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POSITION PAPER: THE STATE OF KNOWLEDGE AND RESEARCH

GOVERNING MOBILITY IN SUB-SAHARAN AFRICAN CITIES



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EXECUTIVE SUMMARY

Purpose

The overall aim of this position paper is to inform the Volvo Research and Educational Foundations (VREF) and other researchers during the development of a research agenda for the Mobility and Access in African Cities (MAC) initiative¹. One of the thematic areas identified for future research is that of mobility governance in cities in SSA, which is the topic of this position paper.

Urban mobility systems are fundamental to the operations of cities. Urban mobility systems include fixed material infrastructures (such as road and railways) and services (such as buses, private cars and paratransit). These systems also include the less-concrete structures of governance, such as institutional arrangements, financing, planning, and management of infrastructures and services. The myriad relationships between the structures and practices of governance, the material infrastructures, and the various transport services that use these infrastructures have direct and indirect implications for how cities function.

Objectives of this position paper

The objectives of this position paper are to provide an overview of the governance dynamics of African cities and their implications for mobility in cities, to unpack key trends in the governance of mobility infrastructures in SSA cities, and to craft a compelling and interdisciplinary agenda for future research.

Key findings regarding the state of knowledge

It is important to situate the governance of mobility within a wider understanding of how African cities are governed.

While incredibly diverse, African cities have some shared governance challenges. The last 30 years of territorial,

fiscal, and political decentralisation have left African cities with fragmented systems of urban governance. Territorially, official municipal boundaries often fail to align with the functional urban form. This produces a myriad of challenges for the provision of services. Fiscally, city governments often have few resources or borrowing capacity, limiting their ability to meaningfully invest in urban services. Politically, cities are hotbeds of opposition politics and contested power relationships. Political attention has often focused on 'big-bang' projects, which are seen to be modern and impressive. Rather than producing robust and empowered city authorities, decades of reforms have created ample space for a plethora of actors – national and local, public and private, formal and informal – to stake claims to African cities. These claims are often contested, particularly in the context of control over key infrastructures and service delivery systems.

Overall, fragmented systems of decentralised urban governance and 'big bang' political projects have produced fragmented urban and spatial forms. For example, a common problem in African cities, and one that has direct implications for mobility, is urban sprawl and low-residential densities. Another example is the emergence of hybrid infrastructure systems. Informal and non-centralised systems have emerged to fill the gaps in service delivery that have come about as a result of favouring large-scale and politically attractive investments, and misalignment between the various agencies operating at the city-scale.

With regard to mobility, the overall lack of investment in urban transport systems – particularly urban public transport systems – has created a large gap in urban service provision. In many African cities, we see the emergence of multi-layered and uncoordinated systems of mobility made up on a complex web of actors. This is largely because in many countries the *de jure* responsibility for sectors such as roads, public transport, and urban land use and planning is shared across various actors and agencies. This fragmentation of material and institutional systems creates fertile ground for competition among

¹ See <http://www.vref.se/macprogramme>

actors with deep vested interests. These actors might include paratransit associations, unions, cartels, corrupt officials or politicians, lending agencies, and many others. Practices such as rent-seeking and skimming occur along all parts of the mobility infrastructure value chain. Both large-scale transport projects (such as trains) and smaller-scale systems (such as paratransit) are prone to these activities, albeit for different reasons.

The infrastructures that relate to various components of the mobility system – i.e. roads and private cars, buses, urban rail, paratransit, and walking and cycling – often operate in silos, each with their own governance structure and arrangements. Notably, interventions in one or other mode (such as rail, road, paratransit) often fail to recognise the various modes' interconnectedness and the way that they together shape urban systems. For example, a key trend in governance reforms for key mobility sub-sectors has been the creation of multiple agencies and authorities. In most African cities, authorities have been established to manage and maintain urban roads. As roads are undeniably the most important mobility infrastructure (as they serve as the base for buses, paratransit, and non-motorised transport), these agencies have significant power in cities. Similarly in cities where there have been BRT investments, these have been accompanied by the formation of metropolitan authorities. In both cases, these agencies have removed powers from local authorities.

Governance arrangements in the mobility sector are given effect not only in their formation, but in the way in which they are resourced. A major determinant of the shape of mobility systems, and the outcomes of any changes to them, is who has money, how much they have, and who decides how it can be spent. Funding for mobility has focused on large capital projects to the exclusion of smaller and more everyday interventions. Where paratransit (the most important mode of mobility in most Sub-Saharan African cities) has been considered for reform and intervention, the focus has been on aggressive regulation rather than investment or subsidisation. The choice to tax these modes, while heavily subsidising 'formal' systems, reflects the enduring fixation on modernity evident in many African cities.

Key research gaps

There are many important avenues for future work on mobility governance. To date, much of the mobility gov-

ernance research has focused on particular technologies (for example BRT), without situating these technologies in wider infrastructural and governance systems. Work that contextualises these technologies is vital. The focus on the governance of mobility in African cities should also take into account wider shifts towards a discourse of 'accessibility'. This shift goes from considering how to move people through geographic space to understanding how people access whatever it is they need or desire. While there are lots of ideas about innovations in mobility technologies, there is little work on how to viably create change in the institutional systems that support mobility systems. More work on how institutional change can actually be given effect is necessary.

Finally, a future research agenda should consider co-producing knowledge, drawing on the grounded expertise of different actors involved in mobility systems and their governance. Co-production for mobility governance research is particularly powerful as it allows different registers of knowledge to be joined together and resists the tendency to import and impose best practices or theoretical frameworks that might not be fit-for-purpose in the African context.

Developing research capacity

Overall, there is a growing interest in producing knowledge on African cities, governance, and infrastructure from within African research centres and planning schools. While many of the debates on cities are still oriented either towards the national, or in conversation with the rural (often reflecting anti-urban bias), more innovative and dynamic thinking is emerging in pockets across the continent. This thinking is challenging the common practice of Western/Northern knowledge production on/for African cities. It reflects a deeper and more complex understanding of the governance challenges and possibilities in urban Africa. Lessons from the African Centre for Cities' work with the African Urban Research Initiative (AURI) are particularly useful in this regard.

A key part of developing a stronger and more grounded research agenda for mobility governance in African cities is to bring in academics who are working on cities, governance, infrastructure, and services into mobility debates.

In terms of capacity building, it is important to develop joint projects across research institutions. These

projects must develop the skills and expertise, not only of individual researchers, but also of the institutions as a whole. This means having a range of roles and responsibilities, at various levels, and requiring various skills. Quality management is an important part of this process and can be done through collective efforts of peer review, or through a centralised process (for example, led by a secretariat institution).

Regarding partner selection, it is important to recognise that many important scholars are not sited within aca-

demically institutions. They are instead based in think-tanks or as independent consultants. It is important to include these scholars, and in any case is often easier to contract with them outside of the complex bureaucracies of the academy. It is possible to ask country partners to build alliances with academic institutions, the state, and activists, to establish in-country or -city research teams. By setting this as a condition of the project (and allocating enough funding to include these partners), stronger teams and partnerships can be built.

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INTRODUCTION

Brief and objectives

The overall aim of this position paper is to contribute to the Volvo Research and Educational Foundations (VREF) Mobility and Access in African Cities (MAC) initiative² One of the thematic areas identified for future research under the MAC initiative is mobility governance in Sub-Saharan African cities. To assist in framing this conversation, this paper applies the most contemporary thinking in the African urban governance scholarship to questions of mobility, exploring issues related to institutions, finance, and politics.

This paper argues that African cities are characterised by a fragmented system of urban governance. Across the institutional, fiscal, and political dynamics, urban governance systems are rife with inefficient redundancies, competing mandates, and glaring gaps. This governance fragmentation has direct implications for urban infrastructure; in particular, it has contributed to the sprawling spatial form of cities and the hybrid systems of service delivery.

This fragmentation plays out in the mobility governance space in many ways. Roads and private cars, buses, urban rail, paratransit, and walking and cycling often operate in silos, each with their own governance structure and arrangements. There has been a proliferation of agencies and authorities, complicating governance and eroding the authority of local governments. Mobility investments have been uneven and highly politicised. Interventions in the mobility space often fail to recognise the reality of hybrid systems of service provision, the interconnectedness of various modes, and the way that they together shape urban systems.

For those interested in researching the governance of African cities and particularly of urban mobility, this paper makes several suggestions for useful areas of further research. First, it argues for more attention to city-systems and the interconnectedness of infrastructures. Second, it argues that rather than focusing exclusively on mobility, 'accessibility' should ground an exploration of more effective service delivery models across a range of

urban systems. Third, for mobility governance reforms, it is important to understand how change actually happens in the context of contested institutional and political landscapes. Finally, a future research agenda should consider co-producing knowledge, with a focus on local knowledge creation.

Scope and key concepts

This paper reflects a selective and stylised reading of the governance trends and their applicability to the mobility debates in African cities. For a full understanding of the wide range of issues that shape and effect mobility in African cities, this paper should be read in conjunction with the other position papers in this series.

As a point of departure, three key terms are framed below: governance, urban mobility, and Africa.

Governance

"Governance", as Jessop (1998:30) has pointed out, has become a "ubiquitous 'buzzword', which can mean anything or nothing." For the purpose of this paper, then, we are interested in:

- **Urban governance:** We explore mobility governance in the context of Africa's urban areas. Urban governance reflects a rescaling of wider governance questions to the city-scale, with attention to the actors and methods involved in their governance (Healey, 2006). We see urban governance as multi-scalar and dynamic.
- **The actors who govern and the methods they use:** We are interested in actors, both state and non-state, involved in urban governance. We are also interested in the methods and practices, both formal and informal, that they deploy. We avoid a state-centric approach to governance and resist the common conflation of state with formal practices (Lindell, 2008).

² See <http://www.vref.se/macprogramme>

- Multi-level systems: Within multi-level systems, there are often levels or tiers of government. Local governments, the smallest territorial units, are important urban governance actors. They engage with other levels of government (vertically) and with adjacent local governments which may form part of a metropolitan area or serve peri-urban areas in their vicinity (horizontally). Within multi-level government systems, 'decentralisation' refers to the process of shifting powers from higher levels of government, to regional and local governments.
- Institutional, political, and financial arrangements: To unpack aspects of governance, we use three categories: institutional, political, and finance. Under 'institutional', we include administrative and territorial processes. Under 'political', we include both party politics and the everyday politics and power relations of city-making. Under 'financial', we include public finance, private finance, and their blended interface.
- Power: A key aspect of urban governance is power. We deploy a relational reading of power. Relational approaches are committed to a distributed, multi-scalar, and multi-directional reading of power – often inspired by Foucault (1980, 1998) – and politics (Larkin, 2013). This reading of power does not undermine the critical importance of the structural drivers (such as capitalism) that undeniably shape and constrain cities in Africa, but additionally valorises bottom-up processes that contribute to the shaping of infrastructure.

Urban mobility

We limit our discussion to the movement of people through cities. This is for pragmatic reasons of scope, but also for principled reasons. Human movement is a major, significant, and particular phenomenon and object of governance, and as such deserves attention on its own terms. Urban mobility systems include obvious material infrastructures such as road and railways, modes, and services such as private cars and paratransit, as well as less-concrete structures of governance, institutional, and planning systems. The myriad relationships between structures of governance, material infrastructures,

services, and transport markets, and the implications for urban residents and visitors, are the major focus of this paper.

Africa

Within this paper, we focus on Sub-Saharan Africa – in line with the World Bank and Agence Française de Développement (AFD) approach – and use 'Africa' as an occasional shorthand. Overall, we recognise that African cities are incredibly diverse along a variety of dimensions (size, colonial legacy, state formation, territorial consolidation, political economy, spatial form etc.) and that, while it is important to be able to distil, too much generalisation is dangerous and counterproductive. For this reason, we draw extensively from examples from the authors' own work to illustrate our arguments.

We also recognise that what it means to be 'urban' is hotly debated in Africa and in urban studies more generally³. In the African context, the edges of urban areas are increasingly being stretched, often beyond the administrative boundaries and into peri-urban peripheries. The sprawling growth of metropolitan regions is a pressing issue, challenging how we categorise and account for African cities. There is, for example, often a mismatch between the boundaries of the authorities that manage cities, and cities' spatial form, making research on governance challenging and contested. In this paper, we have not limited our analysis to classified 'urban areas' or 'cities'; we have instead sought to understand cities and urban development as part of complex and multi-scalar systems, focusing on the substantive features of particular places. In addition, we have recognised some of the limitations of urban data.

These definitions serve as the practical and conceptual scaffolding to explore the question of governance and its importance for understanding urban mobility in African cities.

Method

This paper synthesises material from several sources. It is based on an analysis of existing literature on the governance of urban mobility infrastructures in African cities. Our study focused on the various aspects of urban movement systems, excluding freight and logistics.

³ See the debate on Planetary Urbanism within geography and urban studies.

To provide context, we also reviewed more general literature on the political, institutional, and fiscal dynamics of African cities.

This paper is also informed by several of the authors' own multi-year research projects. These projects include African comparative research projects on various related subjects. Relevant examples include: a 2018/19 study that involved collecting and analysing data on fiscal and political decentralisation in 21 African countries⁴; a comparative study on African city-regions that covered Addis Ababa, Gauteng City-Region, Lagos, and Cairo⁵; a DFID study on city planning, infrastructure, and finance in Harare, Addis Ababa, Cape Town, and Nairobi⁶; and a research report that included case studies of BRT from Lagos, Johannesburg, and Nairobi⁷. The authors have undertaken detailed case study work in cities in Angola (Luanda), South Africa (Cape Town,

Johannesburg), Kenya (Kisumu and Nairobi), Ethiopia (Addis Ababa), and Senegal (M'Bour).

We received valuable feedback at various stages of the writing process. First, we hosted a workshop at the African Centre for Cities (University of Cape Town) in August 2019, where we presented the early findings and key themes. While the majority of experts who attended were UCT-based, all their research involves work in the wider African context. In September 2019 we presented the paper findings at a VREF workshop in Addis Ababa, and received comments, both formal and informal, from a wide range of continent experts. Finally, the document was peer-reviewed by transport and governance expert Devanne E. Brookins. Inputs from these three review sessions were consolidated and incorporated into the document.

4 The raw data used for several section of this report is available online and was collected for United Cities and Local Governments (UCLG) and the Organisation for Economic Co-Operation and Development (OECD) as part of the fifth Global Report and Decentralization and Local Democracy (UCLG 2019) and the OECD-UCLG World Observatory of Sub-national Government Finance and Investment (OECD 2019). The authors of this position paper were involved in the data collection for the 21 African countries included in this research.

5 This research formed part of the African city-regions project, conducted in 2016 and funded by the Gauteng Province. The research was an African Urban Research Initiative project.

6 This research formed part of the DFID land-based finance research, conducted in 2015. More recent work on finance in Nairobi and Cape Town have been conducted by the authors under the Mistra Urban Futures Programme.

7 This research culminated in a VREF Research Synthesis Project Governance of Metropolitan Transport Background Paper. See Klopp et al, 2019.

URBAN GOVERNANCE TRENDS IN AFRICAN CITIES

African cities, while incredibly diverse, have some shared governance challenges. Their fluidity, informality, and incrementality defy “a linear logic of a generic urban modernity” (Swilling et al., 2002: 313; Simone, 2002; Lindell, 2008). These ‘everyday’ and grounded realities challenge some of the assumptions that underpin conventional theories and models of urban governance and development (Bardhan, 2002; Fox, 2014).

For many years, there was a void in the study of urban governance in Africa. Governance work focused on national governments, with little attention to local government and even less attention to cities and urban authorities. However, since the 1980s, there has been growing attention to urban governance in Africa. Initially, this scholarship focussed on ‘urban management’ as a solution to the crisis posed by a combination of rapid urbanisation, economic crisis, and globalisation (Stren and White, 1989; Devas and Rakodi, 1993; Rakodi, 1997). The principles of urban management followed those of ‘new public management’ and its associated doctrines of public accountability and organisational best practice (Hood, 1995). In the late 1980s and early 1990s, as part of Structural Adjustment Programmes implemented by international financial organisations, African governments adopted a series of reforms including decentralisation, privatisation, and civil service reform, aimed at making the state more efficient and accountable (Hope, 2001). Most of these reforms, however, did not produce the intended effects, instead resulting in the rise of an informal economy and mounting inequality, especially in cities (Riddell, 1997). From the 1990s onwards, scholarship on urban Africa started reflecting concern for these mounting challenges. In doing so, governance debates shifted from a state-centric focus to an acknowledgement of the diverse local, non-state, and informal actors that play a role in governing African cities and towns. There is now a vast literature on urban governance in Africa that is attentive to the evident diversity of urban and local areas, complex power dynamics, and a multitude of actors involved in city governance (McCarney, 1996; Swilling, 1997; Hyden et al., 2000; Carley, Jenkins and

Smith, 2001; van Dijk et al., 2002; Tostensen et al., 2001; McCarney and Stren, 2003; Devas, 2004; Smit, 2018).

The governance arrangements of African cities have both direct and indirect implications for mobility and transport. As we will describe in the following section, contemporary African cities experience fragmented institutional, political, and financial/fiscal arrangements. These arrangements overlay onto an infrastructural palimpsest of fragmented and sprawling service delivery networks, planning frameworks, and land delivery systems.

Decentralisation and multi-level governance in Africa

Under the banner of improving governance, numerous institutional/territorial, political, and fiscal reforms have been implemented across Africa over the past 30 years. Ongoing reforms, some of which are still underway, have created new governance arrangements that are multi-level and, at least in theory, empower regional and local governments (Ndegwa, 2002).

A review of the current state of decentralisation reforms across Africa shows that in spite of improvements, in practice the space for local and regional governments remains highly restricted (UCLG Africa and Cities Alliance, 2018; UCLG, 2019). There are many reasons for this restriction. In some cases, as in Côte d'Ivoire, Mali, and Tunisia, conflict or natural disasters diminish the capacity of local governments. In other cases of decentralisation, the mandates of local government are ambiguous or unspecified, with roles overlapping with other levels of government or state agencies. In yet other cases, powers were decentralised and then later recentralised. For example, local power in Uganda and Tanzania, both frontrunners in the wave of decentralisation, has been subject to re-centralisation by the national government in recent years.

Complex and multi-directional decentralisation reform processes have resulted in both a partial transfer of

institutional, political, fiscal powers (discussed in the following sections) and little attention to the important role of cities within multi-level government frameworks. In many cases, African cities become key sites for governance redundancies and voids, giving rise to complex dynamics and patterns.

Institutional and territorial dynamics in urban Africa

Unpacking the institutional and territorial dynamics of African cities requires an understanding of African local governments. Historically, local governments, the smallest territorial unit of government, have been weak in Africa. Under colonialism, local governments were largely seen as an extension of central government for the purpose of urban management and basic administration (Mamdani, 1996). They had little if any autonomy. In post-colonial years, most newly independent African governments maintained these centralised systems of governance, often under the auspices of national building and redistribution (Bahl and Bird, 2000; Ribot, 2001; Olowu, 2003). In many places, for example Kenya and Senegal, parallel systems of 'deconcentrated government' were put in place to control local areas (Home, 2012). Since the 1990s, there has been a proliferation in the formation of regional and local government entities to manage territories (Paulais, 2012). Today, as an outcome of these processes, a wide array of institutional arrangements can be found across the continent. These arrangements reflect different colonial legacies which translate into different tiers of sub-national government.

For instance, Francophone countries generally have three or more tiers of sub-national governments, while Anglophone countries tend to have two tiers. Different post-colonial decentralisation reform efforts in turn have resulted in a large variety of local governments in terms of size, functions, and powers.

Most African countries are unitary states, meaning that power is held by the central government from where it is devolved. In contrast, in federal or quasi-federal states such as South Africa, Nigeria, and Ethiopia, power is distributed over several levels of government. Depending on the context, local governments may represent vast metropolitan areas and 'megacities', middle-sized cities or small towns, or rural municipalities, regions, counties, and departments. Many African countries, such as Burkina Faso and Cameroon, have distinct arrangements for rural and urban areas. Others, such as Mali, Benin, Guinea, Malawi, Niger, Uganda, Zambia, and Zimbabwe, give special status to main or capital cities. Ghana and South Africa in turn distinguish between municipal, district, and metropolitan areas. Specific governance structures can also be found in Ethiopia with the 'chartered cities' of Addis Ababa and Dire Dawa, which report directly to the national government rather than to the regions within which they sit. In Kenya, Nairobi and Mombasa have the special status of city-counties, as per the Urban Areas and Cities Act of 2011 (Act 13 of 2011, revised 2016). Overall, the total number of municipal government entities varies greatly across the continent, ranging between the extremes of 16 in Botswana and 1695 in Madagascar (see Table 1).



Table 1. Number of local government entities in select African countries. Continues on following page.

Type of state: Federal State

County	Number of municipal entities
South Africa*	257
Nigeria	774
Ethiopia	916

Type of state: Unitary

County	Number of municipal entities
Botswana	16
Mauritius	130
Namibia	57
Angola	163
Cameroon	360
Cabo Verde	22
Ghana	254
Ivory Coast	201
Kenya	47
Mauritania	218
Morocco	1538
Eswatini	68
Tunisia	350
Zambia	103
Benin	77
Burkina Faso	351
Burundi	119
Guinea	342
Madagascar	1695
Malawi	35
Mali	703
Mozambique	53
Niger	255
Rwanda	30
Senegal	557
Sierra Leone	22
Chad	365
Togo	116
Tanzania	169
Uganda	169
Zimbabwe	92

Source: Data in the table follows the OECD/UCLG methodology. Available: WOFI- https://stats.oecd.org/viewhtml.aspx?datasetcode=SNGF_WO&vh=0000&vf=00&i&il=blank&lang=en&voq=1111. The numbers are all from June 2019, specifically from the 2019 OECD/UCLG World Observatory publication and database. The data was extracted on 01 Jul 2020 13:32 UTC (GMT). This table does not include lower level local councils (LC3, LC2 and LC1), such as division, town, parish, and village.

* In the OECD/UCLG definition, SA is considered federal, despite the fact that most other databases consider it unitary. For all intents and purposes, SA has higher levels of sub-national decentralisation than most federal countries.

These institutional spheres, tiers, or levels are the basis for the allocation of functions and responsibilities within multi-level government systems. The assignment of particular public functions related to management, provision, or regulation is a critical part of decentralisation reform. Despite academic and policy discourses that support the strengthening of local governments, and decades of ostensible efforts to reform multi-level government systems in Africa, local governments in many countries lack the mandate to fulfil basic functions within their territories (Ribot, 2002; Dafflon and Madiès, 2013). Many important urban functions are shared between levels of government. For example, in South Africa, low-income housing delivery is a concurrent function between all three spheres of government: local, provincial, and national. Confusion over roles and mandates, coupled with a mismatch between how capital and operational costs are borne, has created a plethora of challenges for South African cities (Pieterse and Cirolia, 2016; Cirolia and Smit, 2017).

Even where local governments hold the legal mandate to fulfil certain functions, many important utilities and infrastructure services have been ringfenced, allocated to State Owned Enterprises (SOEs), or privatised completely. Such institutional constructions often date back to reforms undertaken as part of Structural Adjustment Programmes or other donor-led interventions (McDonald, 2016). For instance, World Bank infrastructure and transport projects often suggest either the consolidation of various agencies and/or the introduction of new, often national or metropolitan-scale special agencies to manage key urban functions such as roads, public transport, water, and energy (World Bank, 2002). Moreover, although the World Bank has been a longstanding and influential proponent of decentralisation (World Bank, 2008), it itself lends almost exclusively to member organisations: national governments. As such, the origins and structures of transport project financing frequently undermine, or neglect, local control and administration of transport systems.

Key urban functions are also often held or practiced by national government, even when they have legally been devolved to the local level. For example, in Kenya, the national road agencies continue to control road grants, despite the function being allocated to county governments. The ringfencing or usurping of key urban services has often undermined the ability of local governments to shape urban development processes within their territories. It has also created tensions and competition be-

tween levels of government. With regards to mobility, the responsibility for urban and land use planning, as well as roads and public transport is often shared between the municipal, regional and national government. In a study of 14 African cities, Gwilliam (2011) found it to be extremely rare that a single institution governed all three areas of urban planning, infrastructure maintenance, and public transport services. This often results in confusion and contest among levels of government.

Africa's urban growth patterns, and in particular the primacy of larger cities (wherein historically dominant cities, such as capital cities, are ten times larger than most of the smaller centres), creates particular challenges of urban management (Roberts, 2014; Pieterse et al., 2018). This is particularly relevant for large metropolitan areas, such as Gauteng, Dakar, or Nairobi, which may span several jurisdictions, requiring horizontal integration among local governments. National governments have responded to these pressures in different ways, for instance by creating special institutions to operate on the metropolitan scale, typically including or incorporating the areas of several local governments (Bahl, Linn and Wetzel, 2013; McCluskey and Franzsen, 2013). 'Metropolitanisation' refers to the process of rescaling the state to align with the spatial form of urban areas (Brenner, 2004). The creation of metropolitan scale institutions to manage key infrastructures can improve governance and coordination by creating or reforming institutions to have the appropriate scales, accountabilities, functions, and capacities to effectively deliver public goods. However, institutional rescaling can also result in vertical fragmentation (by introducing a new level of government) and diminished downwards accountability (if the new institution has a weak democratic mandate). It may also drive sectoral fragmentation if the metropolitan institution is assigned functions that actually require integration with other levels (Gómez-Álvarez et al., 2017).

As a result, in many African countries there is significant institutional and territorial fragmentation at the urban level, with a range of different entities fulfilling urban functions (Parnell and Pieterse, 2014; Pieterse, 2019). The general conditions of institutional fragmentation in African cities and urban policy are particularly acute when it comes to transport and spatial planning. In all cases, institutional fragmentation tends to reinforce a fragmented urban form, as uncoordinated and weak urban planning and management produces disconnected and inefficient urban services.

Political dynamics in urban Africa

The good governance and decentralisation reforms of the 1990s were accompanied by strong pushes for local democratisation. However, in most African countries, the formal channels and institutions of democracy are contested (Obeng-Odoom, 2017). Levels of de facto political decentralisation remain uneven. For example, Angola has made strides by empowering municipalities as independent budgetary units since 2007 (following the implementation of the Local Administration Law 02/07). However, the capital city of Luanda (which has over seven million inhabitants) has yet to have local elections. In many African countries, political party contesta-

tion is felt most acutely in cities. Urban areas are key sites of opposition political parties or movements (see Table 2). In some cases, such as South Africa, this has resulted in the loss of control of major cities by the ruling party. In others, like Angola, it has not resulted in change in leadership due to the lack of local government elections.

There are several reasons for the rise of political opposition in cities, including the concentration of both educated people and youth. This creates fertile ground for political mobilisation (Pieterse, 2018). Governments therefore often find themselves in an uneasy position between not wanting to grant too much power to (potential) oppositional forces but needing to accommodate them to maintain a certain level of political stability (Bekker and Therborn, 2012).

Table 2. Party dynamics in select African countries.

County and Party dynamics	
Angola Angola has been ruled by the same party since independence, the Movimento Popular de Libertação de Angola (MPLA). While Angola has not had local government elections, support for political opposition parties (e.g. UNITA, CASA-CE) in the last national government elections of 2017 has primarily been concentrated in Luanda, as well as towns that were opposition strongholds during the civil war, such as Huambo.	South Africa South Africa is a constitutional democracy. The liberation party, the African National Congress (ANC), has ruled the country since the fall of apartheid in 1994. In the last local government elections of 2016, the largest opposition party (Democratic Alliance) gained control of several of the key metropolitan areas, either alone or in various coalition arrangements with smaller parties. It also controls the regional government in the Western Cape, a province which is over 95% urbanised.
Kenya Kenya is a multi-party democracy that holds regular elections. Its ruling party is the Jubilee Party. In 2010, Kenya undertook a devolution process following protests from opposition supporters. Political opposition to Kenya's ruling party (led by the Odinga family) is concentrated in towns such as Kisumu and Eldoret, and in slums like Kibera in Nairobi.	Zimbabwe The Zimbabwe African National Union–Patriotic Front (ZANU-PF) has dominated Zimbabwean politics since independence in 1980. Opposition, fragmented among several parties in Zimbabwe, is nonetheless concentrated in cities. In the last elections of 2018, the opposition won in four of the country's ten provinces, including the cities of Harare and Bulawayo.
Mozambique Since the introduction of multi-party elections in 1994, Mozambique has been controlled by the Frente de Libertação de Moçambique (FRELIMO). Political opposition (mostly RENAMO) is concentrated in cities like Matola City, previously a FRELIMO stronghold, and Nampula.	Senegal Senegal was governed by the Socialist Party (PS) from independence in 1960 to 2000, when the Senegalese Democratic Party (PDS) took over. While this party initially enjoyed broad support, resistance against the government has been growing, resulting in large protests in 2011. In 2017, Khalifa Sall, former mayor of Dakar, was imprisoned for five years on corruption charges that are widely seen as an attempt to bar the popular mayor from standing in presidential elections.



Kisumu, Kenya (Source: Cirolia, 2016)

This tension can result in several outcomes. In some cases, especially capital cities, effective decentralisation is blocked in order to keep local governments and opposition parties from becoming a threat to national government and the ruling party (such as in Harare, the capital of Zimbabwe, or Nampula in the north of Mozambique) (see also Bekker and Fourchard, 2013). In other cases, decentralisation is designed around ethnic boundaries as a mode of 'power sharing' and to keep possible ethnic tensions or competition in check (for example in Kenya, Ethiopia, and post-apartheid South Africa) (Kefale, 2014; Cheeseman, Lynch and Willis, 2014). As discussed above, the formation of national agencies and metropolitan authorities, designed to manage key services, are an example of how national governments work to control key urban centres (for example the Kampala Capital City Authority in Uganda, which was established to undermine the local government authority (Gore and Muwanga, 2014).

In addition to formal electoral contestation by political parties, there are also everyday negotiations for power and control of urban space. There is a whole range of important actors who form part of the wider everyday political apparatus of city development in urban Africa (Lindell, 2008; Smit 2018). These actors claim power in myriad ways, some more visible than others, using different tactics and strategies to legitimate their influence. For instance, traditional authorities or religious leaders often hold significant social, economic, and political power amongst local communities, controlling when and how 'buy-in' for development projects is achieved (Gough and Yankson, 2000; Naicker, 2016).

For governments interested in presenting their capital cities as 'world-class', large-scale infrastructure projects are an important site of demonstration (Croese, 2018). As many of these projects require leveraging international finance, international investors or lenders also represent powerful actors in shaping urban development priorities and even political processes (Watson, 2014; Terrefe, 2020). For instance, concessions may be made for states to access funding for the implementation of flagship urban infrastructures projects such as 'new' or 'smart' cities, special trade zones, waterfront development, and BRT/light rail projects (Watson, 2015). Similarly, states can collude with real-estate actors to attract direct investment in land development. For example, Goodfellow (2018) shows how real-estate elites in African cities shape spatial form by encouraging states to clear and allocate well-located land for lucrative high-rise real-estate and infrastructure projects (Goodfellow, 2018).

Other important governance actors in cities are the service providers who operate outside of the formal systems, such as associations, gangs, and cartels. These actors often have no formal political power; nevertheless, they are crucial to the functioning of the state and urban economy as a source of urban service provision, employment, and revenue generation. Moreover, they

SOUTH AFRICAN URBAN GOVERNANCE ACTORS

- Lenders
- Donors
- Traditional authorities
- Faith-based institutions
- Cultural groups
- Cartels and gangs
- Media
- Neighbourhood groups
- Key industries/businesses
- Unions

can exert substantial influence over government through softer forms of power (Goodfellow, 2017). For example, the informal political power that informal/paratransit transport groups enjoy, and their closely interlinked relations with formal power structures, is well documented in cities such as Cape Town, Nairobi, and Kampala (Klopp and Cavoli, 2019).

Overall, the political governance of African cities includes both formal contestation by political parties as well as the plethora of non-state actors interested and involved in politics at the local level.

Fiscal/financial dynamics in urban Africa

In much of Africa, colonial finance of infrastructure included modest investments in the settler towns and large-scale regional connectivity and movement infrastructure. Regional transport development (i.e. rail and highways) and the extractive sectors (i.e. mining) shaped infrastructure investments in these regions, determining which cities grew and which withered (Roberts, 2014). When African countries gained independence in the 1950s and 1960s, the global lending community's focus on regional infrastructure shifted towards large-scale national infrastructure projects. The World Bank often provided finance for these developments, lending to the central governments of newly formed states. National ports, for example, were developed in Gambia, and national highways in Rwanda, Equatorial Guinea, Comoros, and Guinea-Bissau. In addition to transport investment, post-colonial investment was focused on rural development. For example, World Bank projects in Kenya, Libya, Liberia, and Cameroon focused on agricultural modernisation (Arrobbio et al., 2014).

On the back of international borrowing for large-scale infrastructure and manufacturing, and the devaluation of local currencies, most developing countries faced a crippling debt crisis (Becker, Hamer and Morrison, 1994). The World Bank and the International Monetary Fund (IMF) moved to 'restructure' loan agreements, with the intention of making loan repayments more manageable. African governments underwent extreme 'structural adjustment' in the 1990s through the Heavily Indebted Poor Countries (HIPC) debt relief programme. Loan restructuring curbed lending across Africa and the developing world and coincided with the World Bank's global repositioning as a 'knowledge organisation' (Arrobbio et

al., 2014). The result was that the World Bank focused on 'technical assistance', moving away from the large-scale infrastructure investments that had dominated its earlier lending practices (Buckley and Kalarickal, 2006). Over this critical period in the expansion of cities, infrastructure investments to support urban growth were thus limited by austerity programmes.

The result has been a huge and sustained backlog in urban infrastructure investment. The 'finance gap' or 'budget shortfall' are popular phrases used to describe the shortfall in funding needed to meet the current and ever-growing demand for infrastructure and services. The majority of studies on the African 'finance gap' work with country level aggregations and data, providing wildly varying estimates (Paulais, 2012; Goodfellow, 2020). Less attention has been paid to the urban finance gap. The exception is the 2010 World Bank publication 'Financing Africa's Cities: The Imperative of Local Investment' (World Bank, 2010). This study used three different methods of estimation, and concluded that Sub-Saharan Africa needed anywhere from \$15 to \$30 billion per year to cover the backlog and mounting service needs (Paulais, 2012).

This infrastructure finance gap has many drivers. One key issue is that the majority of infrastructure investment is funded by national governments, with limited engagement from private finance (African Development Bank, 2018). This reflects the structural constraints of global capital markets. Large networked infrastructure requires long-term financial commitments that can be recouped over time. However, in Africa, local financial markets are underdeveloped, and access to global markets is highly constrained. Despite the large pools of global capital sitting in banks, pension funds and the like, Africa's public infrastructure assets are not regarded as a competitive asset class. This is due to perceived higher (or unknown) regulatory and political risks and lower returns. The sorts of projects that do attract investment are shopping malls and coal-powered energy plants, rather than critical urban services such as public transport or sanitation.

It was only in the mid-2000s that Africa's urban infrastructure deficit and finance gap gained the attention of international multi-lateral institutions (Smoke, 2001; Paulais, 2012). Since then, the World Bank – and other lenders and donors such as the African Development Bank – have undertaken projects in various sectors in African cities (Arrobbio et al., 2014). However, these projects have often not been coordinated with one another,

and have not flowed through local governments (Foster and Briceño-Garmendia, 2010). This has further exacerbated infrastructural fragmentation. In addition to the rising interest of multi-lateral lenders in African urban infrastructure, bilateral country agreements have become more prevalent. For example, the establishment of the China-Africa Development Fund in 2007 has expanded Chinese private equity investments in Africa (Corkin, Burke and Davies, 2008). There are several large-scale urban transport infrastructure projects funded by Chinese lenders, including ring roads in Luanda (2004) and Addis Ababa (2006), highways in Nairobi (2006 and 2007) and Kigali (2003), a rail line in Abuja (2006), and light rail in Addis Ababa (Shen, 2015). Similarly, these projects have not been coordinated with the efforts of more traditional donors and lenders.

Notably, and despite fiscal decentralisation reforms, money flowing through African cities often fails to engage with local or city governments (UCLG, 2017). Local governments have experienced limited fiscal decentralisation. The resources which they do have are largely spent on salaries (current), rather than on capital (Paulais, 2012). In many cities, for example in large and medium size Kenyan, Tanzanian, and Zambian cities, local governments' largest sources of revenue include property taxation, business licences, parking fees for cars, and charges for entering minibus-taxi ranks (often linked to markets and transit hubs). Fare and service charges, for

example for using formal public transport, water, or electricity, are ringfenced and paid directly to the agencies or private companies tasked with their provision. The outcome is that city governments have limited capacity to shape urban decisions, and there is limited accountability built into the system.

The implications for infrastructure in African cities

Partial and contested territorial, political, and fiscal decentralisation has had direct implications for how infrastructure and space are governed. By and large, city governments, where they exist at all, are not central players in decision-making about infrastructure, such as roads or public transport. Despite the limited role of local governments in infrastructure, Africa's growing urban areas, and the infrastructural networks and service systems that underpin them, are key sites where power between a diversity of governance actors plays out and is negotiated. In the context of infrastructure, this can take many forms, from the control of utilities to 'big bang' infrastructure projects. Fragmented urban governance and 'big bang' political projects have contributed to the material and spatial development of cities in many ways. Common issues in African cities are urban sprawl and low residential densities. Another example is the emergence of hybrid infrastructure systems.

MOBILITY GOVERNANCE IN AFRICAN CITIES

While the previous section focused on the urban governance trends in Africa and their implications for city infrastructure and planning generally, this section focusses on mobility infrastructure and how it is governed.

A consistent finding of the academic literature is that mobility governance in African countries is fragmented and uncoordinated (e.g. Kane, 2002; Pirie, 2014). That is to say, there is no fully networked mobility system, wherein all the infrastructures and services form part of a coherent urban system. African cities can thus be characterised as 'post-networked' or 'partially networked' (Jaglin, 2014; Coutard and Rutherford, 2016), where formal infrastructure networks are supplemented by informal and private service delivery systems (Goodfellow, 2020). Within the city planning and urban studies literature, this has been referred to as hybrid or heterogenous configurations of infrastructures or services (Jaglin, 2014, 2016).

With regard to mobility, the overall lack of investment in urban transport systems – particularly urban public transport systems – has created a large gap in urban service provision. These have been filled by informal operators and trips made by foot (Pirie, 2014). A recent World Bank report argued that the high cost of mobility and the failures of more centralised and public models of transport provision in African cities can be attributed to the fragmented and sprawling urban fabric (Lall et al., 2017). Overall, in many African cities, we see the emergence of multi-layered and uncoordinated systems of mobility, made up of a complex web of actors and material investments. While the below Table 3 is a simplification, trips in African cities are typically taken with a complex mix of public and private, motorised and non-motorised modes.

The diversity of actors, formal/informal and public/private, has implications for mobility governance. There



Table 3. Modal share in selected African cities (share %).

City	Large bus	Minibus	Taxi	Motor-cycle	Private car	Walk	Other
Abidjan	11	19	29	0	18	22	1
Accra	10	52	9	0	13	12	4
Addis	35	20	5	0	7	30	3
Bamako	1	10	5	56	19	-	9
Conakry	1	14	6	0	1	78	0
Dakar	3	73	6	6	11	-	1
Dar	0	61	1	1	10	26	1
Douala	10	-	13	12	2	60	3
Kampala	0	41	-	20	35	-	4
Kigali	1	75	10	0	10	5	0
Nairobi	7	29	15	2	-	47	0
Ouagadougou	8	0	-	58	14	-	20

Source: Adapted from Kumar, Foster and Barrett (2008), based on documents published by city authorities. Note: not all rows equal 100 due to rounding, and modal share for Bamako, Dakar, Kampala, and Ouagadougou includes only motorised trips. Where marked '-' the data is not available.

is commonly competition over the control of urban transport infrastructures among various actors. This results from the fact that in many countries, the *de jure* responsibility for sectors such as roads, public transport, and urban land-use and planning is shared across various actors and agencies. These may function at national as well as municipal government levels, or in countries such as Namibia, South Africa, and Kenya can also include regional government. In many countries, there is a lack of clarity in terms of who holds responsibility for transport and mobility, which is often conflated with related sectors such as roads. Moreover, the responsibilities for these sectors at local government level are often not matched with the appropriate levels of resources and capacity⁸.

The fragmentation of material and institutional systems creates fertile ground for competition among actors with deep vested interests. These might include paratransit associations, unions, cartels, corrupt officials or politicians, lending agencies, and many others. Practices such as rent-seeking and skimming occur along all parts of the infrastructure value chain. Both large-scale transport projects (such as trains) and smaller-scale systems (such as paratransit) are prone to these activities, albeit for different reasons. The former tends to be shaped by power of large tenders while the latter is due to the informal, yet significant and difficult to track, revenue streams that flow from fares. However, while corruption is important in mobility systems, it also must be put in its wider context: there are many actors within the system that are invested in providing services and delivering infrastructure.

Overall, there is a strong bias among governments, donors, and lenders for 'big bang' mega-projects, and from BRT to new light rail systems, African cities have seen a proliferation of these. These new investments are overlaid on existing systems, many of which have been incrementally developed for decades. While there is a strong political bias for megaprojects that promise to solve urban mobility issues in one fell swoop (Klopp et al., 2019), in reality these interventions are at best partial correctives to complex problems. Reflecting on this complexity, this section unpacks the existing state of knowledge on how particular parts of the mobility system – in its material dimension – are governed in African cities. Here we cover:

- Roads and private cars
- Buses
- Urban rail

- Paratransit
- Non-motorised transport (NMT)

Roads and private cars

Roads are by far the dominant transport infrastructure in Sub-Saharan Africa (Gwilliam et al., 2011). Road infrastructure is typically basic: outside South Africa, over half of urban roads are unpaved, and more still are in poor condition (ibid.). This was not always the case; in the era of structural adjustment, lack of preventative maintenance resulted in dramatic deterioration of road infrastructure in Africa (World Bank, 1988).

Funding constraints at the national level are a significant cause of urban road deterioration (Adam Smith International, 2005). In most African countries, the focus of grants and loans has been on capital investments, and particularly new road construction. While there is often enthusiastic government support for building roads, investments in the maintenance and management needed to sustain their value and usefulness has been minimal (Wasike, 2001). Gwilliam, Foster, et al. (2008) refer to this as a 'capital bias in road spending'. This focus on capital investment has been concentrated on regional road networks. This is particularly true of national investments, which are often supported by development partners who want to see on-the-ground developments that unlock 'economic potential' of regions and countries. Local governments, in contrast, tend to have comparatively little money to spend on capital generally and roads, in particular.

Investment in roads is also deeply rooted in developmental discourses related to GDP growth. Development of a regional network of connectivity across the continent has been a cornerstone of the discourses on economic development and the programmes of key international lenders (such as the World Bank) for the past decade. The Trans-African Highway, for example, promised to unlock landlocked countries for business and growth (Gwilliam et al., 2008). In many cases, these large-scale highway investments have required the development of bypass roads around cities to ensure rapid movement along corridors. These new investments have shaped development in cities, often without intention or care. While aiming to bypass the city, they are in fact transforming the urban landscape – reflecting a sort of 'development by default'.

⁸ This draws on data collected for the UCLG-OECD 2019 World Observatory on Sub-national Government Finance and Investment. The individual country profiles can be viewed on <http://www.sng-wofi.org>

CHINESE INVESTMENT IN ROADS IN AFRICA

There is a growing number of large-scale urban transport infrastructure projects funded by Chinese lenders (Paulais, 2012). These include for example, the ring roads in Luanda (2004) and Addis Ababa (2006), and major road projects in Nairobi (2006 and 2007) and Kigali (2003). Chinese construction companies have been involved in many more projects as contractors, for example for the Kondele Bypass Road in Kisumu, Kenya, which connects two national highways that for part of the Trans-African Highway project. As of 2018, Chinese actors funded one in every five infrastructure projects on the continent and were collectively the most prolific builder of projects (Deloitte, 2018). The case of Angola shows some of the dangers of this scale of debt funding for infra-

structure development. Between 2005 and 2009, an average of \$2 billion was spent each year on road construction, about a third of annual public spending (Jensen, 2018:12). Most public spending during these years was funded through oil-backed credit lines from China. However, the use of these funds lacked proper oversight, budget assumptions were unrealistic, planning overemphasised transportation at the expense of other areas of infrastructure, and financing was pro-cyclical. As a result, debt accumulated rapidly both before and after the onset of an economic crisis in 2014. Understanding the governance of (Chinese) infrastructure spending is important because poor governance is the major reason why infrastructure projects fail to meet their timeframe, budget and service delivery objectives (OECD, 2015 cited in Jensen, 2018:18). In Angola, official data indicate that the amount spent per lane kilometre of road between 2005 and 2009 was about US\$ 682,762 which exceeds even the highest estimates of international multilateral finance organisations (Jensen, 2018).

The institutional arrangements for road governance are typically complex, shaped by an erratic mixture of centralisation and decentralisation. In practice, formal delineations of responsibility do not always correspond to *de facto* divisions of labour. For example, Ghana has formally devolved urban transport to local governments, but local capacity and resource constraints mean that public transport is typically planned and implemented by a cluster of national institutions including the Ministries of Transport, Roads and Highways, as well as Local Government and Rural Development, the Motor Traffic and Transport Department of the Ghana Police, the Driver and Vehicle Licensing Authority, and the National Road Safety Commission (Cities Alliance, 2017).

In Kenya, budgets and power are concentrated in the national government and its three road agencies, but responsibility for roads, as per the 2010 constitution, sits with the local (county) governments. In all Kenyan cities, roads are thus variously the responsibility of the Kenya

National Highways Authority, the Kenya Urban Roads Authority, the Kenya Rural Roads Authority, as well as the respective county governments. There is also the Kenya Roads Board which controls important funds (such as the fuel levy). In Cameroon, national and rural roads are administered by the national Ministry of Public Works, while urban roads fall under the Ministry of the City. The advent of Bus Rapid Transit (BRT) in several cities (discussed in more detail in the next sections, and in the paper in this series, 'Public transport system design and modal integration in Sub-Saharan African cities', Venter et al., 2020) has tended to exacerbate this fragmentation. It has introduced new institutions with (partial) infrastructural responsibility for BRT-carrying roads. The plethora of actors and mismatch between *de jure* and *de facto* responsibilities present serious governance issues related to control, finance, and management.

Road governance is not exclusively, or even primarily, a matter of capital investment: road operations and

management are crucial sites of governance. Traffic management in particular is a source of pain in many African cities. As traffic management is an ongoing process, there is no substitute for strong, capacitated institutions – without which signalling, enforcement, and parking all deteriorate (Adam Smith International, 2005). Operations management and capital investment also interact in stark ways. For example in Johannesburg, where urban road infrastructure is generally good, lack of coordination between city agencies and private sector actors means that the same stretch of road can be dug up separately, in succession, for the laying or maintenance of water, electrical, gas, and internet infrastructure – without the participation or even the knowledge of either the Johannesburg Roads Agency or the Metro Police (who would be expected to manage traffic).

One of the distinguishing features of Sub-Saharan African cities is the degree to which their sprawling forms have been shaped by the modal dominance of automobiles and the requirement for roads that support car and truck use (Urry, 2004; Beck, Klaeger and Stasik, 2017). Both colonial and post-colonial authorities and planners have designed cities largely around the needs of private drivers (see for example Morgan, 2018 on two cities in South Africa). As a result, drivers are assigned a presumptive claim to infrastructure seldom afforded the users of any other mode. Beyond roads, the governance of private automobiles is an area that requires substantial further research. Cars are subject to multiple complex interlocking systems of governance such as vehicle and driver licensing, regulations regarding their provisioning and import, and traffic management and policing. However, there is little systematic scholarship focusing on this larger picture in any given country (with some exceptions, see Hart 2016). The governance of automobiles – everything from import duties to traffic management – forms a pressing agenda for future research given the importance of cars in African cities.

That said, roads are not the exclusive preserve of private cars despite being frequently treated as such. With few exceptions, public transport in Africa is overwhelmingly road-based. Roads and public transport are nonetheless frequently governed as independent issues, and road infrastructure is focused on traffic flow and private vehicles despite its importance to much broader constituencies. Poor road quality is a significant determinant of public transport effectiveness and efficiency: in several cities, poor road quality effectively close off entire areas from conventional buses (Adam Smith International, 2005).



Kisumu, Kenya (Source: Cirolia, 2016)

Buses

A common experience in Sub-Saharan cities is of long-crumbling legacy public transport systems. Most African cities experienced the privatisation and deregulation of buses in the 1980s and 1990s (Adam Smith International, 2005). Bus services that remained in public ownership (such as in Kampala) typically succumbed to austerity; most of those that were privatised (such as that of Nairobi and Dakar) found the economics of public transport extremely difficult, lost significant market share, and withdrew to only the most lucrative routes (Gorham, 2017). The numbers of both companies and services declined (Pendakur, 2011). Several cities opted for arguably the worst of both worlds: abortive privatisation through protected and mismanaged monopoly concessions. This resulted in deteriorating services and diminishing ridership, but guaranteed profits for the new owners. Examples include bus services in South Africa and Cameroon. A combination of weak yet rigid governance with political contestation results in bus systems succumbing to path dependence and inflexibility. In many cases, both fares and routes remain set for decades (Kumar, Foster and Barrett, 2008). An example is provincial and municipal buses in Johannesburg, both of which run routes established in the 1980s.

In recent years, new investments have been made into Bus Rapid Transit (BRT), a bus technology that involves large capital expenditure in dedicated lanes and above-grade stations in order to increase operating speeds and, in principle, reduce operating costs. The enthusiasm with which BRT is being adopted in Africa surpasses



Lusaka, Zambia (Source: Cirolia, 2016)

the narrow benefits of the mode, which in fact is often ill-suited to the low densities of African cities (Scorcia and Munoz-Raskin, 2019). BRT's popularity is also often a result of a powerful international advocacy-consultancy industry that has grown around it, the willingness of funders to back it, and the "economic and political sublime" that results from proponents' grandiose promises of urban transformation in short timeframes at low cost (Klopp et al., 2019:20).

New BRT systems in Sub-Saharan Africa, with the exception of some in South Africa, have entailed the creation of new state agencies (Klopp et al., 2019). BRT is almost always accompanied by major transport governance reforms, typically but not always involving the 'metropolitanisation' of key urban transport functions and their transfer to nationally accountable technical agencies (Klopp et al., 2019). Examples include the Nairobi Metropolitan Area Transport Authority (NaMATA) and Dar Rapid Transit (DaRT), all of which were established expressly for the implementation of BRT. This is usually justified on the grounds that such agencies have superior capacity for implementation. However, they often serve to fragment urban transport governance, and constrain its accountability narrowly to national policymakers. Key exceptions to these dynamics are South African cities, which have typically undertaken BRT without these centralising agencies. BRT projects in Africa have thus resulted in a general disregard for effective, integrated transport governance. As Klopp et al. (2019:22) find, "[i]nstitutions like NaMATA or LaMATA [the Lagos Metropolitan Area Transport Authority] may in principle spa-

tially integrate the governance of transport across the metropolitan region, but they do little to integrate governance." These institutions are in the business of project delivery rather than ongoing improvements in mobility or accessibility.

African BRTs, contrary to the grandiose promises that typically accompany their initiation, are frequently beset by operational and financial difficulties. It is a matter of open debate to what degree operational deficits are due to implementation problems, such as failure to attract passengers from existing modes, or more structural problems, such as the low densities of African cities, which do not justify BRT as a mode (Ferranti et al., 2020; Scorcia and Munoz-Raskin, 2019). In either case, the fiscal unsustainability of BRTs represents a failure of governance. The replication of BRTs, and carbon copy

HOW CONDITIONAL GRANTS INCENTIVISED BRT IN SOUTH AFRICAN CITIES

In the case of South Africa, the BRT agenda has not come primarily from global lenders, but instead has been pushed by a coalition of government actors within individual cities, the National Department of Transport, and the National Treasury. Inspired by global discourses on Transit Oriented Development (TOD) (Wood, 2014), the national government created a conditional grant specifically for BRT, the Public Transport Infrastructure and Systems Grant (PTISG). Cape Town, Johannesburg and several other cities undertook to develop BRT in alignment with this policy approach. Low density, sprawl, and the polycentric nature of South African cities, as well as implementation failures, have put strain on these new systems, resulting in large operational deficits which are carried by the local government.

agencies to manage them in contexts where they are not suitable, is a reflection of the powerful role that lenders and donors can play in African cities.

Urban rail

Several African cities, including Dakar, Kinshasa, Nairobi, Johannesburg, and Cape Town, have legacy urban rail systems. Notably, all these systems have suffered from the same political economy of austerity that affected buses so severely, as discussed earlier. As a rule, urban trains in Africa are cheap for riders, expensive for the state, under-maintained, and under-capacitated. Modal share of rail is generally low, estimated at under 2% for Dakar, Nairobi, Lagos, and Kinshasa (Kumar et al., 2008). In South Africa, acute governance failures in rail have led to dramatically deteriorating service in the last few years, and ridership has dropped dramatically. In Cape Town, there was a 30% drop in 2018 alone (CCT, 2018).

There are four major new urban rail systems in Africa: Gauteng's Gautrain Rapid Rail Link, the Addis Ababa Light Rail Transit system (AA-LRT), the Lagos Urban Transport Project Phase 2 (LUTP II), and the Abuja LRT. The governance and financing of these projects raises interesting questions related to decision-making, control/autonomy, and the long-term operations of these systems.



Addis Ababa, Ethiopia (Source: Cirolia, 2016)

9 This draws partly on primary research from an ongoing project.

- **Gauteng:** The Gautrain Management Agency (GMA) was established as an agency of Gauteng Province in 2006 tasked entirely with the planning and implementation of Gautrain (GMA, 2018). It has since been made the centrepiece of a more sweeping reform of mobility governance in the province, culminating in the 2019 establishment of the Gauteng Transport Authority (GTA) as the first such institution in the country, the full institutional and constitutional implications of which remain to be seen. The Gautrain itself has been moderately successful as a mobility intervention, with high peak ridership and relatively smooth functioning, but has had more mixed results in a wider sense. Specifically, it has struggled to encourage off-peak ridership or demand smoothing; according to City officials, it has poor passenger turnover; and what spatial effects it has had (including densification) have been weakened by unsupportive and un-integrated planning around its stations⁹.
- **Ethiopia:** In 2008, the Ethiopian Railway Corporation (ERC) was established to consolidate all railway infrastructure and services and deliver the AA-LRT (Kassahun and Bishu, 2018). The ERC outsourced the operations, maintenance, and management of the LRT system to China Railway Group Limited (CREC) and Shenzhen Metro Group Company Limited due to limited internal capacity (World Bank, 2016). The AA-LRT was operational in 2015 and cost US\$475 million in capital costs to construct. Eighty percent of the finance for the project came from the Export-Import Bank of China and 20% from the national government. While the AA-LRT is heavily used (in part owing to it being highly subsidised), it has been critiqued for causing both institutional and spatial fragmentation within the city. It was designed abroad with little knowledge or concern for Addis Ababa's existing urban fabric. There is also concern about the opaque loan conditions and the long-term maintenance and repair costs associated with using Chinese technologies (see for example Nallet, 2018; Kassahun and Bishu, 2018).
- **Lagos:** Following the construction of Lagos' BRT, under the name Lagos Urban Transport Project Phase 1 (LUTP I), Phase 2 (LUTP II) was undertaken in the form of the first two of seven planned

commuter rail lines. Completion of the first line was delayed by funding issues from 2011 to 2020. The second line will be built starting in 2021 (Railway Technology, n.d.). The LUTP is the sole responsibility of the Lagos Metropolitan Transport Authority (LaMATA), a semi-autonomous institution reporting directly to the Governor of Lagos State (ICR, 2020).

- Abuja: Although announced in 2007, around the same time as Gautrain and AA-LRT, Abuja Light Rail Transit (also called Metro) only commenced operations in 2018 due to underfunding. The project was built by the China Civil Engineering Construction Corporation (CCECC) and funded largely by the Export-Import Bank of China. Very little has been written about Abuja LRT, and almost nothing since it began operations. Its governance, effectiveness, and broader spatial implications require further research.

DIRECT OR DELEGATED GOVERNANCE?

Governance of mobility by government can be done directly - where the institution regulates or delivers the function itself - or by way of delegation to an agency or other institution. In South Africa, the operations of the Gautrain Rapid Rail Link are delegated by the Gauteng Provincial Government to the Gautrain Management Authority. The Gauteng Provincial Government has little direct control over the operations of Gautrain - also due to the related institutional arrangement of a turnkey concession - but has as a result had fewer internal capacity challenges. Delegated governance commonly results in upwards accountability: DaRT (in Dur es Salaam), NaMATA (in Nairobi), and the Passenger Rail Agency South Africa PRASA) all have appointed leaderships from their respective national governments.

- Gautrain, LUTP II and AA-LRT were undertaken largely independently of municipal governments, resulting in a striking lack of integration with legacy transport systems and existing land-use patterns (Nallet, 2018). Similar critiques exist for the Addis light rail. These are examples of how project-driven transport reform, even when relatively successful on its own terms, can fail to improve (or even weaken) overall mobility governance.

Paratransit

With buses and trains having deteriorated, and new BRTs and light rails only serving small areas of the city, the mobility needs of urban residents have only increased. Into the gap have stepped various forms of privately provisioned transport-for-hires, typically small buses: *dala dalas* in Tanzania, *matatu* in Kenya, and *cars rapides* in Dakar. Motorcycle-taxis are called *okada* in Lagos, and *boda boda* in Uganda and Kenya (Kumar, 2011). These modes together have been called 'paratransit'¹⁰, to refer to the flexibility with which they operate, or 'popular transport' (Mutongi, 2017; Hart, 2016; Behrens and Salazar Ferro, 2016; UITP, 2008).

Being privately operated, paratransit's funding and financing is very different from the networked, public, and fixed-route investments which characterise historical efforts to develop public transport in African cities (and indeed are the more classical understanding of public transport in developing cities). It does not require large and coordinated upfront investment, such is the case in BRT or trains. It tends not to get 'special' or 'dedicated' investments which create long-term fixity and structure. These systems tend to be financed privately on a smaller scale.

Globally, paratransit has a reputation for providing what are perceived to be sub-standard services, and for engaging in local political battles (Schalekamp et al., 2009; Kumar, 2011; Mutiso and Behrens, 2011; Behrens, McCormick and Mfinanga, 2015; Goodfellow, 2015). It is, however, increasingly recognised that these services are central to urban mobility systems. For example, when Cameroon tried to eliminate paratransit by banning minibuses, shared sedan taxis quickly came to fill the same newly vacant niche (Kumar et al., 2008). In Kenya, the many efforts to ban paratransit have been met with

¹⁰ This is not to be confused with the U.S. term for transit for people with physical impairments.



Table 4. Modal share in Lagos, Nigeria.

Mode	Share %
Rail	1
Bus Rapid Transit	2
Regulated buses	2
Unregulated buses (paratransit)	27
Water	2
Motorcycles (paratransit)	2
Cars	19
Sub-total paratransit	74
Total	100

Source: Gorham (2017)

protests. In the case of Lagos, paratransit makes up almost three quarters of all service provision (Table 4). In South African cities, during the COVID 19 pandemic, the minibus-taxis provided an effective lobby against the lock-down measures.

Despite their importance and power, these paratransit sectors operate on a commercial basis with limited (if any) subsidisation from the state. Subsidies, where they exist, largely take the form of recapitalisation

programmes which do little to address the marginal economics of the sector (see Fouracre et al., 1994 on Ghana; Bolade, 1998 on Nigeria). Paratransit is frequently operated by owner-drivers, but in some contexts – especially with more capital-intensive modes such as minibus-taxis – a number of vehicles are owned by the same person or company. In these cases drivers (and sometimes conductors) are either salaried employees or – commonly – lease the vehicle at a fixed daily rate. Paratransit is therefore a crucial site of not only mobility, but economic activity, employment, and exploitation (Rizzo, 2011, 2017). These labour relations, as well as the relations and institutional relationships between vehicle owners and organised associations of owners, are themselves a site of governance (Venter, et al., 2020).

Paratransit is a source of revenue for many local governments. In contrast to the BRT and rail (discussed above), it is therefore *negatively* subsidised as a mode of transport, paying the state rather than getting money from it. For example, Cirolia (2016) shows that in Kisumu (Kenya) bus park fees (for minibus-taxis, locally called *matatus*) and parking fees (which includes licensing disks for three-wheeled motorised vehicles called *tuk tuks*) are significant revenue streams for the Department of the City of Kisumu, a sub-department within Kisumu County which is responsible for the operations of the urban area. Notably, *boda boda* motorcycle-taxis, which are meant to pay fees, in fact do not, see Table 5. They have resisted paying and argue that they are providing a public service. This is common across East Africa; minibus-taxis pay significant fees to the local government whereas motorcycle-taxis avoid payment.



Table 5. City of Kisumu, Kenya, post-devolution revenue collection financial year 2016/17.

Revenue streams	Revenue (KSh)	% of total city own source revenue
Matatu bus park fees	76 284 500	12.6
Parking fees (including tuk tuk)	89 815 950	14.9
Boda boda fees	0	0

Source: Adapted from Cirolia (2019). Compiled by the author from data provided by J. Obera, Director of City Finance

The politics of paratransit are complex and context-specific. Much depends on the market and institutional structure of operators in any given city. For example, Johannesburg's oligopoly produces a strongly centralised industry with effective bargaining power (visibly asserted during negotiations around BRT). More fragmented paratransit markets exert such power as they have in different, less-institutionalised ways. Goodfellow (2015) explains differences of effectiveness of paratransit regulation between Kampala and Kigali by pointing out that paratransit operators in Kampala represented a major political client group (undermining attempts to regulate) whereas operators in Kigali were important for their role in making legible and securitising the city, (which complemented attempts to regulate them). Another major respect in which paratransit is politically significant is that the owners, operators, drivers, and other workers in the system have strong interests in preserving or extending their positions, and hold structural power by being able to disrupt the ordinary functioning of the city. The effects of this are particularly visible in the experiences of various BRT systems on the continent (McCaul and Ntuli, 2011).

Sub-Saharan BRT systems have typically adopted/adapted the Latin American model of using BRT operating contracts to attempt to both 'buy off' and formalise the paratransit incumbents. This has worked to varying degrees, but introduces both costs and complexities to the resulting systems. An emerging line of thinking, especially in South Africa, is that paratransit is not the 'problem' – to be solved by strategies of 'displace and replace' – but rather an existing, albeit sub-optimal, *solution* to the problem of immobility. New models, still in very

early stages, involve a closer partnership with paratransit operators. There have been other attempts, of varying success, by governments to regulate, if not necessarily 'formalise', paratransit. In 2003, the 'Michuku Rules' introduced by the Kenyan government aimed to reduce road deaths by, inter alia, requiring *matatus* to feature speed-limiters, seatbelts, and licensed drivers. These measures were short-lived (Lamont and Lee, 2015).

The fact that states have struggled to control paratransit does not mean that it is ungoverned or un-regulated. In most countries there are various forms of industry self-governance, often to manage supply. Minimal state regulation often reinforces the power of this self-regulation. For example, Kenya and South Africa both mandate operators' membership in formal paratransit associations, which impose their own requirements on providers. In Nigeria, the National Union of Rail Transport Workers exercises considerable control over *danfo* buses, especially at stations and exchanges. Tanzania and Kenya each have separate associations for owners and drivers of their respective paratransit modes (McCormick, Schalekamp and Mfinanga, 2016; Behrens, McCormick and Schalekamp, 2016). These forms of non-state governance are complex and influential.

In response to the challenges of safety and accountability, there are increasingly attempts by private sector to invest in new technologies which will make paratransit more efficient and accountable, for example, SafeBoda in Kigali, AftaRobot in Johannesburg, and uberBoda in several African cities (Kazeem, 2019). These new technologies claim that they will shift power into the hands of users, changing the governance dynamics of these sectors. At the same time, these programmes bring new actors into the mobility-governance nexus, as tech companies and funders begin to engage with paratransit. Research is needed to better understand the role that these tech companies will play in the governance of mobility and the extent to which investing in non-material networks (i.e. digital systems) will in fact improve service delivery.

Walking and cycling

Non-Motorised Transport (NMT) is a key mode of transport in African cities (Mitullah and Opiyo, 2012). In most African cities, people have to walk to fill the gaps in both formal and informal service provision. In some cities cycling is also a mode of urban transport, although it is everywhere much less common than walking.



Kisumu, Kenya (Source: Cirolia, 2016)

With the exception of South Africa, where the limited NMT investments are often critiqued for catering to the middle class (Morgan, 2018), facilities for pedestrians and cyclists are largely neglected by African governments. There is little survey or comparative literature on NMT in Africa. One of the few pieces of survey literature, produced by the United Nations Environment Programme, finds that of 13 African countries studied, while all had some commitment to NMT in National Policy, only Uganda, South Africa, and Tanzania had strong national NMT policy, and no African countries showed strong performance on NMT implementation (UNEP, 2016). Kenya and Namibia were found to have cities with stronger policy than their national governments. While there is a broad movement towards investing in NMT, as a policy area it is still largely treated as the 'negative space' left around the edges of mobility governance.

Key mobility insights

As we show above, key aspects of urban governance in Africa cities are visible in the context of mobility. In particular, we show that interventions into mobility systems often take the form of, or are closely associated with, a proliferation of agencies. This mirrors the wider governance trends discussed in the earlier sections of this paper. BRT systems are a good example of this, as they have been accompanied in Lagos, Dar es Salaam, Accra, and Nairobi – the latter in anticipation of BRT – with additional agencies to implement and manage the new bus systems. New agencies are typically introduced with claims to be rationalising mobility governance arrangements, but just as typically fail to deal with or outright neglect the institutions of state that already exist. There is a direct tension between the introduction of institutions to meet imminent needs and the reform and improvement of existing institutions.

In addition, mobility governance is inherently political. This is true in the grand sense of transport megaprojects, such as Gautrain, Dar Rapid Transport, and new highways in Nairobi, which require and represent significant flows of power and money and reconfigurations thereof. But it is just as true in the smaller, less obvious sense of the everyday operations of systems: *boda boda* operators can refuse to pay revenue in Kisumu; BRT station staff and management have control over the operations of the system and the money and interests involved; and

transport operators of all kinds determine whether people can get to work, to places to vote, or anywhere else. Both macro- and micro-politics not only determine the success or failure of a mobility intervention (as is easy to acknowledge), but mobility interventions in turn cannot avoid having significant political implications. It is therefore essential when engaging with mobility governance to consider the complexity of power relationships at various scales.

Not only is politics vital, so too is finance. Governance arrangements in the mobility sector are given effect not only in their formation, but in their resourcing. Mobility costs money – a cost borne either indirectly or directly by both mobility individuals and by the state. A major determinant of the shape of mobility systems, and the outcomes of any changes to them, is who has money, how much they have, and who decides how it can be spent. Within the state, fiscal and financial arrangements are crucial to understand mobility systems: the degree to which operating and capital expenditure is rule-bound, the rules themselves and the room for exceptions, the fiscal relationships between different institutions of the state, and so on all have profound consequences for mobility. In turn, mobility reforms change those relationships and rules. Different modes of travel attract different levels of subsidy from the state, where typically private cars are the most heavily subsidised (directly and indirectly). Subsidies are generally smaller for trains and smaller yet for buses, with little or no funding for non-motorised transport, and a negative subsidy imposed on paratransit in the form of licensing fees and taxes. These regimes of differential subsidy and taxation of mobility are seldom the outcomes of rational processes of evidence-based policymaking; they nonetheless represent a major component of mobility governance.

Finally, the institutional, political, and financial domains of mobility governance need to be understood in the context of the multi-scalar nature of city systems. Mobility systems, and their concomitant governance arrangements, are embedded within broader systems of governance and the city. This is particularly true in larger urban agglomerations which require coordination across several levels of government. Mobility, although particular in its significance and dynamics, must be understood in the context of Africa's changing and emerging urban dynamics. We discuss this further in the next section.

THE FUTURE RESEARCH AGENDA: WHAT AND HOW?

The following section explores what should be the future research focus and how this research should be undertaken. In terms of *what*, we argue that research should focus on city-systems and accessibility. In terms of *how*, we argue for greater attention to how change actually happens and the development of deep and rich knowledge partnerships.

The African city-system as a point of departure

It is common that mobility governance is understood as a sub-field of transport studies. However, our work shows that it is vitally important that urban mobility governance be understood in the context of urban governance and particular urban systems. We thus stress the importance of city-systems (rather than cities), as urban mobility and urban governance both have messy spatial boundaries that are shaped by regional and even country-wide dynamics. Most importantly, starting from a frame of urban governance allows for the core unit of analysis to be the city-system rather than a particular technological system or service, such as BRT or light rail. By starting with the city-system it is possible to see clearly how, in the context of urban Africa, there is a clear disjuncture between the territoriality of the city, the governance institutions, and the mobility systems. These disjunctures provide fertile ground to consider holistic interventions, some of which might lie outside of the conventional domains of transport planning and policy.

Studying the city-system requires exploring how governance arrangements interface with the material structures of the city. A key interface between governance and infrastructure is money. Money matters for urban mobility systems. This includes how much of it there is; which actors/institutions control it; how it flows through the urban system; and what sorts of contracts (both informal and formal) shape these flows (e.g. who holds risks related to it). Flows of money are key to understanding

the nature of accountability. This is especially clear when it comes to matters of urban governance, as municipalities typically enjoy (or suffer) a complex mix of sources and conditionalities to their revenue. Each city has a unique set of financial dependencies, which must be understood on its own terms to understand how mobility is governed in that city.

Overall, in studying the city-system, it is important to understand complexity and relationships. This includes understanding the disjunctures between urban territories, urban governance, flows of money, and power dynamics, and how these shape mobility. It also means moving the focus to the relationships between actors across modes, rather than how best to govern a particular technology.

From mobility to accessibility

The debates on urban mobility function as an extension of older debates on transportation and cities. While transportation is important, mobility captures the urban outcome that is desired. The shift reflects a change in thinking from a focus on the technologies of movement (e.g. buses or trains) to improving how people move through cities to access things like work and housing. The rise of interest in Transit Oriented Development (TOD) in African cities reflects this shift. It takes into account not only transit, but also land use, planning, and housing patterns in cities. However, it has not been nearly as applicable as it could have been had the real dynamics of African cities been taken into account. We argue that it is imperative to study the intersections between land use and mobility infrastructure (much like TOD suggests). However, it is important to think beyond the question of housing and understand the wide range of things people want to access, formal and informal modes of work and living, and the many ways in which people are mobile.

Attending to this, a further development in this sector is the shift from mobility to accessibility. This shift goes from considering how to move people through

geographic space to understanding how people access whatever it is they need or desire. This could include services, employment, social/cultural/political activities etc. Here it is important to look at a wider array of desires beyond just accessing services or employment. The shift towards measuring accessibility in cities, rather than mobility or access to transport, is already underway, especially amongst geographers (e.g. Farrington, 2007; Lucas, 2012). While there is increasing interest in the global South (e.g. Venter et al., 2019), little of this research and work is being done on urban Africa. The data we would need to understand accessibility quantitatively seems impossible to collect in the context of African cities. Some important changes are taking place, for example with mobile phone-based data collection, but we are still far from being able to do the sort of modelling that is being pushed by northern scholars of accessibility and mobility.

However, we know that all over African cities, service delivery models are being developed to respond to how the city is shaped and how movement and mobility systems operate. In other words, there are ways that services are being made more accessible and responsive to the urban form and dynamics of the city, despite the lack of data. Examples include things such as mobile services, for example related to health or education and the diffusion of churches, bars, creches to the neighbourhood scale (SLF, 2017). Many of these challenge conventional approaches to accessibility, and are found in low income/informal/peripheral areas precisely because they are adaptable.

Despite acknowledging the need to work with hybrid, heterogeneous, and decentralised modes of service delivery generally, and mobility in particular, many African governments remain focused on big mobility investments such as light rail. These run the risk of undermining these more knitted service delivery configurations and reducing accessibility by formalising or over-emphasising top-down approaches. This begs the questions: what does Access Oriented Development (AOD) for urban Africa look like? How would AOD be translated into projects and programmes that address the fragmentation and injustices that exist, but do not seek to impose on cities new logics of mobility and access? These are vital questions as we move from a description of what exists in African cities to considering propositions for urban change.

Intervening in mobility governance arrangements

Intervening in the governance-mobility nexus requires understanding the inertia in the existing system. Path dependency and the existing rigidities of urban mobility have three important dimensions: institutional, fiscal, and material. Much of the focus has been on the fiscal and material 'sunk costs' that propel systems forward. However, there are also important institutional rigidities and inertia that can come about when institutions or actors have vested interests in maintaining the roles and responsibilities which they hold. Understanding these power dynamics and incentives is important for understanding the possibilities for change and innovation in the context of shifting complex systems. In general, one-dimensional dualisms of 'strong/weak', 'functional/dysfunctional', or 'modern/primitive' institutions or systems obscure more than they reveal. They limit our understanding not only of the simultaneously functional and contradictory nature of sub-Saharan mobility and governance, but the simultaneously functional and contradictory nature of all mobility and governance. Analysing the internal dynamics and particularities of a given system, on its own terms, is essential not only to understand it but also to make any sort of informed intervention into it.

Part of understanding the possibilities for shifting systems is understanding the hybridity of service delivery systems in African cities – that is, their overlapping and conflicting nature (Jaglin, 2016) and, by extension, the wide range of formal and informal, state and non-state, actors who are involved. In African cities, hybridity exists in all aspects of mobility governance. Understanding the (power) relationships between actors in hybrid material city-systems is essential for considering options for intervention. The heterogeneity/hybridity of delivery and of the actors involved has both challenges and opportunities. In terms of opportunities, these systems may provide more flexible, adaptable, affordable, dynamic, and decentralised provision pathways than the more costly and inflexible networked/regulated alternatives. However, the systems also run the risk of being fragmented, unaccountable, dangerous, and inefficient.

The potential for pan-African knowledge co-production

The question of governance is by its nature interdisciplinary. It requires working across political science, economics, geography, public administration and other disciplines. Adding mobility to this mix requires scholarship in infrastructure, finance, and transport to be brought in. The researchers and practitioners who work on mobility governance are currently scattered across different institutions and departments, often not speaking in the same register. This is especially true in African universities where there are often sharp disciplinary lines between departments, and few interdisciplinary centres. Even more important than having a mix of disciplines is bringing together different types of knowledge. This includes more traditional scholarship, as well as practitioners' knowledge from public officials, NGOs, the private sector, and communities. The co-production of knowledge, drawing from different actors who form part of the governance of mobility, is essential for producing relevant, grounded knowledge on the issue. Co-production can also play an important role in moving from description of complex systems, to actionable propositions for how these systems *could* and *should* be changed (Antonacopoulou, 2009).

One of the reasons it is so important to have both interdisciplinary and co-produced knowledge is to address a common issue faced in the mobility field: that technically sound projects are often never implemented, or they are not implemented in the ways they were designed. This is a very hard reality for technical experts to face, but one inherent to the complexity of urban systems and processes. The reality is that technical expertise does not exist in a vacuum; it exists in a space, which has institutional, fiscal, political, and social dynamics that need to be accounted for. In this sense, it is important to focus research on cases in the global South which enable an exploration of how urban systems and dynamics unfold and operate *in context*.

A key part of developing a stronger and more contextualised research agenda for mobility governance in African cities is to engage Africa-based academics who work on

urban issues at large, and governance in particular. While South Africa-based academics are often at the lead of African projects, there are many institutions spread across the country whose voices can and should feature in these discussions. One of the most extensive new networks of African urban researchers is the African Urban Research Initiative (AURI) (see Appendix 1: Strengthening existing research environments and individuals). AURI works to ensure that Africa-based scholars who are explicitly working on urban issues are brought together to co-produce research. There are several important lessons, specifically relating to capacity building, partner selection, and operations/logistics, that can be learned from the AURI experience.

In terms of capacity building, it is important to develop joint projects across research institutions. These projects must develop the skills and expertise, not only of individual researchers, but also of the institution as a whole. This means having a range of roles and responsibilities, at various levels, and requiring various skills.

Regarding partner selection, it is important to recognise that many important scholars are not located within academic institutions. They are instead based in think-tanks or are independent consultants. It is important to include these scholars, and in any case is often easier to contract with them outside of the complex bureaucracies of the academy. It is possible to ask country partners to build alliances with academic institutions, the state, and activists, and to establish in-country or -city research teams.

Finally, working in African research teams can be a challenge in terms of operations and logistics. There is a plethora of everyday challenges – from exchange rate fluctuations (common in Zimbabwe) to internet blocks (common in Ethiopia) – which all affect projects. Working across African cities thus requires being flexible and adaptive.

Overall, a commitment to pan-African and interdisciplinary knowledge production has incredible potential to strengthen the work on mobility governance in African cities. Not only does it have the potential to support richer empirical research; it can also ensure that this research has relevance for policy and practice.

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APPENDIX 1

Strengthening existing research environments and individuals – lessons from a research network

AURI has been supported since its inception by institutions such as the Rockefeller Foundation, the Cities Alliance, Mistra Urban Futures, and the Ford Foundation. The AURI network is supported by a secretariat based at the ACC at the University of Cape Town. It is guided by a

scientific committee with members from each region of the continent. Table 6 below shows the current members of AURI. Each centre is anchored by core leaders, supported by a wider team. There is still significantly more work to be done to strengthen the platforms in each city. This work involves both building capacity in existing members, by providing resources and opportunities, and bringing in new members.



Table 6. AURI Current Membership.

Institution	City /Country
Sierra Leone Urban Research Centre	Free Town, Sierra Leone
Takween Integrated Community Development	Cairo, Egypt
Centre for Urban Innovations and Research, University of Nairobi	Nairobi, Kenya
Institute for Human Settlement Studies, Ardhi University	Dar es Salaam, Tanzania
Institute for Development Studies, University of Nairobi	Nairobi Kenya
Centre for Settlement Studies, Kwame Nkrumah University of Science and Technology	Kumasi, Ghana
Cairo Lab for Urban Studies, Training and Environmental Research (CLUSTER)	Cairo, Egypt
Laboratoire d'Etudes et de Recherche sur les Dynamiques Sociales et le Développement Local (LASDEL)	Niamey, Niger
Lagos Urban Research Network, University of Lagos	Lagos, Nigeria
Centre for Urban Research and Planning, University of Zambia	Lusaka, Zambia
Environnement et Développement du Tiers Monde (ENDA Tiers-Monde)	Dakar, Senegal
Laboratoire Citoyennetés	Ouagadougou, Burkina Faso
Centre for Policy Analysis, Eduardo Mondlane University	Maputo, Mozambique
Development Workshop Angola	Luanda, Angola
College of African and Oriental Studies, Addis Ababa University	Addis Ababa, Ethiopia
Ethiopian Civil Service University	Addis Ababa, Ethiopia
Centre for Urbanism and Built Environment Studies, Wits University	Johannesburg, South Africa
Urban Research and Advocacy Centre	Lilongwe, Malawi
Department of Architecture and Planning, University of Botswana	Gaborone, Botswana
African Centre for Cities, University of Cape Town	Cape Town, South Africa

