transport goods. Introducing urban transport interventions in this context is thus perceived as a challenge to the dominance of the paratransit sector and a repudiation of a culturally and economically appropriate mechanism. The unions and associations primarily represent the interests of drivers; however, the owners of trotros are also directly affected. As stated, trotro ownership is often a significant element of livelihood strategies for the middle class. Thus, any urban transport intervention that disrupts this strategy will be challenged. There is general consensus to reframe the transformation of urban transport: rather than moving from informal to formal services, there is broad recognition of the potential for multi-modal urban transport. However, the question is how to reach this objective. In addition to the modalities themselves, i.e. mini-buses and big bus service, there is also the question of hybrid ownership. Thus, a significant finding of this research is the importance of institutional arrangements. How does one integrate public and private urban transport ownership of service provision?

The Accra case also demonstrates significant and pernicious challenges with implementation. Ownership of the GUTP project and the BRT element was complicated by high levels of institutional fragmentation. Administratively, as illustrated in the section that outlines the public-sector actors, there were a multitude of national and local level agencies engaged in the project. While such an intervention does require integration of various elements of the state, there was a clear lack of ownership and coordination. An inter-ministerial committee was suggested but was not operational for the full life of the project. A center for urban transport to produce research and guidance for appropriate policies was also proposed, but never enacted. Politically, ownership and guidance of the GUTP project and the BRT intervention were closely aligned with political party priorities. Despite the historical commitment of the NPP to improving urban transport, the current NPP administration seems less interested in taking up the Aayalolo project, which is viewed as a win for the political opposition. Political will is necessary for any intervention to achieve success, but whether the political will is tied to a short-term project or a larger, long-term vision will determine whether it is sustainable. In this case, the short-term politicization and focus on electoral victories is undermining the reorganization and revival of the Aayalolo bus service. In addition to the questions of institutional arrangements, are those of institutional practice. This case also demonstrates the poor regulatory environment, weakened overtime as local government authority was ceded to paratransit unions; and the severe lack of enforcement. This is evidenced in the inability to maintain right-of-way in the initial

BRT pilot from 2005,[19] and the inability to negotiate a dedicated bus lane for the Aayalolo corridor. The project also struggled with the technical and financial elements including: how to structure the bus service operation in terms of timing and connecting feeder routes; financing in terms of fees; and the need for subsidies to maintain the service. These latter elements are not addressed in great detail in this research but are significant factors that contributed to the grounding of the Aayalolo bus intervention.

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[19] One respondent suggested that the lack of political will and enforcement for the dedicated buses lanes is partially due to the reality that traffic officers themselves often own trotros – suggesting a disincentive to reduce their mobility in favor of the Aayalolo bus service.

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Acronyms

African Development Bank (AfDB)
Bus Rapid Transit (BRT)
central business district (CBD)
City Express Service (CES)
Ghana Cooperative Transport Association (GCTA)
Ghana Private Road Transport Union (GPRTU)
Ghana Private Road Transport Union (GPRTU)
Ghana Road Transport Coordination Council (GRTCC)
Ghana Urban Transport Project (GUTP)
Ghana's Growth and Poverty Reduction Strategy (GPRS)
Government of Ghana (GoG)
Greater Accra Passenger Transport Executive (GAPTE)
Gross National Product (GNP)
International Finance Corporation (IFC)
less developed countries (LDCs)
limited liability companies (LLCs)
Metro Mass Transit (MMT)
metropolitan, municipal, and district assemblies (MMDAs)
Millennium Development Goals (MDGs)
National Democratic Congress (NDC)
National Patriotic Party (NPP)
National Urban Policy (NUP)
Omnibus Service Authority (OSA)
Progressive Transport Owners Association (PROTOA)
State Transport Corporation (STC)
The Accra Urban Transport Project (AUTP)
World Bank (WB)

3.2 DAR ES SALAAM, TANZANIA

A. Development Backdrop

Tanzania, with 54 million citizens, is the largest country by size and population in East Africa, and one of the most populous on the continent. Only about one-third of Tanzanians live in cities today, but the country's rate of urbanization, at 5.2 percent, is one of the highest in the world. The share of urban population increased from 18 percent to 27 percent between 1990-2012. With rapid urbanization half of the population is expected to live in major and secondary cities by 2050. Tanzanian cities already account for the majority of the country's physical, financial, and technological capital. Economic activities in urban areas contribute approximately half of the country's GDP. Dar es Salaam, Tanzania's economic hub and former colonial capital, has an estimated population of approximately six million people. The city accounts for approximately 40 percent of the urban population and is the third fastest growing city in Africa at an average rate of 5.8 percent annually from 2002-2012 (World Bank, 2017). It is expected to become a mega city with more than ten million people by 2030. A historically significant port city serving Indian Ocean trade routes before the colonial period, the logistics of transportation have always been important to Dar es Salaam.

Transport and Development

Tanzania has a number of plans to achieve its goals of economic transformation and social development. Tanzania's Development Vision 2025, developed in 1999, aims to transform Tanzania into a middle-income country by 2025. MKUKUTA, the strategy for growth and poverty reduction elaborated in 2005, has its origins in the MDGs and their focus on economic growth and improving governance. These guiding strategies towards Tanzania's development recognize the significance of improving infrastructure and transport systems to facilitate economic growth and transformation. As the populations of Tanzania's major cities – and particularly Dar es Salaam – have expanded, the infrastructure network has become increasingly inadequate. Concurrently, as incomes have begun to rise, so has the import of vehicles. The number of cars in Dar es Salaam doubled between 2002 and 2008 from 19 to 43 cars per 1,000 inhabitants. Rising motorization has contributed to increasing traffic congestion, with the most acute periods during peak hours. In addition to traffic congestion. Tanzania has one of the highest rates of traffic fatalities in Africa.[20] While some increase in motorization is likely with rising incomes, international evidence suggests that the built environment and accessibility significantly influence vehicle ownership and usage. Public transit investments can help avoid being locked into a high-carbon, automobile-oriented city in the medium to long-term. The Government of Tanzania (GoT), developed its National Transport Policy and Strategy (2003) and a Road Safety Policy with these objectives and concerns in mind.

B. Urban Transport Context

Urban Transport in Historical Perspective

The socialist legacy of Julius Nyerere has dominated Tanzania's economic and social policies following the struggle for independence from the British. Nyerere was elected to be Tanzania's first president in 1964, and his political parties have won every election held after independence in 1961, providing

[20] Vulnerable road users – pedestrians, cyclists, and drivers of two and three wheelers – constitute 64 percent of road users killed (World Bank, 2017).

political continuity. Ujamaa, or 'familyhood,' formed the basis for Nyerere's socialist economic and social development strategy, becoming codified in the Arusha Declaration of 1967. His policy of "villagization" encouraged economic activity and investment away from urban areas towards the agricultural hinterland, in an effort to minimize migration to Dar es Salaam. As part of this policy, the administrative capital was relocated from Dar es Salaam to Dodoma in 1973,[21] a small market town at the time. Nyerere and his counterpart in the newly independent Zambia, Kenneth Kaunda, sought to spur the economic development of agricultural regions in southwestern Tanzania and northeastern Zambia (Kasanda, 2014). In support of this objective, the construction of a regional railway linking Dar es Salaam to Kapiri Mposhi in Zambia was envisioned. Operated by the Tanzania-Zambia Railway Authority (TAZARA), the TAZARA Railway was constructed between 1970 and 1975, financed and supported by the Chinese. The Tanzanian government also established a public authority in charge of providing urban transit within Dar es Salaam, Shirika la Usafiri Dar es Salaam (UDA) in 1974.[22]

As a consequence of villagization and disinvestment in urban areas, Dar es Salaam was ill-prepared for the rapid growth of the city, which took place in the period of economic liberalization that followed Nyerere's resignation in 1985. Government statistics reported that, as of 2013, only 19 percent of national roads and two percent of district roads were paved. Formal public transport in Dar es Salaam declined from its height in 1975 of 257 buses to only 12 buses in service in 1998 (Mkalawa, 2014). In the growing gap left by formal transit authorities, informal paratransit operators came to dominate transit service provision. The evolution of the dala dala system as the main operators of the public transport in Dar es Salaam City started in 1983 when they were first officially licensed. The dala dalas were licensed as subcontractors of the UDA, which had an exclusive license for operating public buses in the city. The services by the UDA had significantly deteriorated and were meeting only about 60 percent of demand causing long queues at stations and overcrowded buses. The management of dala dalas was thereafter taken over by the Central Transport Licensing Authority in 1991 and thereafter, the Surface and Marine Transport Regulatory Authority (SUMATRA) in 2004. In 2011, there were 6,600 dala dala buses operating along 482 routes in Dar es Salaam. Dala dalas, offered cheap rides to commuters travelling to and from the CBD, where economic activity is concentrated. Dala dalas can be owned by a company or individual. Owners may purchase a single dala dala as a means to supplement their main source of income, or they may take the form of a transport company operating a fleet of dala dalas to serve as their primary business. As with paratransit service in many developing cities, dala dalas compete for passengers because their revenues are collected per passenger transported, with the expectation that dala dala drivers will pay owners a fixed fee per day for driving the dala dala. In 2014, 62 percent of trips were made using dala dalas. Although they have become an indispensable mobility option for Dar es Salaam's residents, dala dalas are also known for being unreliable, unsafe, and contributors to traffic congestion and pollution in the city. By 2003, UDA only served ten percent of the market, with dala dalas capturing the remaining 90 percent due to their relative availability, flexibility, and efficiency (GoT, 2003).

[21] Moving the administrative capital, which was a trend in a number of countries in a decolonizing world, was both a symbolic repudiation of the country's colonial past, a means to spur the economic growth in underdeveloped regions and intended to minimize the dominance of the coastal urban capital.

[22] Before the UDA, the public transport operations were under the monopoly of a British private company—Dar es Salaam Motor Transport—from 1947 to 1974 when it was nationalized.

Along with urbanization, Dar es Salaam is facing worsening traffic congestion, which is threatening its economic and social development prospects. The land-use pattern of Dar es Salaam follows the predominantly radial road network emanating from the city center.[23] The existing formal road network in the city comprises approximately 1,150 kilometers of which only 450 kilometers are paved. In the absence of planned urban expansion, a lack of reliable transit options, and rising population, Dar es Salaam's sprawl is exacerbating the city's transit challenges. The majority of formal jobs are concentrated in the urban core, however outside of the urban core are small, disconnected neighborhoods. Dala dalas compete with each other in congested traffic for passengers. During peak hours a typical one-way commute by dala dala from an informal settlement on the urban periphery could take two to three hours. UDA improved the number of buses in operation to 30, but mostly for inter-urban and urban-rural routes. Although the current motorization rate is low, with rising incomes and without options for reliable and convenient public transit, there are real concerns that an influx of private vehicles will inhibit mobility options in a city where the infrastructure is already overburdened.

C. Urban Transport Reform

In 2003, the Ministry of Communications and Transport published Tanzania's National Transport Policy, which assessed the state of transportation in the country and laid out policy directions to achieve objectives that would support the nation's socio-economic development. The policy addressed all modes of domestic and international transport active in Tanzania at the time, which it described as "characterized by high cost, low quality services due to…the existence of high backlog of infrastructure maintenance and rehabilitation, inadequate institutional arrangements, [and] laws," (GoT NTP, 2003). The policy outlines the challenges that urban transport faces, such as congestion, inadequate infrastructure, the proliferation of private vehicles over public transport and non-motorized transit, and weak connections between transport networks and land use planning. Recommendations to address these challenges included increasing the participation of the private sector in the provision of transportation services, encouraging non-motorized transport and mass transit over private vehicles, improving service levels by creating specific routes with segregated access, and examining available technologies for more efficient services.

In response to the national policy, the Dar es Salaam City Council (DCC) decided to embark on the implementation of a BRT as the core of their strategy to alleviate urban traffic congestion. Their vision was to develop a "modern public transport system at reasonable cost to the users and yet profitable to the operators using quality high capacity buses which meet international service standards, environmentally friendly, operating on exclusive lanes, at less traveling time," (NTP, 2003). While the BRT project was initially conceived at the city-level, the national government stepped in to take over the development and implementation of the BRT. The planned BRT envisions six phases for a total of 137 kilometers of BRT corridors. The conceptual design was completed in 2007, and the GoT set up the Dar Rapid Transit Agency (DART) as the executive transport authority for developing the BRT system. The DART mission is "to provide quality, accessible and affordable mass transport

[23] Plans provide for ring roads and two of them (Nelson Mandela Expressway and Kawawa road) are already completed. The two ring roads have contributed significantly to the improved operation of passenger travel by public transport from the northern suburbs to the southwest industrial area and suburbs.

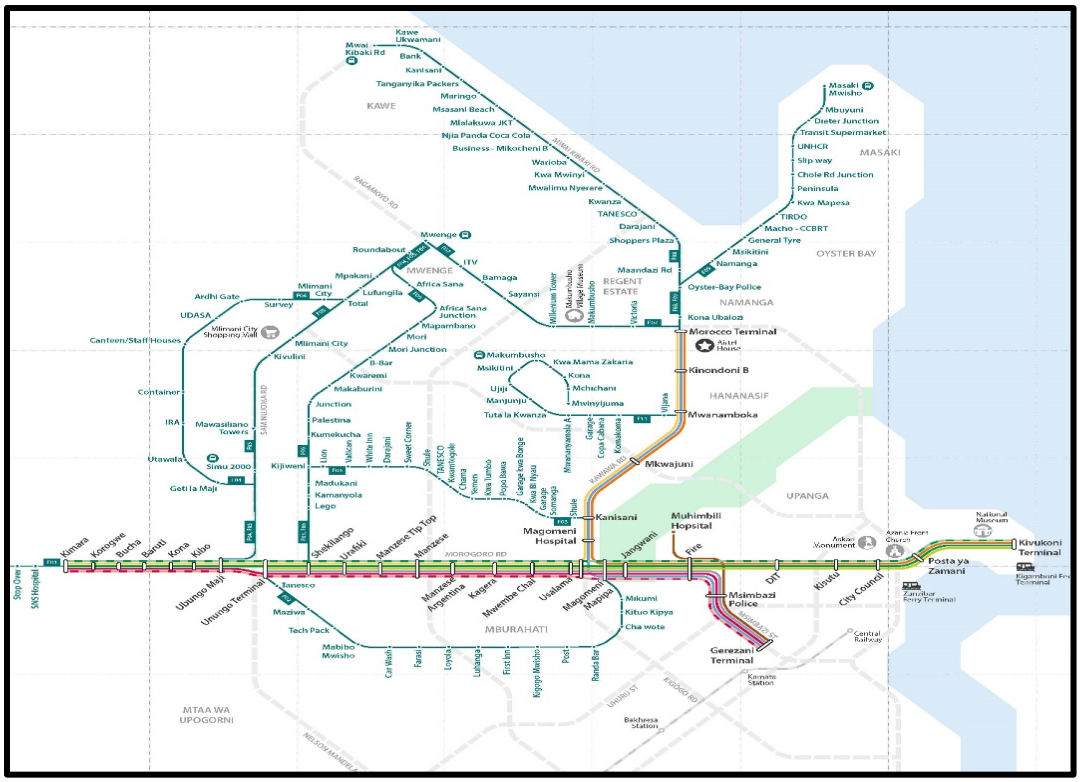
system for the residents of Dar es Salaam which will subsequently enable poverty reduction, improve standard of living, lead to sustainable economic growth and act as a pioneer of private and public investment partnership in the transport sector in the City." It envisions a high-quality, affordable public transportation system operating on specialized infrastructure with adequate incentives to offer affordable mobility, a sustainable urban environment, and a better quality of life for the urban population, especially the poor. Construction of the first phase of service began in 2012. The development of the system was incorporated into the Dar es Salaam Urban Transport Master Plan, which guides developments up to the year 2030.

DART Infrastructure.

The first phase of DART's BRT, referred to locally as *mwendo kasi* service (roughly translated from Swahili as "high-speed") was launched in 2016. Transit infrastructure,[24] 20.9 kilometers of corridor, for the main trunk line was constructed along Morogoro Road, connecting Dar es Salaam's central business district with the western suburb of Kimara in the Kinondoni district. The two western terminals – Kimara and Ubungo – are connected to three terminals in and near the CBD – Morogoro, Gerezani and the Kivukoni. Buses run along dedicated rights of way along the center of Morogoro Road, and each station includes a passing lane that allows for express service between Kimara in the west and Gerezani and Kivukoni in the CBD. In addition to dedicated lanes for buses, the entire length of the trunk route has also been outfitted with sidewalks and bicycle lanes. Stations are built on the median and can be accessed by crosswalks at minor crossings and are wheelchair accessible with pedestrian footbridges at terminals and major crossings. Commutes from distant residential neighborhoods to downtown Dar shrank from two hours to forty-five minutes. Respondents from unserved communities indicated their desire for DART to expand its operations to their communities and inquired when such a service would begin (Respondents, 2019). Private car owners were opting to take DART in favor of driving their own vehicles. Some of these positive first impressions, however, began to give way as service levels began to drop and the system became overburdened with the volume of commuters that tried to use it. Stations are equipped with tap-and-go readers on turnstiles, though these are not currently operational. The implementation of infrastructure for the

[24] The infrastructure that was constructed meets all the requirements for it to receive ITDP's gold standard certification for BRT systems.

second phase of the BRT system is ongoing with development and implementation for the third and fourth phases of the BRT are at the early stages.



DART Map.

D. Governance and Politics of Urban Transport

As in the case of Ghana, there are a number of external actors that support urban transport reform in Dar es Salaam. The development of DART was supported by the Institute for Transportation and Development Policy (ITDP), an international organization that promotes the diffusion of the BRT, with a grant from the UN Environmental Programme. The first phase of the BRT was financed under the Second Central Transport Corridor Project funded by the World Bank.[25] Their stated objective is to support Tanzania's economic growth by providing enhanced transport facilities that are reliable and cost effective, in line with MKUKUTA. The infrastructure for the second phase of the BRT is supported through funding by the African Development Bank in partnership with the Africa Growing Together Fund. The implementation for the third and fourth BRT phases is to be supported by the Dar es salaam Urban Transport Improvement Project (DUTP), initiated by the World Bank in 2017. The implementing agency for these projects is TANROADS, which manages the national road network on behalf of the Ministry of Works, Transportation and Communication (MoWTC).

In addition to external actors and the national state, the local government of Dar es Salaam has a role to play, though the structure is complex. There are five municipalities, each led by a Mayor, and the DEC acting as the apex coordinating body. Each municipality has its own authority and reports

[25] The World Bank was interested in mass transit investments found that improving urban accessibility is an important building block to increasing urban productivity (World Bank, 2017a).

directly to the President's Office, Regional administration and Local Government (PO-RALG), leaving the DCC with no direct authority over municipal activities. The governance of the transportation sector is equally fragmented with 14 agencies, each with overlapping responsibilities on the same network. The Transport Master Plan of 2008 recommended formation of the Dar es Salaam Urban Transport Authority (DUTA) as the lead agency for a sustainable transportation system, but this has not come to fruition. In the paratransit sector, associations were formed to support their operations, these include the Dar es Salaam Commuter Bus Owner Association (DARCOBOA) and the Association of Transporters in Dar es Salaam (UWADAR).

Usafiri Dar es Salaam Rapid Transit (UDA-RT) is a special purpose company formed specifically to act as a service provider for DART. It comprises of UDA – the agency that offered public bus service prior to the establishment of DART – and the two associations of dala dala owners – DARCOBOA and UWADAR (ITDP, 2016). The consortium was set up such that 30 percent of its shares are held for the dala dala owners, allowing them a period of three years to buy those shares and take minority ownership in the company. Many of these dala dala owners continue to hire drivers to operate their dala dalas on other routes, although roughly half of UDA-RT's drivers are former dala dala drivers. According to ITDP's general recommendations and World Bank requirements for funding BRT systems, transit authorities are required to have multiple private-sector service providers operate each phase of a BRT project (Hall, 2015). DART was structured according to these best practices and has made attempts to procure additional private service providers. However, those efforts have proven unsuccessful due to complications with the public procurement process. Multiple rounds of procurement have been required so far to move the contract in a direction that is mutually acceptable to DART and to new bidders.

UDA-RT's original service contract was only valid for two years, in which time DART was expected to have issued a competitive tender for a more permanent contract. The interim contract has lapsed but in the absence of a new procurement, UDA-RT continues to operate underserviced lines, contributing to the decline of DART's service. While Phase I of the system is designed for 305 buses to carry passengers along the trunk route, UDA-RT is currently running only 140 buses, per its original allowance. UDA-RT has shouldered criticism for failing to provide adequate service on the routes of the first phase of the transit system; for instance, dangerous overcrowding on buses is of concern. To supplement its capacity, it ordered an additional 70 buses from China, but the government has held these buses up in port with the justification that it would be unfair to a future service provide to allow UDA-RT to operate more than its allocated share of buses. UDA-RT claims that it is simply attempting to provide better service to passengers and is being prevented from doing so by the government.

In addition to the identification of additional service providers, the model for compensating UDA-RT service further complicates the provision of good quality transit to Dar's residents. UDA-RT is responsible for managing several functions of the public-private partnership that was established. It undertook contractual arrangements with Tanzanian ICT provider Maxcom to collect passenger fares, who passed them on to a fund manager. This fund manager is responsible for paying a flat fee per line that it operates to UDA-RT from passenger revenues and for transferring revenues to DART to pay back the World Bank loans. This payment model does not incentivize UDA-RT to add buses to its fleet. Instead, efficiencies are realized by keeping operating costs low by filling a fewer number of buses with as many passengers as possible. DART is exploring the possibility of changing the compensation model with the procurement of a new service provider so that operators are paid per kilometer travelled. Doing so removes the pressure from operators to run fewer buses and incentivizes

them to provide the frequency of service needed based on the number of passengers in the system. These changes are, however, contingent on DART's ability to procure a second service provider for Phase 1.

E. Findings and Policy Implications

Tanzania has succeeded in providing improved transportation service to the residents of Dar es Salaam. This fast-growing city with an infrastructure deficit, was able to develop the DART system and significant infrastructure to improve mobility. A key characteristic for the success of a BRT system is the enforcement of the dedicated right of way for the rapid buses. In Dar, DART and the traffic police have made particular efforts to ensure that the travel lanes remain free of mixed traffic. When the system first opened, traffic police monitored the travel lanes and issued tickets with steep fines to offenders. The level of enforcement conditioned drivers to understand that the bus lanes are off-limits, allowing buses to travel unobstructed even during peak hours. Exceptions are made for police and emergency services, whose vehicles are allowed to use the lanes. Politicians' motorcades are also allowed through; this has produced mixed reactions, including relief that roads do not have to be blocked off to accommodate the motorcades, as was the custom in the past. Motorcyclists, however, whose behavior is difficult to regulate, can often be seeing dipping in and out of the dedicated lanes. This is not without impact to bus service or traffic safety, as crashes between buses and motorcycles have increased.

Foreign delegations from across the continent have been hosted by DART to demonstrate the successes that this project has achieved. However, there are challenges evidenced by DART's implementation. Constructing the infrastructure was only a part of the program to build a new public transit network; DART also needed to procure a service provider to operate bus lines. More attention was given to the former than the latter, and DART's infrastructure developed faster than the tendering process to determine the concession contracts. As a result, construction on Phase 1 neared completion without the selection of an operator. The political administration had a large stake in ensuring that service become operational as soon as possible, as it campaigned on a platform of providing better urban transport to the residents of Dar es Salaam. With the impending national elections in 2015 proving to be more competitive than expected, there was pressure to find an operator quickly to show that progress was being made. There was additional concern that the newly constructed BRT infrastructure, particularly the dedicated lanes, would be difficult to enforce if left unused. Consequently, without a competitive tender, DART signed a contract with UDA-RT as the "interim service provider." While the construction of the physical infrastructure was executed and operationalized, the lack of a clear process to procure a service provider constrained the performance of the system and handicapped its outcomes. An additional institutional concern is the removal of authority from the local to national level, which may also reduce the ability to integrate DART's objectives and implementation with the broader spatial development and land use planning. The continued dominance of a single political party, the Chama Cha Mapinduzi (CCM), has provided continuity to the overall project as it expands from phase to phase. However, the lack of political contestation, or pressure, might contribute to the slow pace of improving the public-private partnerships with potential service providers.

Another consequence of the BRT intervention is the displacement of dala dala routes from the main arteries in the city along which DART operated. Although they are not banned from Morogoro Road in its entirety, dala dalas are no longer allowed to move along the route from Kimara to Kivukoni. Displaced dala dala routes have begun to find new configurations in neighborhoods adjacent to and

farther away from the DART corridor. As a result, instead of seeing an overall reduction in traffic congestion, it is seemingly being redistributed to other parts of the city that are even less equipped to handle increased road traffic than the city's main thoroughfares. Furthermore, complaints have arisen about the displacement of dala dala drivers who depend on transporting passengers for their livelihoods. By no longer being able to serve the most heavily travelled routes in the city and in the absence of a safety net from dala dala owners, drivers' livelihoods are being diminished. That said, the operational arrangement with UDA-RT has enabled some degree of participation of former dala dala drivers in DART, offering more stable employment, incomes, benefits and job training.

The strong influence of donor agencies and international experts appears to be guiding the realization of the first and future phases of the project, but the suitability of these best practices for poor and vulnerable populations in Tanzania is open to question. The introduction of DART disrupts patterns of mobility that low-income groups have come to depend on to access opportunity. Dala dalas are no longer able to transport passengers directly to and from the most travelled corridors in the city, reducing the accessibility of those that already found urban transport challenging. The most affordable mode of transport in the city, dala dalas cost approximately 400 Tanzanian Shillings. DART has been designed to not rely on subsidies from the GoT to cover its operating expenses, other than an exploration of a targeted pilot subsidy for the urban poor. Instead, DART must price its tickets to meet its costs (World Bank, 2017). Therefore, the initial price of a DART ride was set at 650 Shillings,[26] representing an increase of more than 60 percent over the cost of a dala dala. While the premium for a DART ticket can be justified by the time savings it offers, criticisms have arisen about the ability of low-income segments of the city to pay for this service while they suffer new limitations to dala dala service. Furthermore, DART may be forced to increase its ticket prices in the future if it needs to continue covering its costs without subsidy,[27] even though riders may be intolerant of price increases without an improvement in the reliability of the service. With physical capacity of the system constrained by the low number of buses currently being operated, it is likely that rate hikes will be required in order to cover budget gaps. While the need for new mobility options in a fast-growing city like Dar es Salaam is clear, the country's experience with DART shows that governance mechanisms and institutional capacity must grow alongside physical infrastructure in order for the benefits of the intervention to be realized by those for whom it is being developed.

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[26] With cashless smart cards no longer being employed on the system due to contractual complications with providers of the ticketing solution, there is no way to adjust fares based on the distance travelled. All commuters on the trunk route pay the maximum fare of 650 Shillings for new each trip.

[27] Consistent with conditions for World Bank lending to the project, DART has attempted to operate without government subsidy (Rizzo, 2019) – a feat that almost no public transit system in the world has been able to accomplish.

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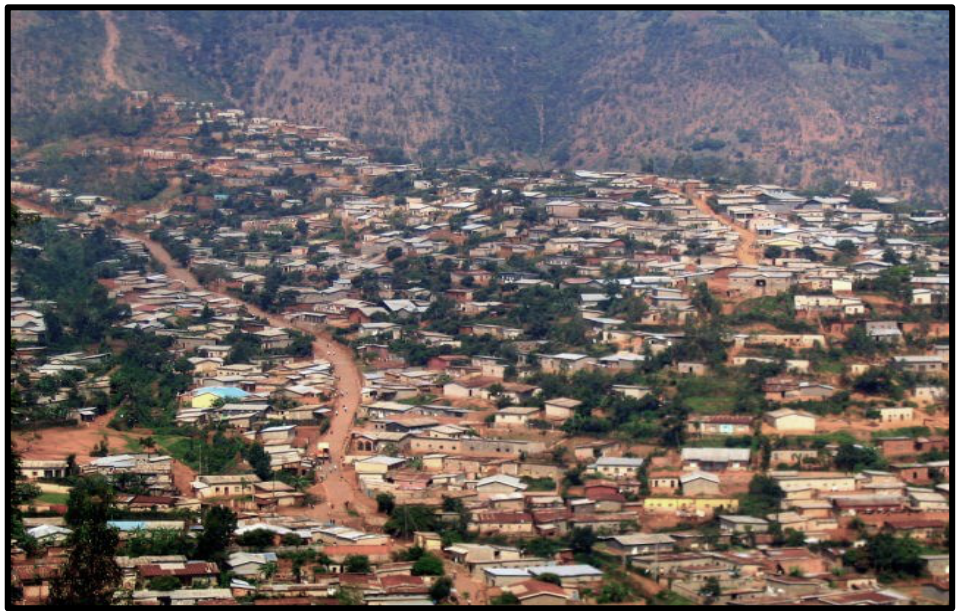
Acronyms

Government of Tanzania (GoT)
Tanzania-Zambia Railway Authority (TAZARA)
Shirika la Usafiri Dar es Salaam (UDA)
Dar es Salaam City Council (DCC)
Dar Rapid Transit Agency (DART)
Institute for Transportation and Development Policy (ITDP)
President's Office, Regional administration and Local Government (PO-RALG)
Dar es Salaam Urban Transport Authority (DUTA)
Dar es Salaam Commuter Bus Owner Association (DARCOBOA)
Association of Transporters in Dar es Salaam (UWADAR)
Usafiri Dar es Salaam Rapid Transit (UDA-RT)
Surface and Marine Transport Regulatory Authority (SUMATRA)
Dar es salaam Urban Transport Improvement Project (DUTP)
Ministry of Works, Transportation and Communication (MoWTC)
Chama Cha Mapinduzi (CCM)

3.3 KIGALI, RWANDA

A. Development Backdrop

Rwanda has made substantial progress in economic, environmental, human, and social development after the devastation of the 1994 genocide. Government policy has focused on building institutional capacity, good governance, and supporting economic growth, resulting in an annual growth rate of eight percent between 2000 and 2013 – a 170 percent increase in real GDP – making the country among the ten fastest-growing economies in the world. Rwanda is one of the densest countries in Africa and one of the least urbanized, with approximately 17 percent of its 12 million people living in urban areas (World Bank, 2016). The urban population has steadily been growing over the past several decades – from two percent in 1960 to 16 percent in 2012. With an annual urbanization rate of 4.1 percent, the total urban population is expected to reach close to 30 percent by 2030 (NUP, 2015). Despite progress, access to basic infrastructure is a challenge in urban areas, due in part to the high cost of infrastructure, challenging topography, and inadequate urban planning. Rwanda's high population density, scattered settlements, hilly topography, and low urbanization rates have put pressure on arable land and constrain the transition from subsistence to more productive large-scale commercial agriculture. The government views its low urbanization rates as an opportunity to create a more efficient urban system, and urbanization as a key driver to achieve the 11.5 percent annual economic growth needed to reduce poverty and move the country to middle-income status by 2020.[28]



Topography of rolling hills in Kigali.

[28] Despite being landlocked and possessing limited natural resources, Rwanda has emerged as a regional leader chairing the African Union and pushing for greater integration in the East African Community. It has also sought to establish itself as an economic player, particularly becoming a hub for ICT.

Transport and Development

Following the genocide, development needs were particularly acute given the destruction of infrastructure. The rate of rural-urban migration also began to increase, putting a strain on already limited infrastructure and service provision. Local governments did not have the resources or capacity to manage and to provide for basic services. In response to this context, the Rwanda Urban Infrastructure and City Management Project, supported by the World Bank from 2006-2009, was developed to increase access to urban infrastructure and services in the primary city of Kigali and two secondary cities. To address the broader vision for development, Rwanda prepared the Economic Development and Poverty Reduction Strategy (2013-2018) to transform Rwanda's economic geography by facilitating urbanization and promoting secondary cities as poles of growth. Rwanda's National Strategy for Transformation set an ambitious target of doubling the urbanization rate to 35 percent by 2024 and of directing urban hierarchy and development across Kigali and six secondary cities. A new urban development project approved in 2016 has recently begun to build on this effort. In collaboration with Surbana Jurong, a Singaporean firm, Rwanda has articulated a number of transportation policies to support urban growth: the Public Transport Policy and Strategy (2012), the Transport Sector Master Plan for Rwanda (2013), and the Kigali Transport Master Plan (2013). Transportation plays a key role in Rwanda's plans for rapid urbanization outlined in the National Urbanization Policy (2015).

B. Urban Transport Context

Urban Transport in Historical Perspective

In the wake of the genocide, security and the adequate provision of public services became key issues for rebuilding the country. All transport services grapple with the topography of Kigali, a city dominated by rolling hills that pose numerous transportation challenges. In addition, only 17 percent of the 732-kilometer road network was paved as of 2013. The combination of challenging terrain lack of paved roads, and low car ownership (under two percent in 2013), means that the overwhelming majority of Kigali residents use NMT as their primary means of mobility. As such, congestion has yet to take over in the way it has in other African capitals. Regarding motorized transport, public transportation service was provided by ATRACOM, the state-owned transportation company. It operated old buses imported from Japan in the 1970s, that did not consistently run on a schedule and were unable to meet demand. As a result, private actors began to fill the void by importing minibuses and motorcycles to operate private buses and taxis. Motorcycles became the favored mode of transport as they were quick, inexpensive, and could navigate the hilly terrain and rising traffic congestion. In 2006, the Government of Rwanda (GoR) attempted to ban motorcycles; however, with significant public pushback, they had to cancel the ban after one day. Motorcycle use continued to proliferate, indicating a high demand for transport service as well as the low barriers to entry for operators.

C. Urban Transport Reform

The GoR formed the Rwanda Utilities and Regulatory Authority (RURA) in 2001. The approach employed regulatory controls to direct private operators to provide the type and quality of services envisioned by the state, rather than displace the operators and provide the service themselves. RURA began a series of incremental reforms and restrictions to influence transport behavior, particularly on the operator side. They began with licensing requirements for operators to provide transit service in

2003. Over the next several years, RURA gradually added requirements and restrictions (i.e. safety inspections, meters in taxis) as conditions for the issuance of these licenses. In 2010, RURA banned importation of minibuses, with the requirements that operators phase in higher-capacity vehicles and gradually phase out lower-capacity minibuses.

In 2013, a new policy for urban transport reform was adapted from the National Transportation Master Plan, prepared by Surbana Jurong. The core component of the 2013 reforms was the division of Kigali into four operating zones that would be granted to private operators in the form of monopoly operating concessions. They conducted an open bidding process in which operating companies were awarded contracts for 5-year periods that ended in 2018. This model of publicly sanctioned monopoly for private transport operators was adopted from Singapore where the city is divided into two monopoly zones to hold service providers accountable. One of our respondents described the philosophy regarding the zones: "Before [re]organizing the transport sector, passengers had trouble in filing complaints about the poor service because there was no one to turn to for help and no one to pin for the poor service. Today, complaints against poor service can be handled through companies and cooperatives making it easy for RURA to track poor service providers and penalize them or make them accountable. In short, we allow them to compete for the road, not on the road" (Respondent, 2019).

The Role of ICT in Reforms

Rwanda has foregrounded ICT as a key element of its economic development strategy as well as its urban strategy. The GoR has invested in developing online service delivery to reduce the amount of travel necessary for citizens to access services. Directly related to urban transport are improvements such as electronic ticketing for buses (with some offering mobile payment) and speed governors to address road safety concerns. RURA mandated that all buses in Kigali have free Wi-Fi as well as tap-n-go systems. The city is also partnering with other private entities to develop "smart bus shelters" that feature screens that provide real time information on the location of their bus and the time until arrival. Real-time data will be integrated into a plan for a new Bus Information System and a bus control center to monitor vehicle and passenger movements throughout the city. There are also new ride-hailing mobility services that are enabled by technology including Safemoto and Yegomoto, Yego cabs, and Wolvkswagon.

With the operating monopoly came a number of demands and restrictions from RURA. First, RURA shifted to a policy of issuing transportation licenses only to companies or cooperatives (as opposed to individuals). This last point was a means of dealing with the high number of applications and the fragmentation of the industry; the government sought to negotiate with leaders that could represent operators, rather than negotiate with large groups of solo operators. The creation of mototaxi co-operatives such as the Rwanda Federation of Taxi Moto Operators (Ferwacotamo) is a prime example of the results of this policy. Then, licensed operators were required to gradually change over their fleet, phasing out lower-capacity vehicles for fewer, larger, higher capacity vehicles. Minibuses, sometimes referred to as *Twegerane* (Kinyarwanda for "let's get closer") were considered unsafe, unreliable, and contributing to congestion. These vehicles were banned from trunk roads entirely and gradually phased out from smaller streets in favor of vehicles that had around 30 seats, which are referred to as "coasters." Later, these coasters would likewise be phased out in favor of larger 70 seaters, Chinese-built buses, made by the manufacturer Golden Dragon. Currently, one can find a hybrid fleet in operation, consisting of a mix of coasters and Golden Dragon buses; however, the eventual goal is to have the high-capacity buses replace the small-capacity ones. Moreover, buses were required to stick to set routes and schedules dictated by RURA, and operators would be required to post the route number prominently on the front of the vehicle.[29] The logic of the monopoly concession is that bus operators operate on a regularized schedule, which both preempts competition from other operators and guarantees timely service to riders. According to the head of RURA's Transport Department, these innovations have increased the number public transport passengers from 250,000 in 2013 to 450,000 in 2016 (Respondent, 2019). The number of routes in the public transport network in Kigali have likewise nearly doubled, rising from 42 in 2013 to 78 today, meaning that more city suburbs and neighborhoods are serviced by public transport than ever before.

People queuing Coasters.

[29] The first digit of the route number indicates the transport zone (e.g. 302 for zone 3 and 201 for zone 2), providing an easy check on operators running buses outside of their monopoly zones.

D. Governance and Politics of Urban Transport

Politically, Rwanda is highly centralized, with much of the decision-making that affects Kigali made at the national level. As such, the key stakeholders for urban transport are concentrated here. RURA, perhaps the single-most important entity, is the regulatory authority, setting fares and routes for public transit. The level of independence and autonomy that RURA enjoys is quite unique and likely goes a long way in explaining the unusual degree of sustained regulatory success. The entity has its own budget, its own board of directors, and does not report to any ministry. Instead, it reports directly to the Executive branch of the Central Government. This allows RURA the independence to both make policy choices and maintain continuity, avoiding costly policy reversals. Other key national-level actors include: The Ministry of Infrastructure (MININFRA), which develops national transportation policy and oversees transportation interventions in Kigali; the Rwanda Transport Development Agency (RTDA), in charge of road construction outside of Kigali; and the Rwanda Information Society Authority (RISA), responsible for some of the ICT interventions such as the CCTV cameras.

Despite the highly centralized national government, the City of Kigali also plays a key role. The city engineer directorate is responsible for much of the public infrastructure in the city such as the roads, bus shelters, sidewalks, etc., which are all owned and managed by the City. Thus, the interventions on Kigali streets, such as car-free day, the car-free zone, the pending dedicated bus lanes, the BRT study, and the road building projects, are managed by the City. The key players on the operating side are mixed. Kigali Bus Service (KBS) and Royal Express are privately-held companies that hold the monopoly concessions on Zones 1 and 2, respectively. Zones 3 and 4 were awarded to the Rwandan Federation of Transport Cooperative (RFTC), an umbrella association comprised of cooperatives and unions that coalesced at the national level around 2011 in order to compete more effectively. The previously mentioned Rwanda Federation of Taxi Moto Operators also plays a role (Ferwacotamo). Among other transport companies, there is also the AC Group, a Rwandan company that manages cashless payment of public transport fares.

E. Findings and Policy Implications

Kigali has made gradual progress since 2001 in improving urban infrastructure and transport, with significant change beginning in 2013. Not only has infrastructure has been expanded, but also the strategy developed to manage urban transport provision is being implemented with real success. Introducing regulatory limitations on minibuses has reduced their presence and begun shifting the fleet towards the preferred larger-capacity buses. The introduction of monopoly concessions for the process of procuring service providers to manage each of the zones, an innovation adapted from the Singaporean context, has been implemented successfully. The government, in conjunction with Surbana Jurong, recently updated the 2013 Transportation Master Plan in June 2019 to address the projected growth of Kigali from 1.5 million to four million by 2050. In doing so, it launched a seven-year program (2017 to 2024) to improve public transport services by increasing scheduled bus routes and a study of BRT, which is currently being finalized.

Despite Rwanda's robust regulatory and policing powers, several challenges remain as they continue to pursue transformation, not just of urban transport but of urbanization and development. One of these challenges is the limitations of urban transport to reach into many residential neighborhoods. Some of these areas lack the adequate road infrastructure, while others lack the density to provide service. In limited these areas, the primary means of transport for most of the population remains the moto-taxi. Another challenge to the advancement of the urban transport sector is the issue of

compliance with the reforms. As RURA has mandated improvements in vehicles, private operators have struggled to keep pace, particularly without financial support or subsidy. The cost of fleet change is left to the operators, who are forced to phase out low capacity vehicles for fewer higher capacity vehicles. A particular burden is the cost of new vehicles. Operators can try to access finance up to 70 percent to 80 percent of the cost, but the interest rates are high – around 20 percent. At the same time, they are phasing out old vehicles that may not be fully paid off yet. With no support from the government, the costs of "wasted" vehicles combined with the costs of updating the fleet are creating financial strain for operators (Respondent, 2019). RURA also controls bus fares, while varying costs such as fuel are covered by private operators. This puts operators in a difficult position as they are limited in their ability to respond to fluctuations in their operating costs. Kigali has sought to harness the presumed efficiencies of the private sector to rapidly improve urban transport, while keeping government expenditures low. While the public-private partnership approach is key to the Rwandan strategy, the sustainability of such an approach may be called into question without enough investment in supporting private-sector actors.

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Acronyms

Government of Rwanda (GoR)
Gross Domestic Product (GDP)
Kigali Bus Service (KBS)
Rwanda Information Society Authority (RISA)
Rwandan Federation of Transport Cooperative (RFTC)
Rwanda Transport Development Agency (RTDA)
Rwanda Utilities and Regulatory Authority (RURA)
The Ministry of Infrastructure (MININFRA)

4. Comparative Analysis

Case Comparison

Across the three cases we see distinctive elements, as well as some similarities and cross-cutting questions that emerge regarding urban transport interventions and the governance that produced them. In two cases, there are attempts to adapt a bus rapid transit system, a best practice intervention. In Accra, the most democratic and decentralized context, we see the highest levels of institutional fragmentation and poor coordination. The halting of the Aayalolo bus service and the overall inability to move towards lasting reforms in the urban transport sector are due to key challenges including inadequate infrastructure and financing regarding the operation of the bus service as well as a challenging political environment where there is inter-party competition and a politically powerful paratransit sector. The contestation between state actors and the paratransit sector is exacerbated as privatized service-provision has overtaken public services. The discussion of Dar es Salaam's more successful adoption of the BRT reveals what was prioritized in their approach as well as what aspects received inadequate attention and continue to hamper the full functioning of the system. DART invested significantly in developing the infrastructure, establishing the dedicated bus lanes to facilitate improved mobility throughout the city. However, the operation of the service was left as a secondary concern. UDART was hastily formed to provide service and manage the operation of the system. While the system is operational, it has been running below capacity, with service deteriorating due to high demand and an insufficient number of service providers. In Kigali, we observed a very different approach that relies heavily on regulation and enforcement given the strength of a highly centralized state, to the detriment of relatively weak private-sector operators. Despite Rwanda's robust regulatory and policing powers, issues with compliance to the new reforms persist. RURA has attempted to hold passengers' fares down, placing the financial burden on operators in order to adhere to RURA mandates such as upgrading vehicles, installing speed governors, providing more frequent service, and eliminating unprofitable route designs. In their own distinct ways, each case presents a cautionary tale against over-reliance on the private sector for the provision and financing of urban transport.

In the short run, we see some success and progress in each of these interventions; however. in the long run, we see that each is facing a number of challenges to achieve efficiency and sustainability in terms of their functionality and their ability to support integrated urban development.

Case	Short-run Improvements	Continued Challenges
Accra	Launch of bus service and integration of paratransit sector as operators	Poor infrastructure, overly complex institutional arrangements, ownership
Dar es Salaam	Launch of bus service with strong infrastructure and enforcement	Lack of clarity regarding service providers, not meeting demand, displacement of paratransit sector
Kigali	Progressive regulations, enforcement and integration of ICT	Strains on service providers, displacement of the paratransit sector

Several cross-cutting themes emerge as questions and obstacles in transforming urban transport:

- Institutional arrangements within the public sector;
- Organization of the private-sector operators, including various configurations of paratransit actors;
- Public-private partnerships that structure service provision; and
- Need for appropriate infrastructure, enforcement, and subsidized financing.

Findings and Analysis

The research posed several questions in each case: i) what are the urban transport policies and interventions; ii) who are the actors that influence the decision-making process; and iii) what are the outcomes thus far?

In the first two cases, national urban transport policies were reformed as the precursor to larger projects, supported by the World Bank and other international actors including ITDP. While these projects had multiple components, the overwhelming focus was on developing a BRT system. BRT interventions from Latin America have demonstrated potentially successful pathways to facilitate mobility alongside improved land use and integrated urban development (Cervero 2013b). [30, 31] However, the infrastructure costs and scale of investment are extremely difficult to finance in the Sub-Saharan Africa region. Despite BRT interventions receiving significant investment, many have struggled to implement them or have not been able to fully capitalize on these interventions, leverage strategic land management, or contribute to integrated urban development (Gilbert, 2008). Thus, one of the critical puzzles in adapting BRT interventions is how to develop a high-quality bus service that is affordable in the local context, while retaining the most desirable characteristics of the BRT.

A second puzzle in the adaptation of the BRT is addressing the governance of this intervention, through a focus on the institutional arrangements and diverse transport stakeholders that must be incorporated in such a process. While service provision for public transport can be provided by a private operators, the provision of the urban infrastructure for both public and private transport remains the predominant responsibility of the public sector. This reflects the fact that many of the economic benefits of investing in urban transport infrastructure, more generally, and public transport infrastructure, more specifically, with regard to reduced congestion, pollution, and accident cost savings, are external costs and hence are not considered in the decisions of private service providers. In some instances, there is a similar case for public support to ensure the provision of a service that meets both economic and social needs.

In response to the second question of who is involved in the governance of urban transport, a critical difference emerges between advanced and developing country contexts – the role of external actors in influencing decision-making processes. International and regional development banks are some of the key actors in these processes. External actors also include bilateral organizations such as private and state-run companies from countries such as China and Singapore, as well as independent non-

[30] Several respondents pointed to TransMilenio in Bogota, Colombia as a prominent model for urban passenger transport development in cities around the world.

[31] This best practice has been diffused by virtue of relationships with international development banks and development actors. With such support, there has been a proliferation of BRT initiatives in cities in the Global South, becoming the de facto urban transport intervention.

governmental organizations interested in various elements of the infrastructure-transport nexus. All actors engaged in the governance of urban transport come with their specific interests as well as technical and financial resources to achieve their objectives. The presence of these actors does not preclude the agency of domestic actors. The Kigali case, a seeming outlier, provides an example of a close partnership between a Singaporean firm and the Rwandan state, in developing its unique approach to urbanization, infrastructure, and transportation systems. However, in most cases, a clear challenge to improving urban transport in Sub-Saharan Africa is multi-scalar governance of the public sector. Though most countries have undergone successive decentralization reforms to devolve authority to local governments, this process is mostly incomplete. Many of the key stakeholders within the state are at the national level inclusive of ministries of finance, transport, land, and roads. The Rwanda and Dar es Salaam cases are both dominated by national actors that make decisions for urban authorities. These municipal authorities are also engaged, but often in a more circumscribed role focusing on the management of spatial planning and transport systems. Local governments have limited decision-making power, and even more limited ability to generate local revenue. This renders local governments reliant on fiscal transfers from central government to address a variety of priorities ranging from service provision to urban transport. Even with fiscal transfers, unprecedented growth, urban expansion, and population has put severe pressure on the ability of local governments to support the financing of infrastructure and urban services (Suzuki et al. 2013).

Regarding the outcomes of the interventions, we identified a halted bus service, a highly rated BRT that is showing signs of faltering, and an innovative regulatory approach to managing service provision. In Accra, we see the challenges of political impasse that have led to stalled progress at every turn for improving urban transport. Though Dar es Salaam has made more progress in keeping their system running, it is not meeting demand in terms of bus capacity, expanding routes, and adding a service provider. Kigali has improved service with monopoly concession zones and upgrading vehicles through regulation. In all of the cases, the paratransit sector is still a major actor in facilitating urban transport and mobility. Across the cases, there are challenges to the governance of urban transport that will continue to influence the success or failure of future policies and interventions. Returning to the cross-cutting themes that emerged from the research, we can identify these challenges and consider how research and new policies can support the transformation of urban transport and mobility. Institutional fragmentation at the national and local levels of hinders governance capacity and coordination in the transportation sector and beyond. Structures of multi-scalar governance that tend towards centralized decision-making and fiscal authority disempower urban officials to translate national policies on urban development and transportation into appropriate local interventions.[32] The approach and interests of all of these actors are unlikely to be aligned, suggesting that actors with greater influence at the central scale are able to direct decision-making and investments. While the decision-making for urban transport policies and interventions largely rests with key decision-makers in the state, with the support of international organizations, private-sector operators are highly significant collaborators or competitors. Paratransit operators in many countries in the region are developing more complex forms of organization ranging from associations and unions to LLCs that have a clear stake in the future of urban transport. Paratransit operators are becoming private-sector organizations leading to the question of how these public-private partnerships are structured and how

[32] In addition to these institutional concerns are political challenges. Political actors such as mayors and municipal councils are under pressure to produce immediate results to ameliorate difficult urban conditions including rising levels of congestion, traffic, and pollution. As such, political priorities tend to be oriented toward short-term urban transport interventions to deliver quick wins rather than emphasizing an incremental approach toward broader urban development objectives.

they operate. Again, across all the cases, infrastructure coupled with enforcement and financing urban transport systems remain major challenges.

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Acronyms

Bus Rapid Transit (BRT)
Dar Rapid Transit Agency (DART)
Institute for Transportation and Development Policy (ITDP)
Non-motorized transport (NMT)

5. Conclusions and Future Research

Concluding Summary
The variations across the cases along with the cross-cutting themes, suggest three critical infrastructures are necessary for the transformation of urban transport: institutional, physical, and fiscal.

This research has focused on the ***institutional infrastructure*** necessary to support urban transport, observing the on-going processes of experimentation regarding governance and the institutional arrangements in each case. Key stakeholders in each country continue to seek solutions to improve the institutional arrangements within the public sector in order to balance on-going decentralization reforms with best provision of urban services, including transport. This research has also revealed the importance of public-private partnerships in the provision of urban transport. Additional lessons from the research include the need for balance between the two sectors; a coordinating body that can manage information and responsibilities across a broad field of actors; improved negotiation between state agencies and private service providers; and improving the process and implementation of contracts, regulation, and enforcement.

The research has also revealed the importance of ***physical infrastructure*** to successful and sustained improvements of urban transport and mobility. The colonial legacy of inadequate road infrastructure must be addressed by adding to and improving on existing road networks. If BRT continues to be an element of improved urban transport services, dedicated lanes must also be provided and enforced, requiring bolstered integration of spatial development and land use planning with urban transport

interventions. Provisions for NMT must also be prioritized, particularly pedestrian walkways and flyovers to improve road safety, an acute issue in the region.

Finally, this work has alluded to the significance of ***fiscal infrastructure*** to the progress and longevity of urban transport and mobility. This element is a fundamental challenge to urban transport interventions in most cities. However, in Sub-Saharan Africa there is the additional dimension of extremely low local and national government revenues, requiring external support from multi-lateral donors and other funders. In the past, arguments were made that urban transport interventions such as the BRT would pay for themselves. However, even in the most successful Latin American cases, there is evidence that subsidies are necessary to support the sustainability of these systems. As national governments and external actors structure urban transport interventions moving forward, they must consider the fiscal infrastructure necessary to implement and maintain these interventions.

Future Research

As the introduction highlighted, the region is experiencing significant demographic change as growth and urbanization concentrate increasing amounts of the population in urban areas. In addition, African cities are faced with mounting challenges to support economic and social development – urban expansion and sprawl, inadequate energy, infrastructure, and transport systems as well as the looming threat of climate change. The need for transformative urban transport in Sub-Saharan Africa is evident; how to get there is a more complex proposition. With these challenges in mind, what can be gained by further research on urban transportation in Sub-Saharan Africa? Returning to the opening argument that informed experimentation enables learning – specifically how to structure, finance, implement, and maintain urban transport systems – research plays a prominent role. Regarding institutional infrastructure, we have seen from prior research that the planning and implementation of urban transport innovation can enhance institutional capacity and political accountability. Is this contextually dependent or do certain types of interventions enable such an outcome? For fiscal infrastructures, what models exist that are appropriate for developing country contexts with low revenues? Can land value capture or other schemes of land conversion generate the necessary resources to support major urban transport interventions? Are there examples of subsidized schemes supported by development partners? Additional questions for future research include:

- What transitions have occurred in paratransit organizations – unionization, becoming corporate entities, and other forms of increasing formalization? How does this change the nature of engagement in "public" transport reform processes?
- How are the public-private partnerships that support urban transport structured? What are the variables to determine the appropriate configuration?
- How can national and urban governments balance institutional experimentation with the continuity necessary for long-term urban transport plans?

Continued research can support processes of learning regarding governance and institutional arrangements. The policy implications of reframing the approach to improve urban transport towards learning and experimentation suggests that a variety of options, rather than singular interventions can support the transport needs of national and urban governments given their specific contexts.

6. Case Notes

6.1 DAKAR, SENEGAL

SENEGAL	
Population: 15,020,945 (July 2018) **Population Growth Rate:** 2.36% (2018) **Median Age:** 19	
GDP: USD$54.8 billion (2017) **GDP Per Capita:** USD$3,500 (2017)	
City of Intervention: Dakar	
Urban Population: 47.2% of total population (2018) **Urbanization Rate:** 3.73% annual rate of change (2015-2020 est.)	
Land Area: 192,530 sq km **Total Roadways:** 16,496 km (2017) **Paved Roadways:** 5,957 km (2017) **Unpaved Roadways:** 10,539 km (2017) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi-Scalar Governance

In 1996, Senegal launched the Local Governments Code which transferred powers to subnational level of governments. Senegal was divided into 14 regions which are further split into 103 arrondissements, 45 departments (comprising 550 municipalities), and 19 communes. The region of Dakar is further organized by four departments: Dakar City, Guediawaye, Pikine, and Rufisque. Within the framework of Decentralization Act III, enacted in 2013, each of the 19 communes of Dakar are autonomous and governed by an elected mayor. According to OECD, regions do not have taxation powers, unlike the municipalities, which can raise a variety of local taxes. Taxation in local governments is managed by the central state, which is responsible for tax collection and tax rates. Central governments provide several subsidies to local governments. The decentralization allocation fund, launched in 2007, aims to "compensate expenditures induced by the transfer of 'competences' and is dedicated to the funding of operating expenditures."[33] The local government investment fund, launched in 1977, is a capital grant dedicated to the enhancement of local government investment capability and towards supporting special purposes investment programs. Coordination between the communes and departments, however, has become challenging. For example, Dakar was ready to issue its first municipal bond in 2015 to fund a "market hall" but was blocked by the Ministry of Finance out of concerns that the failure of the bond would hold the Ministry to blame.[34]

[33] https://www.oecd.org/regional/regional-policy/profile-Senegal.pdf

[34] https://www.citylab.com/equity/2015/03/why-africas-booming-cities-need-more-autonomy-in-urban-planning/386585/

B. Urban Policy

Dakar is the fifth most populous city in West Africa. Sustained urban migration since the 1970s, along with a population growth rate of 2.6 percent, contribute to the rapidly increasing population of Dakar. However, less than 20 percent of Senegalese cities and municipalities have urban plans. In fact, many regulatory frameworks put in place are contributing to distortions in land and housing markets along with an increase in informal settlements.[35]

Plans and policies that govern urban development and transport planning across Senegal include:

- *Plan for an Emerging Senegal (PES)*
- *National Territorial Management Plan (PNAT)*
- *National Transport Master Plan 2025 (PDUD 2025)*
- *Urbanization Code (Law No. 2008-43)*
- *Public-Private Partnership Law, 2014*
- *Urban Master Plan of Dakar and Neighboring Area for 2035 (JICA)*
- *Dakar Urban Development Master Plan 2025 ("the 2025 Master Plan")*
- *Master Plan for the Development of Dakar-Thies-Mbour Area 2030*

The **Plan for an Emerging Senegal (PES)** recommends several policy changes including revising Senegal's territorial planning tools, enhancing urban economy, improving urban service provision and access, and improving governance. PES proposes several transportation-related actions such as a regional express train between Dakar-Diamniadio-Blaise Diagne International Airport that would serve 14 stations and carry up to 115,000 passengers per day, in less than 45 minutes, between Dakar and Blaise Diagne International Airport. PES also proposes the redevelopment of the Dakar-Kidira railway line over 644 kilometers. The **Urban Master Plan of Dakar and Neighboring Area for 2035** is a study conducted by Japanese International Cooperation Agency (JICA) to prepare Dakar for an urban development master plan in 2035.[36] The study outlines urban transportation goals such as mass transit systems, inter-modality, transit-oriented development for public transport corridors, and affordability of public transport fares. In addition, it looks at strengthening the function of the Dakar Port and increasing the capacity and efficiency of the Dakar-Bamako corridor, including the railway. The **2025 Master Plan** pursued a number of transportation and infrastructural projects such as highway extensions (including toll highway), bus rapid transit, and renewal of minibuses, taxis and the *Dakar Dem Dik* bus fleet.[37]

C. Climate Change and Sustainability

Climate adaptation and resilience are of critical importance in Senegal since a high concentration of Senegal's assets (i.e. fishing industry makes up 2.2 percent of GDP) and population lie in the coastal areas and since coastal tourism is seen as growth driver. Senegal has been very active in setting policies and participating in global climate governance: they released a National Adaptation Plan in 2006 and a National Strategy for Sustainable Development in 2005. They are also one of the key players behind

[35] Ibid
[36] http://open_jicareport.jica.go.jp/pdf/12250007_01.pdf
[37] Ibid

the Great Green Wall Project, which aims to halt the "advance of the Sahara Desert."[38] In addition, Dakar is the first African city to publish a resilience strategy with The Rockefeller Foundation's 100 Resilient Cities initiative and is integrating sustainable development principles in various national policies through the 2009-2015 Environment and Natural Resources Sector Policy Letter.[39] Senegal is also restructuring their energy policy, as outlined in their "Letters of Policy Development of the Energy Sector," identifying the strategic role renewables could play in energy and transportation.

II. INFRASTRUCTURE & TRANSPORT

A. Existing Infrastructure

Dakar's spatial planning was largely based on the French colonial model of five major zones of built-up areas interlinked by axes. Major infrastructures are located closer to the major urban centers and along the coast thus making distribution of transportation uneven.

During the 1990s, the Senegalese government privatized companies involved in the airline, water, finance, real estate, and telecommunications sectors.[40] The government is still involved in ports and infrastructure projects but has increasingly resorted to public-private partnerships (PPPs). In 2004, the Senegalese parliament passed a law that formally authorized the use of PPPs in infrastructure projects. The 2004 Build Operate and Transfer Law, later amended by the 2014 Public Private Partnership Law, outlined formal procedures for the bidding process and created the Infrastructure Council to supervise the bidding process and safeguard against corruption.

Air: As of 2013, Senegal has 20 airports with the Leopold Sedar Senghor being the main international airport, which is served by most major airlines. In 2017, Senegal opened a new airport – Blaise Diagne International – as part of Plan Emergent Senegal. Blaise Diagne International includes a conference center, new research centers, hotels, and a special economic zone intended to lure new industries. All are along a new asphalt toll road leading from Dakar's center.

Rail: As of 2013, Senegal has 906 kilometers of railway with 713 kilometers being operational. The Dakar to Bamako rail line was privatized in 2003 and was run by Transrail which was owned by Canac (a Canadian company) until it was bought by Savage (a US company) who subsequently sold its stake to Vecturis (a Belgian company) who currently runs the line.[41]

Ports: The largest port in the country, Port Autonome de Dakar (PAD), serves as a national entry point for imports and exports. The PAD also plays a key role in regional integration: 70 percent of imports by Mali from overseas transit comes through the PAD.

Roads/Highways: Senegal has built 1,520 kilometers and rehabilitated 4,015 kilometers of roads over the past four years. In 2000, the Senegalese government gave the newly-established National Agency for Investment Promotion and Major Projects (APIX) the responsibility of supervising a proposed 32-kilometer toll highway that would connect Dakar to the economic hub of Diamniadio.

[38] http://www.lse.ac.uk/GranthamInstitute/country-profiles/senegal/
[39] Ibid
[40] The 2008 global financial crisis provoked a reduction of about 20 percent of FDI in 2009.
[41] https://dlca.logcluster.org/display/public/DLCA/2.4+Senegal+Railway+Assessment

In October 2015, after the tollway was completed, 45,000 vehicles on average were using the toll road every day with substantial reductions in the driving time between downtown Dakar and Diamniadio from over 90 minutes to 15-30 minutes. The non-toll traffic routes also remained in operation, allowing traffic to be split and creating more room for vehicles. Overall, 930 jobs (800 during the construction phase and 130 after the launch phase) were created by the project. The project became one of the first toll roads to be built through PPPs in Sub-Saharan Africa.[42] The principal funding was provided jointly by the Senegalese government, the World Bank, Agence Française de Développement, and the African Development Bank. The Fonds d'Entretien Routier Autonome (Autonomous Second-Generation Road Fund) was also created in 2007 to secure and increase financing for routine maintenance of urban roads. The road fund was to be supported directly by user fees mobilized from existing and additional taxes on gasoline distribution.[43]

B. Existing Transportation

Current modes of transport in Dakar are split between bus, minibus, rail, taxi, and independent operators licensed by the Executive Council of Urban Transport (CETUD). According to Ousmane Thiam, President of CETUD, the informal sector accounted for 80 percent of public transport in 2000, while today it has fallen to 39 percent.[44]

Bus: The *Dakar-Dem-Dikk* (DDD) is a formally structured bus company launched in 2000 whose capital stock is shared between the Senegalese government (76.6 percent) and private Senegalese investors (23.4 percent). They operate 24 urban and suburban lines and deploy roughly 100 buses per day for 120,000 passengers.[45] The government has subsidized DDD, but transfers have been irregular.

Dakar has an SMS-based transit information system, called *Dakar Dem Dikk Tracking*, that can predict the position of buses based on the number of remaining bus stops.[46] Last year, another transit mobile app called Sunubus was launched by four young developers.[47]

***Cars Rapides*:** *Cars rapides* are 25 to 40-seater informal minibuses, typically over 30 years of age, and owner-driver operated, launched in response to DDD's low capacity. The majority of *cars rapides* are concentrated on the routes and secondary roads from the periphery to Dakar center, and mostly in the areas of Malika, Pikine, and Parcelles Assainies.[48] There are currently 3,000 vehicles, which provide about 80 percent of the transport and are run by small cooperatives under the supervision of their *Association de Financement des Transports Urbains* (Urban Transport Financing Group). The government planned to phase out these vehicles in 2018 and worked with the World Bank on an initiative (still underway) in the 1990s to enable owners to replace their *car rapides* vehicles with higher-capacity AFTU (*l'Association de Financement des professionnels du Transport Urbain)* buses using a subsidized loan.[49]

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[42] For more information on the tollway, see: https://www.centreforpublicimpact.org/case-study/senegals-dakar-diamniado-toll-highway/
[43] http://documents.worldbank.org/curated/en/847101476984653723/pdf/108407-PPAR-PUBLIC.pdf
[44] https://www.uitp.org/news/dakar-transport-formalisation
[45] http://edmi.ucad.sn/~gueye/articles/ICSCC2018_c.pdf
[46] Ibid
[47] https://www.bbc.co.uk/programmes/p06974cb
[48] http://open_jicareport.jica.go.jp/pdf/12250007_01.pdf
[49] Ibid

Ndiaga Ndiaye: *Ndiaga ndiaye* are also informal minibuses, typically over 30 years of age, and owner-driver operated. They run only on major roads that are profitable, mostly in the areas of Rufisque, Keur Massar and Mbao.[50]

Commuter Rail: *Petit Train Banlieue* is a state-owned company that operates a light suburban rail line between Dakar, Rufisque, and Thies, with limited capacity due to unfinished work on a second track that is financed by the World Bank Urban Mobility Improvement Project. Other main railway agencies include Transrail and Société Nationale de Chemins de Fer du Sénégal (operates Senegal Railways).

Taxis Clandos: *Taxis clandos* are unregistered private cars operated as a taxi by someone who does not own the car but operates it when the car is not in use by its owner.

C. Infrastructure Stakeholders

Government: The Executive Council of Urban Transport (CETUD) is responsible for implementing and monitoring public transportation policies within the Greater Dakar Area. *Agence des Travaux et de Gestion des Routes* (AGEROUTE) is the national agency responsible for implementing all road infrastructure construction, rehabilitation, and maintenance on the national classified network. CETUD and AGEROUTE are coordinating on a bus rapid transit project with the World Bank; however, the World Bank has noted major capacity challenges with CETUD, which is still undergoing a restructuring that started in 2000.[51]

International: As noted in the section on ports, much of Senegal's infrastructure is financed, assisted, operated, or owned by many international stakeholders. The European Union is assisting in the preparation of a national road safety policy. VERITAS, a French private concessionaire company, is taking charge of vehicle registration.[52] Systra, an international planning and engineering firm, is producing a study recommending the creation of a single state-owned transport (holding) company that would combine *Petit Train Banlieue* and *Dakar Dem Dikk*.

Unions, interest groups and savings associations: As a result of the World Bank Urban Mobility Improvement Project,[53] minibus operators organized themselves in *groupement d'intérêt economique* (economic interest groups) and formed a savings association, *Association de Financement des Transports Urbains* (Urban Transport Financing Group or AFTU) to handle lease and insurance payments. The World Bank asserts that this leasing scheme has helped improve the quality of service, formalization of the minibus sector, allocation of routes, and fare collection.

Ride-hailing services: Senegalese-based Ping! runs an exclusive fleet of hybrid cars, with a vision of becoming a 'Green Uber'.[54]

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[50] Ibid
[51] http://documents.worldbank.org/curated/en/847101476984653723/pdf/108407-PPAR-PUBLIC.pdf
[52] http://open_jicareport.jica.go.jp/pdf/12250007_01.pdf
[53] Ibid
[54] https://www.designindaba.com/articles/creative-work/senegal%E2%80%99s-taxi-industry-set-gain-eco-conscious-option-ping-app

D. Interventions/Projects

Bus Rapid Transit: The Global Infrastructure Facility, World Bank, and International Finance Corporation are helping Dakar implement a rapid bus transit system through a public-private partnership. The BRT will consist of an 18.3-kilometer long segregated rapid bus lane, integrating a trunk and feeder system. It will also include the construction of build or provide terminals, metro-style stations, bus fleets, and intelligent transportation systems.[55] It will be implemented through a 10-year concession with an estimated cost of USD$55 million and annual operating costs of USD$30 million.[56] The BRT is expected to reduce long-term greenhouse gas emissions by 1.5 million tons of CO2 emissions.[57]

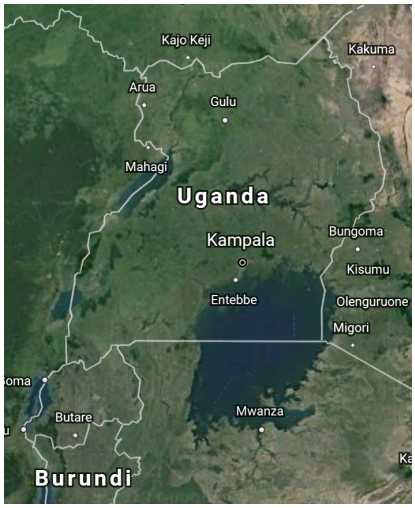
Dakar Regional Express Train: As part of the economic development plan of Senegal, the regional express train is a railway line being built to connect Dakar city centre with Blaise Diagne International Airport through a 55-kilometer long track, with the eventual goal of replacing the Petit Train de Banlieue.

Diamniadio City: Announced in the PES, Diamniadio – a short drive east of Dakar – and its 1,644 hectares will be subdivided into four sectors of 400 hectares each. One section will be the Ministerial City, another section the "City of knowledge" with entertainment facilities and the Amadou Mahtar Mbow University that is fit for 30,000 students, a third international industrial park section, and a final "smart city" section. Housing will be built to accommodate 350,000 people, with luxury, middle-class, and economic buildings all near one another.

World Bank Urban Mobility Improvement Project[58]: The project (and succeeding Project for Supporting Transport and Urban Mobility) intends to support Dakar's road rehabilitation, pedestrian and traffic safety, minibus leasing, air quality management, and institutional development efforts. The project is responsible for financing a second track of the Petit Train de Banlieue and providing support to address illegal occupation by vendors of the railway right-of-way, increase number of railway carriages, and replace outdated infrastructure and equipment.

[55] http://blogs.worldbank.org/transport/africa-paving-way-climate-resilient-future
[56] https://www.globalinfrafacility.org/sites/gif/files/GIFBriefs_PPSA_April2018_Senegal%20Dakar.pdf
[57] Ibid
[58] http://documents.worldbank.org/curated/en/847101476984653723/pdf/108407-PPAR-PUBLIC.pdf

6.2 KAMPALA, UGANDA

UGANDA	
Population: 40,853,749 (2018 est.) **Population Growth Rate:** 3.18% (2018 est.) **Median age:** 15.9	
GDP: USD$89.19 billion (2017 est.) **GDP Per Capita:** USD$2,400 (2017 est.)	
City of Intervention: Kampala	
Urban Population: 23.8% of total population (2018 est.) **Urbanization Rate:** 5.7% annual rate of change (2015-20 est.)	
Land Area: 197,100 sq km **Total Roadways:** 20,544 km (2017) **Paved Roadways:** 4,257 km (2017) **Unpaved Roadways:** 16,287 km (2017) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi-Scalar Governance

Uganda's major decentralization mandate emerged from the 1995 Constitution, the Decentralization Statute No. 15 of 1995, and the Local Government Act of 1997. The Local Government Act established local councils at the district, municipal, and subcounty/division/town council levels as corporate bodies of local governments.[59] Councils gained far-reaching powers and responsibilities in areas such as finance, legislation, politics, planning, and personnel matters.[60] Services became decentralized but were not matched with adequate financial resources. Kampala's borrowing power is capped by the central government. Moreover, local governments are becoming increasingly dependent on the central government for funding as a result of the removal of the graduated tax in 2005, which contributed 80 percent of local revenue.[61]

The City of Kampala is managed by the Kampala Capital City Authority (KCCA), which is a national government ministry governed by the 2010 KCCA Act.[62] The surrounding districts are managed as local governments, under the Local Government Act of 2005, and coordinated by the Ministry of Local Government. Districts are continuously created, which further service delivery and financing challenges.

[59] Uganda recognizes five levels of Local Councils: http://www.localpublicsector.net/profiles/uga1011.htm
[60] http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/124890/filename/124891.pdf
[61] Ibid
[62] https://blogs.lse.ac.uk/africaatlse/2018/02/07/why-metropolitan-governance-structures-matter-kampala/

B. Urban Policy

Plans and policies that govern urban development and transport planning across Uganda include:

- *Uganda National Development Plan*
- *Uganda Vision 2040*
- *Uganda Comprehensive National Development Planning Framework*
- *Uganda Poverty Eradication Action Plan*
- *Uganda National Transport Master Plan 2021-2040*
- *Uganda Non-Motorised Transport Policy*
- *Kampala Capital Cities Act*
- *Kampala Declaration on Building Inclusive Growth and Livability in African Cities*
- *Kampala Physical Development Plan*
- *KCCA Strategic Plan (updated yearly)*

Overall, Uganda's focus is on 14 secondary cities that are seeing the most rapid population growth.[63] A major priority is modernizing infrastructure and urban transport including phasing out taxis and bodas bodas.

Vision 2040 sets forth a vision of a "transformed Ugandan society from a peasant to a modern and prosperous country within 30 years." The **Kampala Declaration on Building Inclusive Growth and Livability in African Cities** sets forth guiding principles on the pathways to urbanization in major cities across Africa. The **Kampala Physical Development Plan**[64] is a comprehensive framework aimed at developing a multi-focal city center, extended central business district, freeway, lakefront city, parks, hierarchy of organized and accessible service centers, tourism, urban quarters, housing models, drainage and water supply systems, and employment centers, among others. The **National Transport Master Plan** intends to phase out taxis and *boda bodas* and replace them with bus, rail, and cable cars. The **Non-Motorised Transport Policy** seeks to integrate universal design principles and issues around safety, roads and non-motorized transport (bicycle, tricycle, and bicycle trailers).

The KCCA has also undertaken urban transport-related improvements including the establishment of non-motorized transit corridors such as Namirembe Road and Luwuum Street; introduction of buses, bus lanes, and smart ticketing system; construction of a traffic control center; and removal of roundabouts which will be replaced with signalized junctions.

A number of efforts are also underway to boost planning capacity, such as the Future Cities Africa initiative, which is a partnership between Cities Alliance and the UK's Department for International Development. KCCA has also been introducing a results-driven working culture through establishing a performance-based compensation system.

[63] https://www.citylab.com/design/2016/04/in-ugandas-small-but-fast-growing-cities-one-planner-is-not-enough/480141/
[64] https://www.kcca.go.ug/uploads/kcca%20proposed%20dev%20plan.pdf

C. Climate Change/Sustainability

Kampala's five-year Climate Change Action roadmap lays out a vision to reduce emissions by 22 percent through adaptation, alternative energy sources, and improvements in key relevant sectors such as transportation and waste management.[65] The strategy integrates with other initiatives like the Climate Smart Capital Investment Plan and Ecosystem Services Valuation Exercise supported by the World Bank. To use scarce resources wisely, KCCA has partnered with the World Bank and the University of Washington to develop a climate-smart capital investment plan.

The KCCA is also undertaking climate-change related transport interventions such as the creation of non-motorized transit corridors, banning of *boda bodas*, and upgrading of new roads with solar-powered lights with the city estimating that some 40,000 units will be needed over the next five to ten years.

Uganda's National Climate Change Policy and its Nationally Determined Contribution also recognize the need to mitigate vehicle emissions and make transport infrastructure climate resilient.

II. INFRASTRUCTURE & TRANSPORT

Kampala was originally planned for a population of 150,000 but now spans an area that includes the surrounding districts of Mpigi, Mukono, and Wakiso. This region, known as the Greater Kampala Metropolitan Area, has a population of about four million. About two million people live and work in the core and two million others commute into the center of the city to work during the day.[66]
Major infrastructure challenges include funding, unpaved roads, takeover of footways by informal transit, inadequate and inconsistent design, and construction standards, among others. Major urban transport challenges include funding, traffic congestion (1.5 million residents are sharing just 190 sq kilometers of road space), lack of dedicated bicycle and bus lanes, road fatalities, and market competition between domestic and international actors.

A. Existing Infrastructure

Air/Rail/Ports: As of 2013, Uganda has five airports and 1,244 kilometers of railways. In 2017, President Yoweri Museveni approved a loan of 10.3 trillion Ugandan shillings (USD$2.9 billion) from China Exim bank for a railway linking Kampala to Kenya through the border town of Malaba.[67] Ugandan officials defended the high price tag by pointing out that the railway will be electric and that the costs are largely based on the terrain and number of bridges needed. China said it would be willing to finance a standard gauge railway connecting Kenya, Uganda, and Rwanda if the three countries agree to operate the railway jointly.

Roads/Highways: Over a decade, ten percent to 23 percent of Ugandan public expenditures have gone to roads and other transport infrastructure.[68] Of the road projects launched in Uganda, the

[65] The initiative is supported by the French Government through Expertise France, French Development Agency (AFD), and French Global Environment Facility (FFEM) as part of the africa4climate programme.
[66] https://www.theigc.org/blog/metropolitan-governance-structures-matter-kampala/
[67] https://qz.com/africa/1036970/ugandas-chinese-built-sgr-railway-will-cost-more-than-kenyas/
[68] Ibid

Kampala-Jinja and Kampala-Entebbe Airport expressways are most notable.[69] The Kampala-Entebbe expressway, built by Chinese Communications Construction Company, cost 1.7 trillion Uganda shillings (USD$450 million), which is more than Uganda typically spends on its entire road network in a year – an average 1.6 trillion shillings in the past six years.[70,71]

Ugandan engineers lobbied the government for a preferential policy, which they received in March 2017 – the public procurement authority issued a regulation reserving 30 percent of big projects to local firms. However, in February 2018, the authority repealed that regulation; the 30 percent was opened up to any firm that has been incorporated in Uganda for at least two years.

B. Existing Transportation

Current modes of transport in Kampala are: taxis (46 percent), boda bodas (32 percent), cars (19 percent), buses (two percent), and trucks (two percent).[72] It is also estimated that up to 70 percent of urban dwellers commute by foot.[73] Three options for mass public transportation under discussion include bus rapid transit, light rail train, and a cable car.

Boda-boda: *Boda bodas* are motorcycle taxis and have low engine power. According to Mulago, the city's biggest hospital, they attend to 10-20 victims of motorcycle crashes a day, with most of them presenting head injuries.[74] The film *Boda Boda Thieves,* released in 2015, explores how *boda bodas* have become a tool for "urban crime syndicates".[75]

SafeBoda[76]: Two economists who were working in development across East Africa, Maxim Dieudonne and Alastair Sussock, partnered with their regular *boda boda* driver to set up "Uber, but for *boda bodas*." Damalie Wasukira, a business growth officer with *SafeBoda*, says they recruited some 1,000 riders, trained them on safety, gave each two helmets and a reflector jacket, and built an app to connect them to customers. The business had raised more than USD$1 million to roll out their service. Some 3,000 people downloaded the app but far fewer regularly used it. In response to Uber's entry, *SafeBoda* has been ramping up efforts to convince consumers they are a better option.[77]

Uber, Friendship Taxi, and Quick Taxi: Since Uber's launch, two more competitors joined the market: Friendship Taxi (a fleet of green taxis owned by a Chinese company) and Quick Taxi (a fleet of yellow cabs and an Uber-like app for e-hailing).

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[69] https://www.afdb.org/en/news-and-events/ugandas-kampala-jinja-expressway-project-approved-by-african-development-bank-18638/
[70] Ibid
[71] Quartz Africa analyzed the data for 48 national road contracts issued in the past decade and found that 70 percent of the funding went to Chinese contractors and only four percent to locally incorporated firms.
[72] https://www.kcca.go.ug/news/308/#.XP1ep1xKhdg
[73] https://www.theigc.org/blog/from-moving-vehicles-to-moving-people-designing-a-mass-public-transportation-system-for-kampala/
[74] Ibid
[75] https://www.citylab.com/equity/2015/04/meet-east-africas-new-motorcycle-gangs/390828/
[76] https://qz.com/africa/983567/in-kampala-uber-and-safeboda-are-trying-to-convince-ugandans-they-dont-need-a-car/
[77] Ibid

Matatus: *Matatus* are 14-seater minibus vans of which there are 16,000, based on a 2013 transportation census.[78]

Automobiles: From 2013 to 2017, Ugandans spent more than USD$620 million on importing used cars, according to data from the Uganda Revenue Authority. [79]

C. Infrastructure Stakeholders

While land management is largely centralized and managed by the Ministry of Lands Housing and Urban Development, physical planning is largely decentralized. Physical Planning Committees are established at the district, urban, and local levels and charged with the development of their respective local physical development plans, approval of development applications, and other related development control functions (in this case under the charge of the KCCA Physical Planning Directorate).

From 2005 to 2008, bilateral aid channeled through international agencies made up 59 percent of Uganda's transport sector investments.[80] The World Bank is particularly active:

- as part of the Transport Sector Development Project, they extended USD$190 million in International Development Association credit which supported the implementation of the National Transport Master Plan;
- in providing assistance under the Road Sector Institutional Support Technical Assistance Project; and
- financing a pre-feasibility study for introducing bus rapid transit in the Greater Kampala Metropolitan Area.

There is also active Chinese and Japanese involvement: the Chinese Communications Construction Company commissioned a 51-kilometer expressway from Kampala to Entebbe Airport and JICA has been heavily involved in road projects across the Kampala region.[81]

D. Interventions/Projects

Promoting Sustainable Transport Solutions for East African Cities (SUSTRAN): led by GEF and UN-HABITAT, SUSTRAN is providing Addis Ababa, Kampala and Nairobi with technical and institutional support on the design and implementation of "high quality, efficient public transport that integrates non-motorized transport."[82] They helped co-organize a study tour of DART for officials and conducted a cost-benefit analysis of clean technologies for BRT. [83,84]

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[78] https://www.theigc.org/blog/from-moving-vehicles-to-moving-people-designing-a-mass-public-transportation-system-for-kampala/
[79] Ibid
[80] http://ledsgp.org/wp-content/uploads/2018/03/GIP01883-LEDS-UgandaFinal.pdf
[81] Ibid
[82] http://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=3483&alt=1
[83] https://unhabitat.org/nairobi-and-kampala-delegates-tour-dar-transit-system/
[84] http://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=3484&alt=1

Second Kampala Institutional and Infrastructure Development Project[85]: seeks to enhance the infrastructure and institutional capacity of the KCCA to improve urban mobility for inclusive economic growth. There are two components to the World Bank-assisted project: (1) city wide road infrastructure and associated investments and (2) institutional and systems development support. The Urban Transport Master Plan was funded by the World Bank and Ugandan Government through the KCCA as part of this project.

Uganda Support to Municipal Infrastructure Development Program[86]: The World Bank and IDA assisted program is being implemented in 14 municipalities to expand infrastructure and improve service delivery. In Jinja, 77.56 kilometers of equivalent two-lane roads with associated road infrastructure have been improved. USMID is also helping municipalities enhance their revenue sources: an inventory of possible revenue sources showed that many municipalities did not collect property rates or ground rents.

Bus Rapid Transit: A feasibility study of the BRT system in Kampala suggested a pilot that would travel on three routes between Bwaise, Kireka, and Zana, which intersect with the non-motorized transport corridor planned for the city center. The study also estimated the service could transport more than 37,000 passengers per day.[87] Kampala's complicated land tenure system, outdated land registry, and inadequate road networks are among several challenges to launching BRT.

Light Rail Transit: LRT is considered suitable for Kampala's hilly topography. A feasibility study is in its initial stages, but estimates put the cost of LRT as significantly higher than the BRT.

Cable Car: Classified as a clean technology, the cable car's current pilot line is proposed to run from the outskirts of Kampala and terminate in the city center. This route is approximately four kilometers long and is estimated to have cheaper upfront costs than he BRT and LRT.

Kampala Mobility Map: ITDP Africa is working with students at Makerere University to develop a map of matatu routes and collect data on passenger volume and demand.[88]

Akright City: the new city, which is 15 miles from Kampala, was created as a suburban vision for Uganda. According to its founder, Anatoli Kamugisha, "many of the people who live here have come from places with no good roads, no reliable water or electricity [on the grid] — what we call rich man's slums — and they're running from those haphazard developments to stay for the first time in an organized living environment." [89]

[85] http://projects.worldbank.org/P133590/kampala-institutional-infrastructure-development-project-2?lang=en
[86] https://www.worldbank.org/en/news/feature/2019/01/30/world-bank-support-to-ugandan-municipalities-helps-modernize-infrastructure
[87] https://www.theigc.org/blog/from-moving-vehicles-to-moving-people-designing-a-mass-public-transportation-system-for-kampala/
[88] https://www.itdp.org/2015/04/13/tracking-transit-in-kampala-uganda/
[89] https://www.citylab.com/design/2016/04/akright-city-uganda-kampala-suburb-anatoli-kamugisha/479217/

6.3 LAGOS, NIGERIA

NIGERIA	
Population: 203,452,505 (2018) **Population Growth Rate:** 2.54% (2018) **Median Age:** 18.3	
GDP: USD$1.121 trillion (2017 est.) **GDP Per Capita:** USD$5,900 (2017 est.)	
City of Intervention: Lagos	
Urban Population: 50.3% of total population (2018) **Urbanization Rate:** 4.23% annual rate of change (2015-2020 est.)	
Land Area: 910,768 sq km **Total Roadways:** 193,200 km (2014) **Paved Roadways:** 28,980 km (2014) **Unpaved Roadways:** 164,220 km (2014) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi-Scalar Governance

Nigeria's federation was restructured into 12 states in 1967, followed by the creation of Lagos State. In 1991, with the formal relocation of the seat of the Federal government to Abuja in 1991, Lagos ceased to be Nigeria's political capital.[90] The state of Lagos is broken down into five administrative divisions, collectively referred to as IBILE: Ikeja (the state capital), Badagry, Ikorodu, Lagos City, and Epe.[91] Lagos does not have a single, unified municipal government but instead features 20 local government areas.[92] Since 2004, Lagos State has created 37 additional local governments that are considered illegal by the Federal government, which has decided to withhold allocations to Lagos State local councils.[93] Such clashes between Lagos and the Federal government have been occurring since the 1960s and are further compounded by the fact that, under Nigeria's military-rule era constitution, many local responsibilities (e.g. policing, driver's licenses, etc.) are assigned to the federal government. Indeed, there have been clashes over transportation-related issues including road infrastructure and loans for the Lagos LRT.

[90] https://www.city-journal.org/html/lagos-nigeria-16011.html
[91] https://lagosstate.gov.ng/about-lagos/
[92] Fourchard, Laurent. "Lagos, Koolhaas and Partisan Politics in Nigeria." *International Journal of Urban and Regional Research*, vol. 35, no. 1, 2010, pp. 40–56., doi:10.1111/j.1468-2427.2010.00938.x.
[93] Ibid

B. Urban Policy

- *Nigeria Vision 2020*
- *Nigeria Railway Authority Bill 2014*
- *Lagos State Development Plan, 2012-2025*
- *Lagos Non-Motorised Transport Policy 2018*
- *Lagos Strategic Transport Master Plan 2015*
- *Lagos Urban Transport Project 2002*
- *Lagos State Water Transport Program*
- *LAMATA Law 2002*

The **Lagos State Development Plan** assumes Lagos will be ranked the third largest city in the world and therefore sets out a number of transportation and infrastructure-related policies which include an integrated transport system, traffic management and road safety plan.[94] The plan will seek innovative ways to finance infrastructure including increasing user charges, rationalization of service levels and use of shared services, outsourcing, and strategic partnerships. It builds upon previous strategic plans such as the 2009 Strategic Management Framework, Vision 2020, 10-Point Agenda, Lagos State Economic Empowerment and Development Strategy, and the Development Agenda for Western Nigeria.

The **Lagos Strategic Transport Master Plan** (along with the Lagos Urban Transport Project) introduces a fully integrated mass rapid transit system consisting of seven rail lines, one monorail, 14 BRT routes, 26 water routes, three cable cars, and road projects.[95] In addition, it seeks to establish a common ticketing system to integrate public transport modes and develop waterways transport.

C. Climate Change/Sustainability

As outlined in the 2013 National Policy on Climate Change and Vision2020, Nigeria aims to pursue a low-carbon, high-growth economic development path and plans to build a climate-resilient society through the attainment of set targets, such as the use of renewable energy. Lagos is pursuing sustainable development and climate change adaptation through sustainable transport options (i.e. BRT, light rail, ferries), infrastructure investment (i.e. roads system)[96] and partnering with institutions such as the African Development Bank in pursuing carbon credits.

II. INFRASTRUCTURE & TRANSPORT

A. Existing Infrastructure

According to the Lagos State Development Plan, metropolitan Lagos covers about 85 percent of the state's land area and encroaches upon non-urban land areas, some of it outside state boundaries.

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[94] https://www.scribd.com/document/271150413/LAGOS-STATE-DEVELOPMENT-PLAN-2012-2025
[95] https://oxfordbusinessgroup.com/overview/taking-action-rehabilitating-and-expanding-transport-network-key-realising-its-potential
[96] https://thecityfix.com/blog/future-sustainable-transport-lagos-nigeria-eko-rail-brt-cable-car-ferry-climate-kasope-aleshinloye/

Air/Rail/Ports: Nigeria has eight ports (Apapa in Lagos is the main port) and over 20 airports (Murtala Muhammad International Airport is the main airport). Nigeria is investing in a new international airport, new terminals at all four existing international airports, a port in Lekki, and three new deep-water ports with work started on the USD$1.5 billion Badagry Deep Seaport, which is considered to be the largest deep-water port in Africa.[97] Nigeria has also invested USD$166 million to get older trains running again between Lagos and Kano, an ancient city 700 miles to the north.[98]

Roads/Highways: Road network density is low – at 0.6 kilometers per 1,000 inhabitants – compared to the density of cars which is at 148 cars per 1,000 inhabitants. Apart from main highways, most roads are private-sector owned. The quality of many roads in Lagos are considered suspect or outright unsafe, particularly the Lagos-Badagry Expressway (the main East-West corridor in the city) and the Oshodi-Apapa Expressway.

B. Existing Transportation

Existing modes of transport consist of *molues* (buses), *danfos* (minibuses), bus rapid transit, taxis, motorcycles, *okadas* (tricycles), ferries and trains. Roughly 70 percent of motorized trips are made through paratransit and are split as follows: buses (82 percent), taxis and cars (13 percent), and motorcycles (5 percent).[99,100] Among existing transportation challenges, Lagos is known for high levels of traffic congestion. Congestion typically follows a North-South pattern, since commuters to the Central Business District are traveling from the north and west regions of Lagos and alternative routes are constrained by coastal geography.[101] Furthermore, cost recovery in the transport sector is low due to low user charges, inefficient collection systems, and poor management.

Danfo: There are approximately 75,000 minibuses known as *danfo*. Transport prices for *danfos* have historically accounted for 20 percent of a typical passenger's disposable income.[102] The governor of Lagos announced plans to phase out the *danfo* and replace them with new commercial buses.

Molues: There are approximately 83,000 public buses known as *molues* (larger versions of *danfo*) operating in Lagos, accounting for 69 percent of motorized trips.[103] *Molues* are regulated by the Lagos Metropolitan Area Transport Authority and Lagos Bus Services Limited, which is the Lagos State government-owned asset management company.

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[97] Ibid
[98] https://www.citylab.com/transportation/2015/02/how-overlooked-colonial-railways-could-revolutionize-transportation-in-africa/385056/
[99] http://wedocs.unep.org/bitstream/handle/20.500.11822/25415/Lagos_NMTPolicy.pdf?sequence=3&isAllowed=y
[100] http://documents.worldbank.org/curated/en/410431469427889576/pdf/103068-ppa-P074963-PUBLIC-IEG-r-nigeria-0716.pdf
[101] Ibid
[102] http://documents.worldbank.org/curated/en/410431469427889576/pdf/103068-ppa-P074963-PUBLIC-IEG-r-nigeria-0716.pdf
[103] https://carnegieendowment.org/2015/01/12/governing-lagos-unlocking-politics-of-reform

Okadas: There are approximately eight million (shared) motorcycle taxis known as *okadas.*[104] With their own union, ANACOWA, *okada* drivers filed a lawsuit against the Lagos State government in 2012 in response to the Road Traffic Law's restrictions on *okada* rides on 475 major routes.

Keke NAPEPs: These are tricycles carrying a maximum of four passengers with restricted routes in Lagos. Kekes are managed by the Tricycle Owners and Operators Association of Nigeria, which recently entered into an agreement with Mattatu, a keke-hailing app.[105]

Ferries: The state and federal government provide ferry services, though there have been safety issues and shortage of investment with the Lagos Ferry Services Company. The ferry system currently carries about 18,000 passengers a day, but there is more potential since one-fifth of Lagos is water.[106]

Commuter Rail: The daily rail commuter service is operated by the National Railway Corporation and consists of an underutilized branch line.

C. Infrastructure Stakeholders

State Government: According to the Lagos State Development Plan, there is no up-to-date overarching transport policy that can help resolve fragmentation and duplication of institutional responsibilities.[107] Further, existing transport modes have built up powerful interest lobbies. To address these challenges, Lagos is interested in developing a new and integrated transport policy and master plan, fully autonomous public-private agency, safety and security standards, standardized transport systems, and appropriate mechanisms to ensure participation of transport stakeholders in state infrastructure planning.

Unions: Commercial drivers are affiliated with the Nigerian Union Road Transport Workers (NURTW), who include ticket operators known as *agberos*. NURTW is considered to be a highly politized and, at times violent union,[108] because they demand illegal taxes from transport workers and have been used by politicians to intimidate political opponents and, in several instances, to help rig elections.[109] Another dominant paratransit operator in the metropolis is the state chapter of the National Union of Road Transport Workers.

Ride-Hailing Services: Uber, Taxify, and Estonia-based Bolt are among over a dozen ride-hailing services available in Lagos. Despite facing tensions from drivers after slashing fares by 40 percent in 2016 and setting their commission at 25 percent,[110] Uber is now planning to launch Uber Boats

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[104] https://www.premiumtimesng.com/news/158562-nigeria-8-million-registered-okada-riders-association-president.html
[105] https://www.konbini.com/ng/lifestyle/actual-uber-keke-startup-launched-nigeria/
[106] https://thecityfix.com/blog/future-sustainable-transport-lagos-nigeria-eko-rail-brt-cable-car-ferry-climate-kasope-aleshinloye/
[107] https://www.scribd.com/document/271150413/LAGOS-STATE-DEVELOPMENT-PLAN-2012-2025
[108] https://www.theguardian.com/cities/2016/feb/25/beatings-bribes-corruption-lagos-nigeria-traffic-jams
[109] Fourchard, Laurent. "Lagos, Koolhaas and Partisan Politics in Nigeria." *International Journal of Urban and Regional Research*, vol. 35, no. 1, 2010, pp. 40–56., doi:10.1111/j.1468-2427.2010.00938.x.
[110] https://qz.com/africa/986037/uber-and-its-rivals-are-struggling-to-keep-both-drivers-and-riders-happy-in-lagos/

services (following up on its launch in Cairo, Mumbai, and Croatia).[111] Furthermore, Uber faces much competition from Taxify: more Uber Lagos drivers are joining the Taxify platform and are either on both platforms or have switched sides completely.

Existing motorcycle hailing apps include Max.ng and Gokada (each having over 1,000 drivers signed up). Gokada recently raised USD$5.3 million in a Series A round of funding, just as Nigerian internet company Opera launched Oride and SafeBoda announced an expansion to Nigeria.[112] In response to a 2012 ban restricting commercial motorcycles with less than 200-cylinder capacity (which applies to a majority of *okada* brands), Gokada and Max.ng have made attempts at maneuvering the ban but with limited success. For this reason, Gokada hired a former Lagos State Employment Trust Fund staffer as its first director of government and regulatory affairs.

D. Interventions/Projects

Lagos Urban Transport Project[113]: A World Bank-funded initiative launched in 2002 and expanded in 2010 (LUTP2), the project introduced bus rapid transit (known as BRT-Lite because it does not apply all the "classical" features of a BRT, i.e. level loading and fancy stations) with goals to expand to other cities such as Kano, to construct pedestrian overpasses, to increase capacity support for the Lagos Metropolitan Transport Authority (LAMATA), and to expand a transport fund (which enabled LAMATA to meet 60 percent of its operational funding requirements).

Lagos Bus Reform Initiative: Lagos State government announced the launch of 5,000 new commercial buses to replace *danfo* buses.[114]

Bus Rapid Transit (BRT Lite): Initiated and funded through the Lagos Urban Transport Project, BRT Lite runs 22 kilometers radially out of the Central Business District on Lagos Island (on a single route) and is operated by PRIMERO Transport Services (private-sector), Lagos Bus Services Limited (LAGBUS), and the First BRT Cooperative Society (composed of members of the National Union of Road Transport Workers operating on the BRT corridors).[115] Since its implementation in 2008, the Lagos BRT has a daily ridership of 200,000 and captures 25 percent of commuters along the Mile 12-CMS corridor.[116] However, most riders usually take other modes of public transport to reach BRT bus stops.

Interstate Bus Terminals Project: Lagos State government has enlisted the help of the Global Infrastructure Facility to test the feasibility of adding interstate bus terminals at gateway locations outside city limits.

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[111] https://www.bloomberg.com/news/articles/2019-06-27/uber-plans-to-launch-boat-taxis-in-nigeria-s-biggest-city-lagos

[112] https://qz.com/africa/1628649/lagos-motorcycle-startups-gokada-max-safeboda-fight-for-market/

[113] http://documents.worldbank.org/curated/en/410431469427889576/pdf/103068-ppa-P074963-PUBLIC-IEG-r-nigeria-0716.pdf

[114] https://lagosstate.gov.ng/blog/2019/03/04/lagos-bus-reform-initiative-narrative/

[115] https://sustainabledevelopment.un.org/content/dsd/susdevtopics/sdt_pdfs/meetings2010/egm0310/presentation_Orekoya.pdf

[116] http://unhabitat.org/the-state-of-african-cities-2014/

Light Rail Transit: Lagos has developed plans for a rapid transit system (blue and red train lines) which they plan to finance through a Design, Build, Operate, and Transfer model. In this model, the Lagos State Government would "inject capital on building the tracks, bridges, and stations and the private sector can focus on rolling stock, depot equipment, communication, and control equipment."[117] This model would be further extended to the development of water transport systems, roads, and highways. The light rail transit initiative also includes **Eko Rail**, which will operate on the blue line, will utilize through-tickets for buses, and is expected to have seven times as much carrying capacity as the BRT.[118]

Cable Car Transit: The Lagos Cable Car project emerged from the Strategic Transport Master Plan and is planned for set up on the corridor linking Apapa with Lagos Island, Obalende/Ikoyi, and Victoria Island. It is expected reduce journey times up to 70 minutes each direction.[119]

Eko Atlantic: Eko Atlantic is a new city planned for a peninsula (made of reclaimed land) on Victoria Island. The southern edge of the city will feature the "Great Wall of Lagos" that seeks to protect the coastline from erosion and the city from storms/rising sea levels. There are concerns that the wall will divert storm surges to lower-lying, more vulnerable areas of Lagos.

Lagos State Water Transport Program: The Lagos State master plan for transportation calls for the launch of 11 passenger ferry routes with services for commuters.

Truck Parking and Lagos Ports Access Facility: Lagos State government has enlisted the help of the Global Infrastructure Facility to test the feasibility of developing a satellite truck parking and holding facility, integrated with a wider port management system.

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[117] Hoelzel, Fabienne. *Urban Planning Processes in Lagos: Policies, Laws, Planning Instruments, Strategies and Actors of Urban Projects, Urban Development, and Urban Services in Africa's Largest City.* Abuja: Heinrich Böll Stiftung Nigeria, 2018. Print.

[118] https://thecityfix.com/blog/future-sustainable-transport-lagos-nigeria-eko-rail-brt-cable-car-ferry-climate-kasope-aleshinloye/

[119] https://www.trico-capital.com/projects/view/1/Lagos-Cable-Car-Transport-Project

6.4 LUANDA, ANGOLA

ANGOLA	
Population: 30,355,880 (2018 est.) **Population Growth Rate:** 3.49% (2018 est.) **Median age:** 15.9 years	
GDP: USD$193.6 billion (2017 est.) **GDP Per Capita:** USD$6,800 (2017 est.)	
City of Intervention: Luanda	
Urban Population: 65.5% of total population (2018 est.) **Urbanization Rate:** 4.32% annual rate of change (2015-20 est.)	
Land Area: 1,246,700 sq km **Total Roadways:** 26,000 km (2018) **Paved Roadways:** 13,600 km (2018) **Unpaved Roadways:** 12,400 km (2018) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi-Scalar Governance

Since its independence in 1975, Angola has been ruled by The People's Movement for the Liberation of Angola. The party was also engaged in a 27-year civil war with political opposition that only ended in 2002. Longtime president Jose Eduardo dos Santos's chosen successor, Joao Lourenco, was elected in 2017. While Lourenco has changed some of Santos's old leadership, power remains highly concentrated around the president, with a patronage system extending from the president's office and often circumventing official channels.

Angola has two levels of subnational governments, composed of 18 provinces, 163 municipalities, 376 communes, and 1671 towns. Sub-municipal entities such as traditional authorities are recognized, and municipalities are considered independent budget units. Luanda itself is administered by the national government; however, the planning and finance ministries have seen unusually high ministerial turnover and Angola's strongest institution remains the parastatal oil company – Sonangol.[120]

In 2011, the government adopted new administrative divisions for Luanda and the adjacent province of Bengo. Six of Luanda's nine municipalities were joined with the municipality of Luanda to become the City of Luanda. Meanwhile, the new municipality of Belas was created in the area that covers new developments such as the New City of Kilamba.

[120] While it is considered by many to be professionally run (e.g. negotiating the strong concession agreements with oil companies), it also plays a number of blurred roles: as taxpayer, investor of public funds, concessionaire, and a sector regulator. https://www.cfr.org/backgrounder/angolas-political-and-economic-development

B. Urban Policy

Plans and policies that govern urban development across Angola include: [121]

- *National Development Plan*
- *Vision 2025*
- *National Reconstruction Plan*122
- *National Urbanism and Housing Programme*
- *Luanda 2030 (metropolitan master plan)*
- *Luanda Urban Poverty Program*

The **National Development Plan (2013-2017)** was Angola's first five-year national plan. It calls for accelerated infrastructure development (i.e. logistics and transport corridors) and improvement in public transportation at the municipal, provincial, and inter-provincial levels. The **Public Investment Plan** supports the rehabilitation of transport infrastructure, while a **National Transport Sector Master Plan** is a work-in-progress.[123]

In 2015, the government launched the **Metropolitan Master Plan of Luanda – Luanda 2030**, with the aim of modernizing the city's infrastructure to accommodate population growth.[124] Approved by the newly-elected government in February 2018, one of the main pillars of the master plan is the transportation sector. The plan notes the installation of an above ground urban rail that would include a connection to the new international airport. Global firms –Mobility in Chain, BroadwayMalyan, Deloitte, Aurecon, University of Lisbon, and Angola's Urbinvest – are behind the plan.

C. Climate Change/Sustainability

Angola's **National Adaptation Programme of Action** lays out a vision to promote the sustainable use of the environment and natural resources through alternative renewable energies, institutional cooperation, and integration of adaptation principles with infrastructure and economic development. The **National Development Plan 2013-2017** promotes afforestation and reforestation, decentralization and diversification of energy sources, and the improvement of public transportation.

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[121] Although not approved or implemented, the first few comprehensive master plans for Luanda were developed by the French and Cubans.

[122] Primary focus was on real estate and infrastructure.

[123] https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Angola%20-%20Study%20for%20National%20Transport%20Sector%20Master%20Plan%20Update%20-%20Appraisal%20Report.pdf

[124] https://www.export.gov/article?id=Angola-Transportation-Aviation-and-Rail, https://www.broadwaymalyan.com/projects/luanda-city/

II. INFRASTRUCTURE & TRANSPORT

A. Existing Infrastructure

Rehabilitation and expansion of the nation's ports, highways, and railways are seen as essential to transforming Angola into a logistical hub of considerable importance in Southern Africa.[125] Angola's civil war destroyed the roads, railways, and bridges built during Portuguese rule as well as existing agricultural infrastructure. In the post-war period, Angola spent USD$120 billion on reconstruction and currently spends USD$4.3 billion per year on infrastructure (14 percent of GDP).[126] Much of this funding came from the 2006-2014 oil boom and oil-backed Chinese loans. Despite these investments, Angola's transportation infrastructure remains among the poorest in the world.[127] Poor governance of investments often led to mismanagement of investments,[128] with much of these investments channeled into satellite towns as well as road and railway infrastructure. [129] While the Angolan state is the ultimate owner of all land,[130] a 2004 land law removed the legality of good-faith occupation, [131] thus making it extremely difficult to legally register land.

Rail: As of 2013, Angola has 2,852 kilometers of railways. Main railway lines include Caminhos de Ferror de Luanda (Luanda Railways); Caminhos de Ferro de Benguela (Benguela Railways); Caminhos de Ferro Namibe (Moçâmede Railways). In 2015, GE Transportation signed a contract to provide 100 locomotives, which will be concentrated in the Benguela and Moçamedes lines for cargo use and supporting mining development in southwest Angola.[132]

Ports: Major ports include Cabinda, Lobito, Luanda, Namibe, and Angola Soyo. Angola's international trade is entirely dependent on the Port of Luanda, which account for 95 percent of imports.[133] However, the port faces serious congestion problems, so traffic has been increasingly diverted to Walvis Bay in Namibia.

Roads: The total road network is about 76,000 kilometers, much of which needs significant repairs. Roads have been the principal priority of reconstruction plans and are seen as essential to transport and logistics, specifically national development corridors.[134] Challenges to road repair and construction efforts include the estimated seven million land mines, budget gaps, lack of skilled labor, and supply-chain bottlenecks. In response to some of these challenges, the government created a Road Fund in

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[125] https://www.pwc.com/gx/en/transportation-logistics/publications/africa-infrastructure-investment/assets/angola.pdf

[126] http://siteresources.worldbank.org/ANGOLAEXTN/Resources/AICD-Angola_Country_Report.pdf

[127] However, during 2003–2007, infrastructure improvements added 1 percentage point to the per capita growth rate, which is substantial compared with other African countries (Foster and Pushak, 2011).

[128] https://www.chathamhouse.org/sites/default/files/publications/research/2018-09-14-angola-infrastructure-ambitions-kirk-jensen-final.pdf

[129] Most satellite town development has occurred since 2012 but has had a limited impact on most of Luanda's population.

[130] http://www.comissaoconstitucional.ao/pdfs/constituicao-da-republica-de-angola-versao-ingles.pdf

[131] http://www.no-vox.org/IMG/pdf/afr120012007en.pdf

[132] https://www.export.gov/article?id=Angola-Transportation-Aviation-and-Rail

[133] https://www.pwc.com/gx/en/transportation-logistics/publications/africa-infrastructure-investment/assets/angola.pdf

[134] http://siteresources.worldbank.org/ANGOLAEXTN/Resources/AICD-Angola_Country_Report.pdf

2015. Financing for land infrastructure in Luanda, particularly the secondary roads system, is obtained by the government from both a 40 percent of fuel tax and a 40 percent of vehicle construction tax.[135] **Corridors:** Angola is part of two major trans-African corridors – the first runs from North to South, linking Tripoli in Libya with Cape Town in South Africa, and the second runs from East to West, linking Beira in Mozambique with Lobito in Angola. The Lobito corridor railroad (Benguela railway) linking Angola, the DRC, and Zambia was rebuilt by the Chinese after being destroyed during the war.

B. Existing Transportation

Luanda's demand for transport reaches about 2.8 million journeys a day. Current use of modes of public transportation in Luanda are bus, bikes, taxis, rental cars, and the Luanda railway. Major transportation challenges include lack of funding, inadequate traffic regulations, congestion, road traffic accidents, poor road conditions, and fuel station shortages.[136] Moreover, the plurality of companies in the transport market has transitioned to a system of different payment models, verbal contracts, and almost non-existent social protection.

Bus: Transporte Colectivo Urbano de Luanda (TCUL) and Macon (private bus company created in 2001) are Luanda's largest inter-provincial bus companies. TCUL has been the public transit company of Luanda since 1988, when it was founded to replace Empresa de Transporte Público (ETP) buses called *machimbombos* (Angolan expression for ordinary buses).[137] TCUL is considered to be ineffective in maintaining normal and frequent public transport.[138] C*andongueiros* (long-distance minibuses encompassing vehicle owners, drivers, fare collectors, passenger coaxers, and vehicle washers) therefore grew, and over time became well organized.[139] After the government rescinded its monopoly on passenger transport, *candongueiros* began to operate legally.[140] Currently, *candongueiros* satisfy about 45 percent of Luanda's transport demands. Despite the launch of a minibus workers union, ATL, competition has grown between five bus companies including Macon, Transporte Urbano Rodoviário de Angola (TURA), Angoaustral, and SGO, thus challenging the dominance of minibuses in the market.

Taxi: There are four licensed taxi companies in Angola – Afri-taxi, Morvic, Arvorense Taxi and Rogerius Taxi. Afri-taxi is the largest company with a fleet of 300 vehicles.[141] *Kupapatas* (an Angolan expression for 'hug me' or 'hold me tight') are motorcycle-taxi drivers who are typically unlicensed, unregistered, and operate largely in the Huambo Province. The Provincial Direction of Transport and Communications estimates that there are 500 to 700 *kupapatas* in Huambo.

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135 http://habitat3.org/wp-content/uploads/Angola-Habitat-III-Final-Report-English.pdf

136 Rorison, Sean, and Oscar Scafidi. (2019) "2." *ANGOLA*, by Mike Stead, BRADT TRAVEL GUIDES.

137 ETP was considered illegal, inefficient, and incapable of adapting, and their *machimbombos* buses did not service Luanda's expanding periphery

138 In response to worker strikes in 2018, TCUL is reducing its 80-bus fleet to 20: https://www.angop.ao/angola/en_us/noticias/economia/2018/9/43/TCUL-workers-strike-reduces-firm-activity-percent,953e14ce-f33b-40bc-bea0-c17d23fee174.html

139 https://angolaenglish.wordpress.com/2014/06/18/luandas-candongueiro-routes/

140 According to the Provincial Direction of Transport and Communications, only 1100 of the 4500-5500 minibuses in Luanda are legal.

141 Rorison, Sean, and Oscar Scafidi. "2." *ANGOLA*, by Mike Stead, BRADT TRAVEL GUIDES, 2019.

Rental Cars: There are special-hire taxis, which are privately-owned vehicles with no defined routes. Cars can also be rented from global companies – Hertz, Avis, Budget, Europcar and Sixt.

Luanda Railway: The railway, also provided by TCUL, starts with Luanda and reaches Dondo and Malanje. There are three levels of tickets: primeira (priciest), expresso, and tramway (cheapest). Earlier this year, railway workers went on strike over better working conditions and pay.[142]

C. Infrastructure Stakeholders

The government of Angola has made many steps to improve infrastructure and transportation, as outlined in their various plans. The Provincial Direction of Transport and Communications, in charge of the transport sector, has also made efforts to formalize the minibus sector through the introduction of a permit system, minimum labor standards, safety regulations, and revenue taxation. The government's own functions are muddled by the operations of its parastatal oil company, Sonangol. Sonangol carries out many state fiscal activities (i.e. investing in public funds), has a network of subsidiaries and related companies in almost every sector of Angola's economy, and owns SonAir.

Regarding foreign involvement, the state ruled that 30 percent of internationally financed housing and urban infrastructure projects should be allocated to Angolan companies.[143] The World Bank financed a number of programs including the rehabilitation of 150 kilometers of trunk roads and 600 kilometers of feeder roads. The European Union financed a feasibility study that covers a 1,161-kilometer road section on Lobito Corridor. JICA carried out a study for a rehabilitation project in the Port of Namibe. With the "infrastructure for oil" trade agreement, China is making significant strides in the construction of large railways, roads, and housing projects. In return, Angola became China's main supplier of oil, even overtaking Saudi Arabia in 2010.[144]

Within paratransit, the establishment of Luanda's minibus workers union, ATL, has helped with the legalization of *candongueiros*. ATL provides legal protection for members, representing them in collective bargaining and advising the National Direction of Finance on fares. The Road Transport Workers' Trade Union (STTRA), founded in 1997 and inclusive of members from ordinary bus companies and related sectors, also focuses on collective bargaining and providing legal protection. STTRA however has not attracted members from the *candongueiros*.

D. Interventions/Projects

Bus Rapid Transit and Rail Transport: An announcement was made in 2015 regarding the development of a BRT,[145] and Odebrecht, a Brazilian firm, appears to be behind it.[146] The Ministry of Transport is also planning to develop a network of rail transport, with most fast tracks to be implemented on the *Benfica-Cacuaco* road and *21 de Janeiro* and *Deolinda Rodrigues* roads.

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142 https://www.africanews.com/2019/01/25/angolan-railway-workers-strike-over-better-pay-conditions//

143 Cain, Allan. "Alternatives to African Commodity-Backed Urbanization: the Case of China in Angola." *OUP Academic*, Oxford Review of Economic Policy, 6 July 2017, academic.oup.com/oxrep/article/33/3/478/3926164#90802475.

144 https://www.pwc.com/gx/en/transportation-logistics/publications/africa-infrastructure-investment/assets/angola.pdf

145 https://www.angop.ao/angola/en_us/noticias/transporte/2015/8/40/Luanda-new-BRT-system-start-operating-with-240-buses,442f004d-5c7a-49f4-9c54-957d85e0e5dd.html

146 https://www.odebrecht.com/en/communication/news/rapid-transit-luanda

Redevelopment of the Bay of Luanda: In 2003, plans were commissioned by the Ministry of Public Works for the redevelopment of the bay. The redevelopment would encompass the creation of pedestrian spaces, cycle lanes, sports fields, and event spaces.[147]

Marginal da Corimba Project: The Marginal da Corimba Project is a large-scale waterfront development scheme that will be created over a 10-kilometer stretch of coast in front of Luanda. It will serve for the construction of the Marginal da Corimba highway as well as a fishery port, marina, and land development.[148]

Construction of the International airport of Catumbela: Financed and managed by a consortium of Chinese companies and Odebrecht, the International Airport of Catumbela was built to serve the central part of Angola and link it up with important foreign destinations. The runways and airport buildings were extended and upgraded to international standards. As such, they are now prepared to receive large airplanes and operate regional and long-haul commercial and cargo flights.[149] The airport is expected to begin operating by 2020.

Construction of the Barra do Dande Port: To reduce traffic at the Port of Luanda, the Government of Angola approved the construction of a commercial port at Barra do Dande (north of Luanda) in 2011. Additionally, the Port of Lobito, about 500 kilometers south of Luanda, is to be extended and rehabilitated for USD$1.25 billion.

Upgrade of the Benguela Railway[150]: The Benguela Railway (Caminho de Ferro de Benguela), is another important component of the Lobito Corridor, running for approximately 1,345 kilometers. Extensive rehabilitation and upgrade of the Benguela Railway have been done in its full extension, from Lobito to Luena. This program was carried out by the Angolan government, and in August 2012, the first train reached the railway station of the far eastern city of Luena, after an interruption of more than 30 years, caused by the civil war.

Kilamba New City: Developed by China International Trust and Investment Corporation for a reported USD$3.5 billion, Nova Cidade de Kilamba, is a new town with social housing for 80,000 people. It is located about 19 miles southeast of Luanda and off a highway recently renamed after Fidel Castro. A private Angolan company, Delta Imobiliaria, was given the lucrative contract to sell the units, even though the company's owners included high-ranking government officials with direct influence over reconstruction projects.[151]

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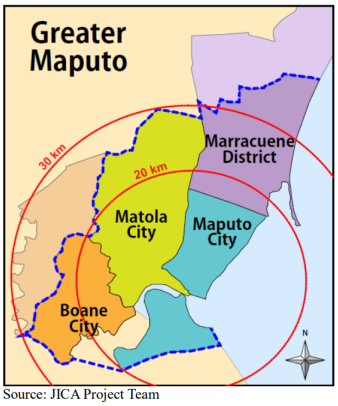
[147] Croese, S., 2016. Urban Governance and Turning African Cities Around: Luanda Case Study. Partnership for African Social and Governance Research Working Paper No. 018, Nairobi, Kenya.
[148] https://www.dredgingtoday.com/2017/04/06/royal-haskoningdhv-to-design-luanda-reclamation-project/
[149] The current international airport in Luanda is not TSA certified.
[150] http://portandcorridor.org/wp-content/uploads/2013/03/Lobito-Lusaka-corridor.pdf
[151] https://www.nytimes.com/2017/06/24/world/africa/angola-luanda-jose-eduardo-dos-santos.html

6.5 MAPUTO, MOZAMBIQUE

MOZAMBIQUE	
Population: 27,233,789 (as of July 2018) **Population Growth Rate:** 2.46% (2018) **Median Age:** 17.3	 Source: JICA Project Team
GDP: USD$37.09 billion (2017) **GDP Per Capita:** USD$1,300 (2017)	
City of Intervention: Maputo	
Urban Population: 36% of total population (2018) **Urbanization Rate:** 4.35% annual rate of change (2015-2020 est.)	
Land Area: 799,380 sq km **Roadways:** 31,083 km (2015) **Paved Roadways:** 7365 km (2015) **Unpaved Roadways:** 23,718 km (2015) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi- Scalar Governance

Sixteen years following Mozambique's independence in 1975 and civil war (1975-1992), the government of Mozambique began to decentralize. The Minister of State Administration pushed for greater citizen involvement at local levels of government. Expanding citizen engagement led to the question of what role traditional leaders, or chiefs who wield strong community influence, would play in local governance.[152] Last year, President Filipe Nyusi announced plans to change the constitution and to give political parties more power in the provinces. The Ministry of State Administration and Public Administration are also progressively implementing a decentralization process aimed at transferring the central government's political and financial responsibilities to municipalities (Laws 2/97, 7-10/97, and 11/97).[153]

An elected Municipal Council (composed of a Mayor, a Municipal Councilor, and 12 Municipal Directorates) and Municipal Assembly are the main governing bodies of Maputo. The city relies on 1998 package of Municipal Laws, the Programme of Strategic Objectives and Priority Actions for 2003-2008, and the 1997 census and Municipal regulations (such as the Land Law) for baseline decision-making.[154]

[152] Makgetla, Tumi. *Embracing the Power of Tradition: Decentralization in Mozambique, 1992-2000*. Working paper. Princeton: Princeton U, 2010. Print.
[153] http://urbanresiliencehub.org/city-context/maputo/
[154] https://unhabitat.org/mozambique-cities-profile-maputo-nacala-and-manica/

B. Urban Policy

Plans and policies that govern urban development and planning across Mozambique include:

- *Mozambique National Development Strategy 2015-2035*
- *Mozambique Urban Structure Plan*
- *Mozambique Municipal Development Plan*
- *Mozambique Road Sectora Strategyy 2007-2011*
- *Mozamibque Roads and Bridges Management and Maintenance Program*
- *Maputo City Urban Structure Plan 2008-2010*
- *Maputo City Council Fiver-Year Program 2014-2018*
- *Comprehensive Urban Transport Master Plan for Greater Maputo*

In 2011, Mozambique adopted a new law introducing a dedicated public–private partnership (PPP) unit in its Ministry of Finance, providing a regulatory framework for PPPs and mega-projects.[155] In 2012, the government adopted **ProMaputo**, a development program that also serves as an urban plan, land use, and infrastructure development policy for Maputo and Maputo's largest suburb, Matola. One of ProMaputo's tools of reform is a participatory budget.[156] The **Comprehensive Urban Transport Master Plan for Greater Maputo** addresses the lack of policies and plans for a public transport network (BRT and commuter rail) and road improvements. It also includes a pre-feasibility study for priority projects identified in the master plan.[157] The government's action plan for the reduction of absolute poverty, **PARPA II**, seeks to improve slum conditions through the promotion of sustainable land-use practices.[158] In addition to domestic plans, regional plans such as the Southern Africa Development Region's spatial development initiatives exert influence on urban development and transportation in Mozambique, particularly the Nacala, Maputo, Beira, Zambezi Valley, Mtwara, and Limpopo Valley development corridors.[159,160]

C. Climate Change/Sustainability

Mozambique launched the National Strategy for Adaptation and Mitigation of Climate Change and Green Economy Action Plan,[161] which outline initiatives for low-carbon mitigation and development. Such initiatives include establishing PPPs to expand gas-powered public and private vehicle support infrastructure, introducing PPP toll roads, creating tax-exemption initiatives for sustainable transport technologies, and offering road tax reduction incentives for compliance with safety standards. Mozambique also participates in global resilience initiatives such as the Pilot Programme for Climate

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155 Carolini, Gabriella Y. "Sisyphean Dilemmas of Development: Contrasting Urban Infrastructure and Fiscal Policy Trends in Maputo, Mozambique." *International Journal of Urban and Regional Research* 41.1 (2017): 126-44.
156 Ibid
157 http://open_jicareport.jica.go.jp/pdf/12152609.pdf
158 Nearly 75 percent of the city's population lives in informal settlements.
159 https://www.sadc.int/themes/infrastructure/transport/transport-corridors-spatial-development-initiatives/
160 http://sadcindustries.net/SDIs.html
161 https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Transition_Towards_Green_Growth_in_Mozambique_-_Policy_Review_and_Recommendations_for_Action.pdf

Resilience, which is a Climate Investment Funds program focused on increasing resilience in agriculture, transport, and the urban environment.

II. INFRASTRUCTURE & TRANSPORT

A. Existing Infrastructure

Most of Mozambique's infrastructure and transportation system experienced massive restructuring due to severe damages during the civil war. In addition, a significant amount of land remains unbuilt; more than 30 percent of the land within three miles of the central business district in Maputo is unbuilt.[162] Transport infrastructure across Mozambique has developed mainly to serve neighboring countries because of its key geographic position (it is the main transit route for exports to Swaziland, Malawi, Zambia, Zimbabwe, and the Gauteng region in South Africa).[163]

Air: Mozambique has 11 airports with scheduled flights. The national carrier, Linhas Aéreas de Moçambique (LAM) or Mozambican Airlines, is not allowed to land in the European Union because it does not meet European safety standards. Some of the runways are also in poor condition, such that the tires of LAM's airplanes last half as long as they should.[164] Local airports are being upgraded in collaboration with foreign companies such as Brazilian firm, Odebrecht.

Rail: Mozambique has 4,787 kilometers of railways. Mozambique Ports and Railways operates three rail routes from Maputo to Swaziland via Boane; to South Africa via Matola; and to Malawi via Manhica. The Ministry of Transport and Communications contracted transportation-planning firm Systematica for the development of an overall study on existing and potential extensions of Mozambican national railway network.[165] The government aims to link the south and the north of the country along with the provincial capital and to facilitate access to areas with extractive industries.[166]

Ports: Maputo plays a critical role as a passageway to South Africa and other inland areas. The Bay of Maputo was dredged years ago to enable larger cargo ships to pass and to add a passenger/vehicle ferry board.[167] In addition, major upgrading and expansion projects are underway with Mozambique's three major ports (Nacala, Maputo, and Beira), with a majority of these projects being led, financed, and/or operated mainly by Brazilian, Portuguese, Chinese, and Indian firms.

Roads/Highways: Mozambique's road density per land area is low due to the large size of the country and poor condition of roads. Additionally, the road network itself is limited: the Estrada Nacional One, or National Highway One, is the only road connecting the country's capital, Maputo, to the north and south. According to the Comprehensive Urban Transport Master Plan for Greater

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[162] https://www.theigc.org/wp-content/uploads/2017/08/Secure-legally-enforceable-and-marketable-land-rights-for-urban-development.pdf

[163] https://www.imf.org/external/pubs/ft/dp/2014/afr1404.pdf

[164] Scholvin, Sören, and Johannes Plagemann.
Https://www.files.ethz.ch/isn/177317/saia_sop_175_scholvin%20&%20plagemann_20140225.pdf. Rep. South African Institute of International Affairs, Feb. 2014. Web. 26 June 2019.

[165] http://www.systematica.net/project/mozambique-north-south-railway/

[166] https://www.imf.org/external/pubs/ft/dp/2014/afr1404.pdf

[167] Carolini, Gabriella Y. "Sisyphean Dilemmas of Development: Contrasting Urban Infrastructure and Fiscal Policy Trends in Maputo, Mozambique." *International Journal of Urban and Regional Research* 41.1 (2017): 126-44.

Maputo, national and regional roads are managed by the National Road Administration (ANE), while parts of the arterial roll (e.g. N4 toll road) were developed by the private sector. Roads that are not managed by the ANE, are managed by each municipal (district) infrastructure department with the goal of maintaining road condition.

Transport Corridors[168]: Mozambique has three transport and trade corridors of significance – Nacala, Maputo, and Beira. The **Nacala Corridor** (which includes the Port of Nacala and an 800-kilometer railway line to Malawi) was developed to increase exports through the Port of Nacala and is considered the cheapest route to transport cargo from Zambia, Malawi, and Mozambique. It is due to have roads built to link Zambia and Malawi with Nacala and to have a passenger line to connect Chipata in Zambia with Mozambique via Malawi. The **Maputo Corridor**, created in 1996, connects South Africa's Gauteng, Mpumalanga, the Nkomazi Special Economic Zone, and the Port of Maputo. It incorporates the Port of Maputo, road, rail, the special economic zone, border posts, and terminal facilities. In 2000, a French-led international consortium opened a private toll road running from Maputo to South Africa's industrial hub under a 30-year concession. The **Beira Corridor** mainly serves Zimbabwe and the mining interests of Brazilian mining giant, Vale. It is managed by a Dutch port operator with the railway line operated and managed by an Indian firm. The **Beira Agricultural Growth Corridor Initiative** was launched at the World Economic Forum by a consortium of agribusinesses seeking to upgrade the farmland along the corridor.

B. Existing Transportation

Modes of public transport in Maputo are as follows: walking (45 percent), *chapas* (32.9 percent), private car (10.2 percent), bus (9.2 percent), rail (0.6 percent) and other (1.3 percent).[169] Maputo's transport plan was produced by the Japanese International Cooperation Agency (JICA).

***Chapas*:** *Chapas* are typically 15-seat minibuses or 25-seat medium-sized vehicles owned by private individuals, many of whom own only one vehicle. Drivers rent *chapas* at a daily rate and directly pay running costs, including fuel, tires, minor maintenance, and the salary of the conductor. The *chapas* route network developed over many years and was originally based largely on the network operated by Transportes Publicos de Maputo (Maputo Bus Company), with additional routes added from time to time. As a result, there are an estimated 4,000 to 4,500 *chapas* operating on roughly 130 routes.[170] This may soon change as recommendations are being made to replace *chapas* with large-scale buses, BRT, or rail, although there is recognition of the need for mini-buses in suburban areas and that the replacement of *chapas* could create political tensions.[171] The Maputo transport plan suggests possible compensation to *chapas* operators including "the opportunity to own shares in newly established vehicle operating companies" and a job-creating program.[172]

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168 http://www.blog.kpmgafrica.com/mozambiques-3-transport-corridors-hold-vast-potential/

169 Tembe, Atanasio, Fumihiko Nakamura, Shinji Tanaka, Ryo Ariyoshi, and Shino Miura. "The Demand for Public Buses in Sub-Saharan African Cities: Case Studies from Maputo and Nairobi." *IATSS Research* (2018): n. pag. Print.

170 http://open_jicareport.jica.go.jp/pdf/12152609.pdf

171 Klopp, Jacqueline and Clemence Cavoli. "Chapter 5: The paratransit puzzle: mapping and master planning for transportation in Maputo and Nairobi." *Urban Mobilities in the Global South*. London: Routledge, 2018. 95-111. Print.

172 Ibid

Bus[173]: Urban transportation was nationalized upon independence and mostly provided by the state-owned bus company, Transportes Publicos de Maputo (TPM). There are approximately 400 full-sized (over 50 seats) buses operating in Maputo, with most of them operated by TPM and few owned by private individuals. TPM runs on 60 routes that overlap with *chapas* and has said that the number of passengers has decreased from 80,000 to 30,000 since 2010.[174]

Commuter Rail: Maputo's Caminhos de Ferro de Moçambique (CFM) railway station supports both passenger and cargo transport and has been featured in several magazines as among the world's most beautiful train stations.[175]

***Tuk-tuk* or *Txopelas*:** Three-wheeler taxis resembling the Indian rickshaw, *tuk-tuks* or *txopelas* are less expensive than taxis and mostly considered illegal (for not having licenses).

C. Infrastructure Stakeholders

As evidenced by JICA's role in producing Maputo's transport plan, Mozambique is highly dependent on international and private-sector assistance: since 1990, it has engaged in 17 PPPs.[176] Furthermore, infrastructure development (especially around transport corridors and ports) in Mozambique is tied to neighboring countries Zimbabwe, Zambia, Malawi, and South Africa.

Paratransit: The Maputo Association of Road Transports (ATROMAP) represents *chapas* and was involved in a digital mapping project to document *chapas* routes. Maputo City Council also supported the creation of a cooperative representing *chapas* owners, called COOTRACK1 and granted this association the right to buy 50 government buses.[177]

Regional and International: JICA produced the Comprehensive Urban Transport Master Plan for Greater Maputo while the Southern Africa Development Community and Maputo Corridor Logistics Initiative (MCLI) have emerged as influential corridor management institutions behind many of Mozambique's development corridors.

D. Interventions/Projects

Bus Rapid Transit[178]: There are five bus rapid transit development projects underway including Baixa-Maguanine, Zimpeto-Benfica-Brigada-Maputo, Malhampswene-Ceres-Baixa, Casa Branca-Joaquim Chissano-J.Nyerere, Xiquelene-Museu-Baixa, and Albasine. One BRT project, funded with a USD$235 million loan from a Brazilian development bank, was suspended in 2016 for corruption.[179]

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173 Tembe, Atanasio, Fumihiko Nakamura, Shinji Tanaka, Ryo Ariyoshi, and Shino Miura. "The Demand for Public Buses in Sub-Saharan African Cities: Case Studies from Maputo and Nairobi." *IATSS Research* (2018): n. pag. Print.

174 Gascon, Mireia, David Rojas-Rueda, Sergio Torrico, Faustino Torrico, Maria N. Manaca, Antoni Plasència, and Mark J. Nieuwenhuijsen. "Urban Policies and Health In Developing Countries: The Case of Maputo (Mozambique) and Cochabamba (Bolivia)." *Public Health - Open Journal* 1.2 (2016): 24-31. Print.

175 https://time.com/3816411/beautiful-train-stations/

176 https://pppknowledgelab.org/countries/mozambique

177 Klopp, Jacqueline and Clemence Cavoli. "Chapter 5: The paratransit puzzle: mapping and master planning for transportation in Maputo and Nairobi." *Urban Mobilities in the Global South*. London: Routledge, 2018. 95-111. Print.

178 http://open_jicareport.jica.go.jp/pdf/12152609.pdf

179 https://www.itfglobal.org/sites/default/files/node/resources/files/brt_report.pdf

Mapa Dos Chapas[180]: Initiated in 2014, Mapa Dos Chapas is a mapping project aimed at making the *chapas* system more legible. In collaboration with paratransit associations (i.e. ATROMAP), the project collected and verified data on *chapas* routes and stops. The map came handy in 2016 when new *chapas* routes were licensed.

Maputo-Matola (East-West Axis) and North-South Axis Transport: An initiative outlined in the Comprehensive Urban Transport Master Plan, the Maputo-Matola and North-South transport axes will introduce commuter rail (Gare Rail Line), BRT, and roads for Matola suburban and industrial development.

Nova KaTembe: Considered the ideal passageway for tourists traveling from Maputo to Durban, South Africa, Nova KaTembe is a USD$725 million bridge project led by a new public enterprise, the Empresa de Desenvolvimento de Maputo Sul (or Maputo Sul), in partnership with a private Portuguese consulting and engineering firm and China's EXIM Bank. The China Roads and Bridges Corporation was also awarded a tender to build a ring road around Maputo, which will connect with bridge traffic to and from KaTembe.

Developing Capacity for a Climate Resilient Road Sector[181]: Led and funded by the Nordic Development Fund and African Development Bank, the USD$4.32 million project seeks to make the Nacala road corridor more climate-resilient, while boosting capacity within the National Roads Authority.

[180] Klopp, Jacqueline and Clemence Cavoli. "Mapping Minibuses in Maputo and Nairobi: Engaging Paratransit in Transportation Planning in African Cities." *Transport Reviews* (2019): 1-20. Print.
[181] https://www.ndf.fi/sites/ndf.fi/files/news_attach/ndf_the_road_ahead.pdf

6.6 NAIROBI, KENYA

KENYA	
Population: 48,397,527 (2018 est.) **Population Growth Rate:** 1.57% (2018 est.) **Median Age:** 20	
GDP: USD$163.7 billion (2017 est.) **GDP Per Capita:** USD$3,500 (2017 est.)	
City of Intervention: Nairobi	
Urban Population: 27% of total population (2018 est.) **Urbanization Rate:** 4.23% annual rate of change (2015-20 est.)	
Land Area: 569,140 sq km **Total Roadways:** 161,452 km (2017) **Paved Roadways:** 14,420 km (2017) **Unpaved Roadways:** 147,032 km (2017) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi-Scalar Governance

Since the enactment of a new constitution in 2010, Kenya now functions under a devolved system of government with two levels: national and county (there are 47 lower level county governments). The operation of county governments started soon after elections in March 2013, which included the election of county governors, deputy governors, and representatives. These 47 new county governments oversee certain functions, including the maintenance of local roads, which were previously the responsibility of Kenya's national government. In turn, the county governments receive a share of national revenues; although, they are also expected to mobilize other sources of revenue, such as property and entertainment taxes. Kenya's devolution has faced both progresses and challenges with regards to the devolution of land administration functions, the experimentation of the entire process (i.e. new devolved governments created), and the collapse of three previous levels of administration into one. Moreover, while the county governments are substantially outside the direct control of the national government, they are still subject to national policies and laws approved by Parliament.

The City of Nairobi falls under the Nairobi City Council (NCC), which is governed in its operations by a variety of legal statutes and administrative decrees from the Office of the President and the Ministry of Local Authorities. The Local Government Act, Chapter 265 of the Laws of Kenya is the main legal statute that governs the operations of the NCC.

B. Urban Policy

Plans and policies that govern urban development and transport planning across Kenya include:

- *Vision 2030*
- *Road Sector Investment Programme and Strategy 2010-2024*
- *Kenya Public Private Partnerships Act*
- *Kenya Non-Motorised Transport Policy*
- *Nairobi Integrated Urban Development Master Plan*
- *Nairobi Metro 2030 Plan: A World Class African Metropolis*
- *Nairobi Metropolitan Area Transport Authority Act*
- *Nairobi Metropolitan Urban Transport Master Plan*

With respect to transportation, these plans prioritize the development and enhancement of transport corridors (such as the South Sudan-Ethiopia transport corridor and those linking to Thika highway, Mombasa Road, and newly built by-passes), bus and matatu terminals, metro railway line networks, and legal and institutional reforms. Such developments are aimed at facilitating inter-regional movement of passengers and freight, widening access to local markets, and enhancing connectivity between social and economic centers in the region.[182]

According to **Vision 2030**, Kenya will launch a 50-year multi-modal transport master plan and 20-year road master plan, while also expanding and modernizing aviation, maritime, and rail facilities. The **National Integrated Transport Master Plan** seeks to integrate all transport modes to ensure that investment and location of the transport infrastructure and services are consistent with other public policies. The **Nairobi Integrated Urban Development Master Plan**, on the other hand, plans for Bus Rapid Transit and a light rail system, while omitting mention of informal mass transit except that their stops to discharge or collect passengers caused traffic jams. The **Road Sector Investment Programme** seeks to develop an investment program for Kenya's entire road network, as required by the **Kenya Roads Act 2007**. Nairobi is also looking to set legal and institutional reforms, such as the **Nairobi Metropolitan Area Transport Authority Act**, which established the Nairobi Metropolitan Area Transport Authority.

Furthermore, two new cities are under construction. **Tatu City** is a 1,000+ hectare mixed-use housing development located within Greater Nairobi and 25 minutes from the Jomo Kenyatta International Airport. It is a joint-venture development between the Russian Renaissance Group and Kenyan investors. **Konza Technology City or "Konza City"** is a 20-year, 2,000-hectare, USD$14.5 billion technology hub located in Machakos County, 60 kilometers from Nairobi. Nicknamed "the Silicon Savannah," Konza City project will feature a technology park, science park, university campus, international business district, and space for other commercial and residential properties.

[182] Mustapha, Shakira, and Romilly Greenhill. "An 'Age of Choice' for Infrastructure Financing? Evidence from Kenya." ODI, ODI, 1 Apr. 2017, www.odi.org/publications/10781-age-choice-infrastructure-financing-evidence-kenya.

C. Climate Change/Sustainability

The government of Kenya is taking several measures to tackle climate change through transportation-related initiatives. In their 2012 Climate Change Action Plan, they are considering low-carbon initiatives such as improved passenger and heavy-duty vehicle stock efficiency, use of bioethanol, biodiesel, BRT and LRT, and shift of freight from road to rail.[183] These initiatives would further include policy, regulatory, and economic measures such as congestion pricing, standards for vehicle inspections and emissions, fuel price reform, and pricing and taxation mechanisms. As a result of the Advancing Transport and Climate Strategies Project in partnership with GIZ, Kenya is one of the first countries in East and Central Africa to develop country-specific road transport emission factors.[184]

II. INFRASTRUCTURE & TRANSPORT

A. Existing Infrastructure

The planning, design, and maintenance of existing infrastructure in Nairobi is split across national agencies, urban development and transport departments, and the county government.

Air/Rail/Ports: As of 2013, Kenya has three main ports (Mombasa, Lamu, and Malindi) and 3,806 kilometers of railway. In 2017, President Kenyatta inaugurated the Standard Gauge Railway (SGR), a new railway line connecting Nairobi to Mombasa.[185,186,187] It is expected to carry several thousand passengers a day, cutting the travel time between the cities from nine to four hours. The USD$3.2 billion deal has been compared to Ethiopia's Addis Ababa-Djibouti line launched in 2016 (although Ethiopia's line is more than 250 kilometers longer and is electrified). The loan for this railway project is the country's biggest, amounting to roughly six percent of its GDP.[188]

Roads/Highways: Vision 2030 states that "by 2030, it will become impossible to refer to any region of our country as remote" (GoK, 2007:6). The existing road network is highly concentrated along the Mombasa-Nairobi-Malaba transport corridor and has mixed conditions: seven percent of the road network is paved and in 2010 over half of roads were classified as being in a "poor" condition.[189] Notable completed projects include the Mombasa–Nairobi–Addis Ababa highway corridor, which was completed in 2019 and, according to the African Development Bank, has enabled better and more trade between Kenya and Ethiopia.[190] There are currently three major road projects underway: Nairobi-Thika Highway Improvement Project (THIP), Nairobi Southern Bypass Project, and Nairobi Eastern and Northern Bypass Project. THIP is Kenya's first large-scale transportation infrastructure project and is a spatially and strategically important one: the highway serves a highly populated zone of Nairobi, acting as a main artery for various satellite towns and economic hubs along the corridor,

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183 http://www.kccap.info/phocadownload/final/SC4/Chapter%207%20SC4_%20Transport_FINAL.pdf
184 https://www.changing-transport.org/new-and-improved-data-on-road-transport-in-kenya/
185 http://www.bbc.com/news/world-africa-40092600
186 The SGR will replace the "Lunatic Express" – a railway opened by the British to cement their colonial claims over rival European powers.
187 With future plans to extend to Uganda, Rwanda, South Sudan, and Ethiopia
188 https://www.bbc.com/news/world-africa-40171095
189 https://www.odi.org/sites/odi.org.uk/files/resource-documents/11225.pdf
190 https://www.afdb.org/en/news-and-events/success-stories/nairobi-addis-ababa-road-corridor-boosts-trade-in-east-and-horn-of-africa/

and constitutes an important section of the Great North Road, linking the port of Mombasa and northern Tanzania to inland economic centers. THIP however is designated as a Category 1 project by the African Development Bank, which means it has a high likelihood of adverse and irreversible environmental and/or social impacts.

B. Existing Transportation

Modes of transport (excluding motorcycles) are split as follows: walking (47 percent), cycling (1.2 percent), private car (15.3 percent), matatus/mini-bus (29 percent), bus (3.7 percent), train (0.4 percent), institutional buses (3.2 percent), and other (0.2 percent).[191]

***Matatus*:** *Matatus* are privately-owned, typically Japanese-made, and 14-30-seater minibuses that emerged in the 1950s and today employs over 350,000 drivers, with revenues reaching USD$2 billion annually. [192,193] They were illegal at first but were allowed to compete with formal bus operations in 1973. The *matatu* sector is represented by the Matatu Welfare Association (MWA) and the Matatu Owners Association (MOA). The MOA represents the *matatu* owners and the interests of investors in the *matatu* industry. The association uses legal opposition and strikes to challenge introductions of new legislation, such as the 2004 requirement for public service vehicles to have seatbelts due to the costs.[194] By law, all owners of *matatus* are members of a Savings and Credit Cooperative Organizations (SACCO), which controls one or more routes. It is suggested that the SACCOs often act as cartels and align themselves with members of Kenyan parliament or ministers for protection.[195] Regarding technologies for cashless payments, mapping routes, and pre-booking, the *matatu* industry continues to defy such innovations.

***Boda bodas*:** *Boda bodas* are bicycle and motorcycle taxis found in East Africa with about 1.2 million operating in Nairobi.[196] Drivers are typically members of the Boda Boda Association, which was registered in 2015 and engages directly with government authorities. In recent years, the Nairobi county government banned *boda bodas* from the central business district.

Rail: Kenya Railways Corporation is the nation's main railway with links to Uganda and Tanzania. Since 2006, much of its track and rolling stock has been allocated to a private operating company called Rift Valley Railways on a 25-year concession basis.

Ride-hailing services: Currently, Uber, Little, Taxify, Dubai-based Mondo Ride, MaraMoja, and SafeBoda offer rail-hailing services in Nairobi. The Kenyan Revenue Authority ruled that Uber was not a transportation company and could pay the lower taxation rate of a software company.[197]

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[191] http://www.kccap.info/phocadownload/final/SC4/Chapter%207%20SC4_%20Transport_FINAL.pdf
[192] In response to the demand not met by the British-established formal bus company, Kenya Bus Service
[193] https://www.citylab.com/perspective/2018/12/nairobi-kenya-bus-business-district-ban-mike-sonko/578737/
[194] The then 2004 Minister of Transport, John Michuki, was a prime supplier of seatbelts to the matatu owners.
[195] https://www.citylab.com/transportation/2017/08/the-future-of-nairobis-informal-transit/537573/
[196] https://www.nation.co.ke/oped/letters/Boda-bodas-should-remain-in-the-city-centre-but-regulated/440806-4322494-k99hai/index.html
[197] https://www.citylab.com/transportation/2017/08/the-future-of-nairobis-informal-transit/537573/

C. Infrastructure Stakeholders

Government: The Kenyan and Nairobi governments have introduced new and restructured existing agencies, such as the National Transport and Safety Authority,[198] renewed financing,[199] and pursued initiatives (such as car-free Wednesdays and Saturdays)[200] in an effort to improve infrastructure and tackle transportation challenges.

International: A large share of planned government expenditure in roads development (50 percent),[201] rail (77 percent), and energy (65 percent) is reliant on external sources of finance.[202] The World Bank, African Development Bank, GIZ, and the Sustainable Transportation Solutions for East African Cities are actively supporting transportation initiatives such as launching BRT in Nairobi.

Ride-hailing companies: Uber and its rival Little, launched in 2015 and 2016, respectively. Little was established by Kenya's largest mobile operator, Safaricom, and was resolute about offering cheaper and more localized solutions.[203, 204] In response to growing competition, Uber launched a UberSELECT, a service allowing users to opt for a slightly more expensive trip with a higher-rated driver with a newer car. Uber drivers clock in about 10,000 trips a day in contrast to Little, which registers 3,500 trips. Uber, however, is facing a number of protests from local taxi drivers and, in response to fare rate cuts, a group of Uber and Little drivers organized their own union – the Kenyan Digital Taxi Association.[205,206]

D. Interventions/Projects

Projects like the Smart Matatu fleet management and driver tracking project as well as the Magic Bus's tracking and ticket purchasing both point to a better tracked and managed future for the backbone of Nairobi's transportation network.

Bus Rapid Transit: The Ministry of Transportation announced plans for nine rapid transit corridors, three of which will be bus rapid transit: Athi River to Kikuyu town; Thika to Nairobi Central Business District; and the Jomo Kenyatta International Airport to Nairobi Central Business District.

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198 Established in 2012, NTSA's focus has been on behavior change, i.e. requiring *matatu* associations to submit quarterly reports on collisions involving their vehicles. Furthermore, the NTSA does not have a strong role in road design, urban development, or mobility planning, which are functions conducted by other government agencies. It also does not set standard processes for safety audits of road designs and plans.

199 In 2018 the Ministry of Finance introduced a 16 percent value added tax on all petroleum products as part of efforts to raise funds and narrow budget gaps. The government of Kenya has also issued eight domestic infrastructure bonds since 2008/09.

200 https://today.tamu.edu/2018/07/09/nairobi-is-planning-car-free-days-what-are-the-benefits/

201 There appears to be no PPPs in the road sector. Instead, the government is rolling out two schemes – a series of toll roads and a road annuity programme to fill financing gaps (ODI)

202 Mustapha, Shakira, and Romilly Greenhill. "An 'Age of Choice' for Infrastructure Financing? Evidence from Kenya." ODI, ODI, 1 Apr. 2017, www.odi.org/publications/10781-age-choice-infrastructure-financing-evidence-kenya.

203 https://qz.com/africa/846609/safaricoms-little-cab-a-rival-uber-in-kenya-is-launching-in-nigeria-and-uganda/

204 Little's ride-hailing app, developed by the Kenyan tech firm Craft Silicon, offers customers free Wi-Fi, cheaper fares, and promises to give drivers a higher share of revenues.

205 https://qz.com/africa/748149/drivers-in-kenya-are-protesting-against-being-uber-slaves/

206 https://qz.com/africa/748149/drivers-in-kenya-are-protesting-against-being-uber-slaves/

National Road Safety Programme: The programme is one among several flagship projects mentioned in Vision 2030 and is focused on fast track implementation of the National Road Safety Action Plan to reduce road crashes.

Nairobi Commuter Rail Network: The commuter rail network project will involve the construction of new railway stations as well as the expansion and renovation of the Nairobi railway station. The Syokimau Railway Station is 95 percent complete, and procurement has begun for the remaining new railway stations. In addition, detailed designs for the construction have been completed of a 6-kilometer branch that extends from Embakasi to the Kenyatta International Airport.

Standard Gauge Railway[207]: The construction of the USD$4 billion Standard Gauge Railway (SGR), which began in 2014, is seen as critical both to the growth of Kenyan and regional economies and to the provision of safe and rapid intercity passenger transport.[208] The Kenya Railway Corporation is the implementing agency of the SGR, while China Road and Bridge Corporation is the contractor.

Digital Matatus: Researchers from MIT, Columbia University, and the University of Nairobi along with design firm Groupshot produced a map of the entire matatu system,[209] which became the first informal network to be launched on Google Maps.

Digital Commuter Card: The BebaPay digital payment card was an initiative led by Google and Equity Bank to introduce electronic payments technologies; however, it failed to pick up steam.[210]

Spatial planning competition: In 2009, the Ministry of Metropolitan Development launched an international competition for a spatial planning concept that could transform the Nairobi Metropolitan Region into the world class metropolis envisioned in the 2030 growth plan. [211]

[207]Mustapha, Shakira, and Romilly Greenhill. "An 'Age of Choice' for Infrastructure Financing? Evidence from Kenya." ODI, ODI, 1 Apr. 2017, www.odi.org/publications/10781-age-choice-infrastructure-financing-evidence-kenya.
[208] The SGR lies at the core of the East African Railways Master Plan which proposed the revitalization and extension of existing railways serving Tanzania, Kenya, and Uganda.
[209]https://qz.com/africa/830442/nairobis-matatu-bus-system-has-resisted-being-digitized-for-more-convenient-transit/
[210] Ibid
[211] Nairobi Planning Innovations Blog

6.7 WINDHOEK, NAMIBIA

NAMIBIA	
Population: 2,533,224 (as of July 2018) **Population Growth Rate:** 1.91% (2018) **Median Age:** 21.4	
GDP: USD$29.6 billion (2017 est.) **GDP Per Capita:** USD$11,200 (2017 est.)	
City of Intervention: Windhoek	
Urban Population: 50% of total population (2018) **Urbanization Rate:** 4.2% annual rate of change (2015-2020 est.)	
Land Area: 910,768 sq km **Total Roadways:** 48,327 km (2014) *Source: CIA Factbook*	

I. POLITICS & GOVERNANCE

A. Multi-Scalar Governance

Following a 25-year war, Namibia gained independence from South Africa in 1990 under the rule of the South West Africa People's Organization (SWAPO). Since then, SWAPO has held the presidency, prime minister's office, the national assembly, and most local and regional councils by a large majority. While opposition parties are active (there are over ten groups), they remain weak and fragmented, with most significant political differences negotiated within SWAPO.

The constitution and other legislation dating to the early 1990s emphasize the role of regional and local councils – and since 1998, the government has been engaged in efforts to support decentralization of power.[212] However, all levels are connected by SWAPO (through common membership), so power remains effectively centralized. Planning agencies remain closely linked across government levels. While local authority councils (municipal level) have autonomous powers, they can only exercise these powers if the Minister of Urban and Rural Development allows them to. The development of the Sustainable Urban Transport Master Plan for Windhoek, outlined below, involved both the municipal government and the Ministry of Works and Transport, highlighting the integration of local and national planning.

[212] The Regional Councils Act 22 of 1992 and the Local Authorities Act 23 of 1992 further regulate the establishment, powers, duties, and functions of the councils. The management and development role and functions of RCs are stipulated in section 28 of the Regional Councils Act. These include regional development planning in cooperation with the National Planning Commission; the establishment, management and control of settlement areas; and assisting Local Authority Councils in the exercise of their functions. All LAs (municipal, town, and village) are given certain automatic powers, but villages may exercise these powers only if the Minister of Urban and Rural Development considers them ready to do so. Central government can step in to help towns and villages that are having trouble providing adequate services to residents. The lack of development in most towns undermines the town councils' authority and ability to raise revenue from tax, and thus could jeopardize their political legitimacy.

B. Urban Policy

Plans and policies that govern urban development and transport planning across Namibia include:

- *Vision 2030*
- *5th National Development Plan*
- *Urban and Regional Planning Bill 2017*
- *New Transport Policy 2016*
- *Sustainable Urban Transport Master Plan 2016-2021*
- *Medium to Long Term Road Master Plan*
- *Roads Authority Strategic Plan 2012-2015*
- *Road Traffic and Transportation Act*

Vision 2030 outlines the challenges Namibia faces with transportation and the strategies to address those challenges such as revising relevant legislation (i.e. 1987 National Transportation Corporation Act), ministerial restructuring, user charging, standardizing building design, and staffing.[213] The **Medium to Long Term Road Master Plan** guides the Road Authority on the construction and maintenance of the national road network. The **2017 Urban and Regional Planning Bill** was passed to enable town planners, who are still working under rules from the apartheid era, to shift to a modern approach, including more public participation and faster decisions.[214] The EUR€12.5 million **Sustainable Urban Transport Master Plan 2016-2021**[215] also called "Move Windhoek" supports the Ministry of Works and Transport and other transport institutions in their efforts to efficiently plan, monitor, and regulate the transport sector. Several initiatives outlined in the plan include: (1) development of public and non-motorized transport systems such as MoveWindhoek, which implements a new bus network and non-motorized transport infrastructure and services; (2) set up of an implementation unit for development of Windhoek as international logistics hub; and (3) development of a pipeline of civil engineers through a partnership between GIZ, the University of Namibia, and the Namibia University of Science and Technology. To date, the SUTP has led to the creation of a new transport policy, procurement of 24 public buses, initial development of a non-motorized transport strategy, enrollment of more than 500 students in civil engineering courses, and establishment of Namibia's first master's and PhD degree programs in civil engineering.[216]

C. Climate Change/Sustainability

Namibia's national climate change policy covers a comprehensive range of climate adaptation and mitigation issues, including climate proofing infrastructure and transportation. Namibia's National Renewable Energy Policy seeks to boost access and investments in renewable energy projects and recommends the government consider a subsidy framework. The MoveWindhoek plan seeks to address climate change and adaptation through sustainable urban transport and infrastructure initiatives such as increasing public transport to reduce reliance on cars, greening buses through hybrid and solar pilots, and rainwater harvesting.

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[213] https://www.npc.gov.na/?wpfb_dl=31
[214] https://laws.parliament.na/annotated-laws-regulations/law-regulation.php?id=509
[215] https://www.globaldeliveryinitiative.org/sites/default/files/_gdi_day_2_delivery_lab_1_ursula_hein_presentation.pdf
[216] https://www.sutp.org/files/contents/documents/resources/J_Others/Factsheet-Namibia_October-2016.pdf

II. INFRASTRUCTURE & TRANSPORT

A. Existing Infrastructure

Namibia's transport system links several Southern African countries including landlocked Botswana, Zimbabwe, and Zambia. Namibia serves as a key trade route for moving goods from ports throughout Southern Africa. Its main regional corridors include Trans Cunene, Trans Caprivi, Trans Kalahari, and Trans Oranje.[217]

Air/Ports: Namibia has eight airports and two ports (Port of Walvis Bay and Port of Lüderitz).[218] Hosea Kutako International Airport outside Windhoek is Namibia's main international airport. Based on the White Paper on Transport Policy, the government implemented a review of parastatal transport, leading to the establishment of Air Namibia as a separate company.

Rail: Namibia's railway operations began in 1902 and suffered years of under-investment until 2015, when five refurbished diesel locomotives were introduced.[219] The locomotives were refurbished by South Africa's Transnet Engineering firm in a USD$5.9 million deal. Today, the railway operations consist of roughly 70 locomotives and is regulated by TransNamib.

Roads/Highways: Namibia's roadway network is considered the best in Africa and among the world. [220] The network includes critical transport corridors that link Namibia with Zambia, Zimbabwe, the DRC, Botswana, South Africa, and Angola, making Namibia a critical transportation and logistics hub within Southern Africa. Much of this infrastructure was inherited from South African rule prior to independence (and had been laid down as part of South African political and economic initiatives in Namibia) but has been maintained through deliberate policy since independence.

B. Existing Transportation

Current modes of passenger travel are split between taxis (34 percent), private cars (28 percent), walking (26 percent), car share (seven percent), buses (four percent), and cycling (one percent).[221] Challenges facing the transportation sector include low funding, lack of affordability (i.e. the poor spend up to 25 percent of income on transport),[222] peak traffic flows, limited full day bus services, lack of interchanges connecting different routes, and poor route planning.[223]

Bus: Over 75 public buses are operated by the City of Windhoek's Public Transport Division (with no private partner) on 13 lines and various routes. The public transport bus market is expected to grow in demand by an average 226 percent from 2015 to 2022 (Green Climate Fund). Previously, the bus service operated with only tokens and cash. In 2011, smart card technology was introduced.

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[217] http://www.ra.org.na/Documents/Development%20of%20a%20Road%20Transport%20Sustainability%20Plan%20for%20Namibia.pdf
[218] http://www.airports.com.na/airports/
[219] https://www.railjournal.com/in_depth/transnamib-back-from-the-brink
[220] http://reports.weforum.org/pdf/gci-2017-2018-scorecard/WEF_GCI_2017_2018_Scorecard_EOSQ057.pdf
[221] https://www.greenclimate.fund/documents/20182/893456/19910_-_Low-Carbon_Public_Transport_in_Windhoek.pdf/811cb516-f82f-9ead-c89d-14613a405e0d
[222] https://www.globaldeliveryinitiative.org/sites/default/files/_gdi_day_2_delivery_lab_1_ursula_hein_presentation.pdf
[223] https://www.sutp.org/en/projects/namibia-move-windhoek-sustainable-trban-transport.html

During a three-month implementation period, smart cards were provided for free. Since then, tokens, cash, and smart cards are all being used.

Taxis: The size of Windhoek's registered taxi fleet is registered at 6,815 taxis (or 190 taxis for every 10,000 inhabitants). A taxi-hailing app called *Lefa* was launched in 2018. That said, MoveWindhoek seeks to reduce reliance on cars and taxis.

C. Infrastructure Stakeholders

Government: Most agencies responsible for urban transportation are state-owned, including the Namibian Port Authority and TransNamib.[224] Roadways are managed by three related state-owned enterprises that were founded in 2000: the Road Funding Administration which collects revenues from vehicles that use Namibian roads; the Roads Authority to manage and plan/coordinate maintenance for the road network; and the Roads Contractor Company, which implements maintenance. Until 1995, roads were regulated by the Road Transportation Act of 1977, which allowed the market to be dominated by few operators. The government published a white paper in 1995, recommending changes to this system including the adoption of labor-based road construction and maintenance.

International: Many global actors are involved in the planning and funding of transportation and infrastructure development across Namibia. GIZ is a lead partner in the development of MoveWindhoek, while the TTI is supporting the creation of a Road Transport Sustainability Plan.[225]

D. Interventions/Projects

Commuter Rail Expansion[226]: In 2014, the Ministry of Works and Transport commissioned four pre-feasibility studies to investigate the viability of transporting commuters by rail between Windhoek Central and Hosea Kutako Airport, Okahandja, Rehoboth, and Central Katutura.

Walvis Bay Port Expansion[227]: Namibia aims to become a regional logistics hub by expanding container terminals at the Port of Walvis Bay on 40 hectares of reclaimed land with the support of the African Development Bank, which is currently developing a National Logistics Master Plan.

[224] https://web.wpi.edu/Pubs/E-project/Available/E-project-050715091748/unrestricted/TransNamib_Final_IQP_Report.pdf
[225] http://www.ra.org.na/Documents/Development%20of%20a%20Road%20Transport%20Sustainability%20Plan%20for%20Namibia.pdf
[226] http://www.mwt.gov.na/commuter-train-projects
[227] https://www.afdb.org/en/news-and-events/namibia-walvis-bay-port-expansion-well-under-way-18550