Urban Forum
DOI 10.1007/s12132-011-9116-y

Towards a Political Economy of Transportation Policy and Practice in Nairobi

Jacqueline M. Klopp

> "The streets and infrastructure of most of Africa's cities are being overwhelmed by traffic, leading to rising levels of hazardous air pollution and impacts on the economy. Africa should consider the mistakes made on continents, such as Europe, which indicates that trying to build your way out of the problem by constructing more and more roads can be expensive and deliver only short-term benefits."
>
> *Achim Steiner, United Nations Under Secretary-General and Executive Director of the Nairobi based UN Environment Programme (UNEP)*[1]
>
> "…as much as the pressure for immediate results in respect of our horrible status of our roads is intense and much as emotions are running high against misappropriation of public funds, we must not act on expediency. Everything must be done constitutionally. We must look long and hard at our principles and sort out the enduring values of our society, lest we let our problems, whatever they might be, rob us of our values and aspirations as embodied in the constitution."
>
> *Judge Kasanga Mulwa in a Nairobi Civil Court ruling*[2]

Introduction

A flurry of road building is transforming a number of African cities including Lagos, Addis Ababa and Nairobi. Financed in part through foreign loans, many of these

[1]Cited in *Alternative Energy* October 10th, 2006 at http://www.alternative-energy-news.info/sustainable-public-transport-systems/.

[2]Kasanga, Mulwa, J. in the case of Republic vs. Kenya Roads Board ex parte John Harun Mwau, Nairobi High Court Civil Application NO. 1372 of 2000.

J. M. Klopp (✉)
Center for Sustainable Urban Development, Earth Institute, Columbia University, 475 Riverside Dr., Suite 520, New York, NY 10115, USA
e-mail: jk2002@columbia.edu

Published online: 17 June 2011

projects involve substantial public investments and incur public debt. Yet, the consequences for or impacts on Africa's cities and its residents while large, are unclear; this constitutes a major challenge for researchers, policy makers and urban activists. Transportation policies, projects and practices have enormous impacts on the land use, air quality, income and time spent on traveling, access to services and overall quality of life in cities. In addition, they have long term impacts on the way the cities grow well into the future (Fitzgerald 2010, Boarnet 1998). If done well, transportation policies and projects can play an enormous role in improving health, equity, efficiency and overall quality of 'cityness'. If done poorly, they can intensify struggles over urban land and space, contributing to poverty and the violence and terror of everyday city life (Pieterse 2010). Thus, the current focus on roads to the exclusion of more equitable and efficient public transit in many African cities raises key questions: Does this focus reflect a problematic strategy to "build a way out of problems" as Achim Steiner suggests or is more at play? What are they key values, aspirations, and principles reflected in current urban transportation policies and projects?

Despite the importance of transportation projects and policies in terms of shaping urban land, space, and quality, in general analysts, policy makers, and civil society do not always hold this sector up to the same level of political analysis and monitoring as they do for others like health, education, land or housing. Indeed, critical political, sociological, and historical analysis is more the exception[3] than the rule, in part because theorizing around transportation and hence the kinds of questions asked tend to be overly narrow and shaped primarily by economists and engineers (Khayesi and Amekudzi 2011, Vasconcellos 2001). This paper aims to help fill this gap by conducting a preliminary historically informed political economy, and institutional analysis of some key decisions on transportation policy in the Nairobi metropolitan region. It takes as a key focus on the majority of residents who do not own cars and are reliant on inadequate, often unsafe public transportation, walking, or riding bicycles to reach work and services (Gannon and Liu 1997: 12, Salon and Gulyani 2010, Mitullah et al. 2009). Building a public transportation system that offers more choice for the majority, in addition to making cities healthier, more accessible, and livable for all, is also critically important to challenging historically entrenched inequalities in access to urban space and opportunities. In brief, the transportation sector might be more fully incorporated into struggles to reconstitute citizenship in Africa's cities and entrench "deep democracy" (Appadurai 2002).

The Nairobi metropolitan region constitutes East Africa's largest metropolis, and like other cities on the continent it is rapidly growing and expanding into surrounding towns, agricultural land, rangelands, and wildlife corridors.[4] The Nairobi Metropolitan region has its own unique historical development and dynamics. However, a political economy and institutional analysis of transportation decision making around policies and practices in Nairobi serves to draw out some key issues that arise in different forms and processes in other cities. Specifically, this

[3] For some of the exceptions, see Flyvbjerg (2002), Zittoun (2008), Vasconcellos (2001), Vigar (2001) and Weir et al. (2008).

[4] To see this expansion visually, go to UNEP (2009: 146–147) which shows a number of satellite images over time.

paper examines four main, inter-related features of decision making in Nairobi that impact how transportation projects and policies move forward. These include (1) the large and distorting role of external actors, (2) fragmentation in institutions, policymaking and projects, (3) closed and top-down planning processes, and (4) the absence of mobilization for policies and projects that serve the majority of city residents, especially the poorer segments. Overall, these features have their roots in a broader political context which includes a historical legacy of planning as a form of exclusion, authoritarian politics, and institutional configurations and practices that favor patronage and rent-seeking over progressive public policy. These dynamics and processes favor the interests of exclusive, powerful networks of actors. These actors, in turn, tend to focus on technocratic planning and automobility at the expense of gender, equity, sustainability and poverty concerns as they play themselves out on the streets and transport system in the city.

Currently, the Nairobi region faces a fairly typical plethora of inter-related urban malaises. These include high levels of poverty and social segregation, oil dependency (UNEP 2006, Kebathi 1984),[5] deforestation and encroachment and contamination of agricultural and pastoral lands (Mundia and Aniya 2006), terrifying numbers of traffic accidents (Azetsop 2010, Khayesi 1998, 2003, Nantulya and Muli-Musiime 2001), extremely poor air quality in many locations (Maina et al. 2006, van Vliet and Kinney 2007, Odhiambo et al. 2010, Kinney et al. 2011), serious traffic congestion (Salon and Gulyani 2010, Gonzales et al. 2010), limited transport choices, and little to no planning for pedestrians and cyclists (Khayesi and Amekudzi 2011, Mitullah et al. 2009). Combined, these problems degrade urban life by making daily routines and movement around the city stressful, unhealthy, expensive, and sometimes precarious.

These problematic dynamics are exacerbated by a high rate of urbanization, now approximately at 4% per year. Recent statistics suggest that the city of Nairobi has a resident population of around 3.2 million with a daytime population of 4.2 million (Kenya National Bureau of Statistics 2007). This means that like many African cities, Nairobi has much higher population growth rates than cities in the USA or Europe (Arku 2009, 254).[6] In addition to the rapid growth of people in the city, the number of vehicles on the streets is also growing. Liberalization of car imports, among other factors, has helped lead to an overall growth of automobile use by 30,000 a year in Kenya with much of this growth in Nairobi.[7] Together, this means that unless changes occur in existing policies and practices around transportation and land use, the already serious situation in Kenya's capital is poised to get much worse.

A need exists for political movements and alternative networks to challenge existing patterns of decision making and push for changes in ideas, institutions, policy and practical land use and transportation interventions on the ground. In

[5] As Sclar et al. (2009) argues, cities everywhere must grapple with the fact that "the era of inexpensive energy is over" and the environment is not a "free good."

[6] Arku (2009: 257) notes that in 1975 only eight urban agglomerations had a population between 500,000 and five million, but 40 existed in 2005 and this is expected to reach 58 by 2015. In absolute terms, Africa's urban population will increase from roughly 33 million in 1950 to 295 million in 2000 and as much as 742 million by 2030.

[7] According to statistics used by the Kenya Bus Service, there are 880,000 in Kenya; 550,000 are in Nairobi of which 15,000 are matatus.

Nairobi, concern is, in fact, growing among some policymakers, analysts, journalists, and citizens that current forms of urbanization may ultimately undermine visions of a different future for the city. Kenya's recent Integrated National Transport Policy, for example, raises concerns about the adverse consequences of the current scenario on worker's efficiency and productivity, fuel consumption, education, health and the environment (Republic of Kenya 2010a, 19). The Ministry of Nairobi Metropolitan Development analysis and vision, "Nairobi Metro 2030", also lists a series of 'weaknesses' that begins with "urban poverty, compounded by low human development indices such as doctor to patient ratios, access to housing and services and lack of adequate employment opportunities" (Republic of Kenya 2009, 17). The new National Land Policy also emphasizes the mismanagement around land and the need to address historical problems. It urges the move toward more participatory governance over land. Specifically in urban areas, the policy envisions that the role of the government is to "facilitate the preparation and implementation of local area development plans for all urban and peri-urban areas in the country in a participatory manner" (Republic of Kenya 2010a, 35).

Overall, Nairobi is experiencing a resurgent interest in planning in part as a response to the growing public concern around transportation, land use and poor urban quality.[8] Out of the problematic 2007/2008 contested election emerged a Ministry of Nairobi Metropolitan Development, which aims to "plan, plan, plan".[9] For the first time, the Ministry sponsored a competition for a spatial concept for the metropolitan region. This new concept and framework would replace the lapsed and never implemented 1973 plan for the city and surrounding region (Urban Study Group (Town Planning Section, Nairobi City Council et al. 1973)).[10] This renewed focus on planning and reform of the land management system as a partial remedy to the complex problems of urbanization is surfacing within a broader context of a new constitution.

Adopted in August 2010, Kenya's new constitution increases the rights of citizens and has the potential to democratize state institutions. This historical moment may create a "window of opportunity" for broader public engagement, new urban movements, and improved policies and institutions. The current emphasis and return to spatial and transport planning with a more 'participatory" rhetoric could be leveraged to challenge the deep dynamics of a city that remains severely impacted by its colonial and more recent authoritarian past of slum demolitions, land grabbing and repression of the poor (Hirst 1994; Klopp 2008). Realizing the current possibilities for change will depend on the extent to which the poorer majority along with allies and reformers within the

[8] Interestingly, a Gallup poll of Africans taken in June 2007-October 2008 found widespread dissatisfaction with public transportation systems and roads and highways. Often, these two categories along with health care elicited the highest median dissatisfaction scores in the various countries and regions sampled. See http://www.gallup.com/poll/113872/opinion-briefing-achieving-gains-africa.aspx?version=print

[9] See the presentation "An Overview of Nairobi Metro 2030 Strategy" of Timothy Ndorongo, Director of Metropolitan Planning and Environment, Ministry of Nairobi Metropolitan Development available online at http://www.nairobimetro.go.ke/index.php?option=com_docman&task=cat_view&gid=28&Itemid=78.

[10] As Opiyo (2009: 6) notes of the 1973 plan "the strategy proposed various bus routes which were not implemented and the layout also emphasized on the CBD and industrial area as core employment areas and this in itself encouraged motorization instead of pedestrianization, since apart for the railways staff who were housed near the work stations, people working in other sectors had to use vehicles to get to work. Non-motorized Transport routes were also not provided for."

middle class[11] can mobilize and insert their concerns and needs into the ongoing democratization process. Such mobilizations are necessary to help shift current power dynamics and dominant urban paradigms that favor automobility, which in turn reinforces spatial and social segregation. However, as we shall see, this will be a difficult and protracted struggle; in Nairobi's history the language of planning has been used to mask key problems of spatial segregation and economic inequality (Anyamba 2008; Myers 2003).

The Transport and Land-Use Problems in Historical Perspective

Before engaging in an analysis of contemporary decision making around transportation, it is critical to grapple with the unique, relatively recent and colonial origin of cities like Nairobi, and the way this specific history continues to shape land use and transport dynamics in discernable ways. Key aspects of this history have real impacts on "mental models" of policymakers, power dynamics, and the institutional structure of governance around land and transport decision making, which are not working well, especially for the poor majority who often need to maneuver around and within them (Anyamba 2008; (Ayonga 2008, Unpublished PhD thesis); Klopp 2000, 2008; Musyoka 2004; Linehan 2007).

Land use, transportation and politics have been inextricably intertwined from Nairobi's birth. The transformation of Maasai grazing land ("Enkarie Nairobi"-place of cool waters) that would become East Africa's largest metropolis began in 1896 during British conquest of the area. It started as an outpost for the Kenya-Uganda railroad survey team; in 1899, it became the railway headquarters (White et al. 1948). In the same year, the provincial headquarters were also moved to Nairobi, and by 1905 the area became the capital of the East African British Protectorate. Railway engineers planned the town in 1898 using principles of racial segregation and functionalism (each zone had an exclusive function). Eventually, the Crown took over the town and appointed a town committee, but the town committee followed the principles of the initial Railway Town plan. This forced African residents to maneuver outside the existing planning framework that excluded them; Nairobi's "diverse informalisms," to use Anyamba (2008), emerged rapidly in response to the exclusive and restrictive laws of this colonial urban vision; informal settlements of Africans who provided needed labor in the city emerged alongside segregated neighborhoods for Europeans and Asians (Anyamba 2008; Nangulu-Ayuku 2000).

The impacts of early segregation created land use and transportation patterns which continue to shape contemporary Nairobi and its politics in significant ways. Europeans went to live in low density and high value land in the cooler North Western part of Nairobi. The road network was thought of as subsidiary to the railway link, and roads were built to link large-scale farming areas to the railways. One exception to this pattern was a major trunk road that was created from the central business district to the European areas with a spur to the industrial area (Aligula et al. 2005). Indian employees who came to work on the railway mainly lived in over-crowded conditions to the North East, and Africans lived primarily in peripheral areas on low value, semi-arid land well away from the major trunk road.

[11] There is a growing group of urban planners, architects, and policymakers who are arguing for new urban modalities and visions.

Housing conditions for Africans were poor in part because the colonial government deliberately failed to provide public housing as a means to dissuade (unsuccessfully) Africans from moving into the city at the time (K'Akuma and Olima 2007). It was not until the 1920s that the town of Nairobi took any responsibility for African housing. In the meantime, a system of gross inequality was already set up with freehold land rights granted to Europeans and Asians in the city, while Africans lived in informal unregulated settlements and had no rights to land (Anyamba 2008, 69).

Anyamba, in his insightful historical account of Nairobi's urban processes argues that "Europeans designed their city around personalized transport; first horses, bikes and rickshaws, then the motor car ruled" (2008, 69). By 1928, Nairobi had 5,000 cars making it the city with the highest per capita levels of private automobile ownership in the world; in contrast, the majority of Africans resorted to non-motorized transport either foot or bikes (Hirst 1994: 65; Aligula et al. 2005: 47). The car encased the European in private space away from the Asian and African masses, facilitated living in distant garden neighborhoods, and became a marker of superior status. Just as the road system in the hinterland was designed around colonial economic logics of getting export crops to the rail line, the main road from the Central Business District to the North Western suburbs followed the colonial logics of segregated urbanization.

Transportation for a wider "public" who were subjects of the Crown and not citizens was minimal; some passenger rail service existed. Beginning in 1934, the Overseas Transport Company of London began running a Kenya Bus Service with a fleet of 13 buses operating on 12 routes. After independence, in one of the first "public–private partnerships" in transportation, the City Council of Nairobi (CCN) gave the owners of The Kenya Bus Group Ltd (Kenya Bus) a monopoly franchise to operate a bus service within the central business district in return for a 25% shareholding stake. Even at the time, this service failed to meet demand from the majority, which was growing with the end of colonial pass laws that had attempted to control African mobility and access to land.

Urbanization rates increased significantly at independence, and poorer residents continued to live in lower rent and less serviced areas, which would, as conditions grew worse, increasingly be called slums. These slums also transformed to become not only reservoirs of labor, but informal industrial sites with significant production of their own (King 1996; Macharia 2007). To cater to the large unmet demand for transport, middle class Africans began to run more and more informal mini-bus or "matatu" services in the 1960s, especially from the informal settlements in the city to rural homes (Graeff et al. 2009; wa Mungai and Samper 2006). Matatu owners were able to successfully lobby the then President Kenyatta to legalize the sector, which he did in 1973 through a decree. The Kenya Bus Service still laments that this "allowed the informal sector (matatu) to operate without any form of legal or institutional framework alongside Kenya Bus; a formal franchise operator guided by traffic and labor legislations" (Mukabanah 2008a). Matatus, thus, became the dominant, albeit problematic, mode of public transportation linking settlements, work, urban industrial sites and rural hinterlands.

Continuity and Change in the Contemporary Period

The racial segregation of early Nairobi has evolved into the current social segregation (K'Akuma and Olima 2007). Kenyan upper and middle classes,

including the post-colonial political elite, live in the former European area northwest of the city, in growing suburbs and more recently in gated communities, South African style (Wahome 2011), all of which entail heavy reliance on the automobile,[12] still a marker of status.[13] Meanwhile, despite substantial tracts of under-utilized land in the hands of the Nairobi City Council and the Kenya Railways Corporation, the poorer residents continue to live in the eastern part of the city as well as in informal settlements throughout the city, suffering low levels of services and high levels of air pollution (Republic of Kenya 2005, 9).

As in other places in the world, many city residents of all social classes are also seeking out space in the growing "ruralopolis", complex peri-urban areas that mix rural and urban land uses (Watson 2010; Thuo and Aggrey 2010). One main attraction of the peri-urban areas of Nairobi and its surrounding towns such as Thika and Ruiru is cheaper land made available by rapid subdivision of former coffee plantations and other agricultural land. People are also moving into the southern semi-arid areas in search of cheaper land. Poorer residents are also following the needs of industries and high-end estates in the suburbs, but this urbanization is threatening rangelands and wildlife migration that feeds National parks which, in turn, generate substantial revenues for the tourism industry and the mostly Maasai Southern counties. Movement to such areas in some cases indicates upward mobility from the slums and the investment in land can lead to greater wealth, but this dynamic also contributes to land use and conflict problems in the region, and some of the massive traffic congestion as peri-urban residents return to the city for services and work.

Overall, a pattern persists where the poorer majority continues to live in dilapidated, low density public housing and estates in the city or in "informal" settlements relatively near employment (now including new low income settlements in outlying peri-urban areas like Mlolongo or Githurai). These residents continue to rely on foot travel or privately run public transportation services of low quality, while the richer minority live in leafy suburbs and more recently peri-urban gated communities, thus remaining heavily dependent on automobiles. A recent study based on a survey of 2105 households found, unsurprisingly, that those beneath the poverty line are more likely to walk even if their work is at some distance, typically 10–15 km (This figure was taken from Koster 1999.) from their homes, while middle and working class people take matatus and the wealthier people drive private cars (Aligula et al. 2005). They often meet on congested streets that do not have adequate accommodations for pedestrians, leading to large numbers of accidents with high pedestrian fatalities (Mitullah et al. 2009, Khayesi 1998, 579).[14] Another recent study based on a 2004 slum household survey revealed that just over 65% of working adults in these areas walk to their jobs, 2% use bicycles and 32% use matatus (Salon and Gulyani 2010, 646). It also showed that while 32% work in the settlement where they live, 68% leave the settlement for work and of these only 45% use public transport (Salon and Gulyani 2010, 646). They also found that women and children, who often need to leave the settlement for schooling, are particularly adversely impacted by the lack of travel choices.

[12] However, some developments are touting their "green" status because of their mixed use-residential, recreational, office complexes and stores that would in theory allow for less use of the car.

[13] In Kenyan popular culture, the new political elite were in fact named "wabenzi" after their car of preference—the Mercedes Benz.

[14] Studies suggest that pedestrians form the majority of the fatalities (see Khayesi 2003).

It is worth noting that today, as survey data shows, matatus are the most used form of motorized transport even though their cost relative to income is not cheap (Salon and Aligula 2010, Unpublished Manuscript).[15] They are important not only for passenger service but also for freight (Khayesi 2003; Ailila et al. 2005/6). As Alila et al. note, "Most urban and rural retailers and itinerant traders of agricultural and household goods use matatus to transport their wares to the market" (2005/6, 21). Thus, matatus are an integral part of the urban economy and cater to the needs of the lower middle and under classes in Nairobi but also allow services that cater to the society as a whole.

The lack of adequate regulation[16] of the industry is another key failure of transportation policy that leads to many problems for the poorer segments of society who do not own a car. Once entering the unregulated space of a matatu a citizen, "surrenders personal control" and "violence is never far away" (wa Mungai and Samper 2006, 59). wa Mungai and Samper (2006) note that narratives from matatu passengers of "verbal and physical abuse, theft and hijacking" and women's accounts of "sexual harassment, beatings and rape" are a staple of daily conversations in Nairobi (2006, 51). Matatus are also associated with reckless driving and traffic accidents to the point that the press talks about the "Matatu Menace." Unsurprisingly, recent survey results suggest that Nairobi residents want much more regulation and government involvement in the transportation sector; this includes managing the indispensable yet problematic matatus that are now a fundamental part of Nairobi urban culture (Salon and Gulyani 2010).[17]

In response to this situation, some matatu owners and workers are attempting forms of self-regulation through their own cooperatives and associations. However, complicating this picture is the fact that some owners are senior active and retired police officers and politicians. Some of these, in turn, are involved in cartels and criminal gangs like Mungiki that manage the most profitable routes (Chitere 2004; wa Mungai and Samper 2006). This has helped produce serious violence in Nairobi over these routes which in turn provoke police crackdowns on "Mungiki" leading to extrajudicial killings of many youth, whether they were involved with the gang or not (Anderson 2002; Alston 2009). Unsurprisingly, some of the worst behaved matatus in terms of violating traffic rules are owned by senior police. In this way the failure of transportation policy, in particular the current inability to regulate the most used form of transport in the city (besides walking), contributes to the daily struggles and difficulties of the majority in Nairobi. This situation increases their vulnerability to violence whether through car accidents, harassment, or more serious encounters with criminal elements.

It is hardly surprising given this overall situation that Nairobi's middle class is escaping into private cars while the poor are increasingly taking to walking

[15] One analysis suggests that in 1973 they carried 16% of the passengers in Nairobi compared with the Kenya Bus Service, which carried 84%, but by 1995 they carried approximately 55% (Maunder and

[16] An exception is the 2004 "Michuki rules" named after then transport Minister John Michuki which involved eliminating standing on city buses, mandating that Public Service Vehicles (PSVs) be outfitted with speed governors and safety belts, crews wear uniforms and post identification cards, vehicles get regular check-ups and that a yellow stripe designate a vehicle as public.

[17] Habaryimana and Jack (2009) conducted a field experiment, which encouraged passengers to exert social pressure on their drivers through evocative messages encouraging them to speak up. These messages were placed inside a random sample of over 1,000 long-distance matatus. Their results suggest a significant impact of these simple measures. This is not a substitute for rigorous regulation but an additional measure that mitigates against the sense of helplessness conveyed by wa Mungai and Samper (2006).

(Mukabanah 2008b). These trends may in turn serve to reinforce Kenya's strong car bias and road focus in transportation policy. A growing, powerful minority of car owners is likely to continue to support road construction and upgrading as solutions (which they are not necessarily) to the increasingly alarming congestion and safety concerns. This reinforces other more powerful forces that benefit in many ways from constructing roads. In continuity with colonial times, the transportation and related land use needs of the majority of Nairobi's residents, whether pedestrians, cyclists, hand cart operators, or matatu passengers, are currently neglected.

Criticism of current transportation policy is emerging within some official circles. For example, the 2006 Sessional Paper from the Ministry of Roads and Public Works puts the situation starkly: "Despite its importance, appreciation for Non-Motorized Transport (NMT) is not in evidence, and there is a lack of respect and accommodation for NMT by motorists, and disregard by planners. There is a distortion in the allocation of resources against transportation demands, with a large portion of resources being allocated to motorized transport as compared to NMT" (Republic of Kenya 2006, 14).[18] This point was reiterated in the more recent Integrated National Transport Policy (Republic of Kenya 2010a) and scholarly studies (Aligula et al. 2005; Khayesi, Monheim, and Nebe 2010, Salon and Gulyani 2010).[19] Most strikingly, one of Nairobi's "official" imagined futures as described in "Metro2030" (see below) appears to make little room for the large numbers of pedestrians; in an artist's depiction we see the predominance of highways in the city center without space for non-motorized transport such as bicycles or adequate sidewalks and crossings for Nairobi's multitude of walking citizens.

[18] In 2003, for example, 30% of the public spending went to road transport, more than any other sector (Republic of Kenya 2005: 4).

[19] Even within allocations for motorized transport a disproportionate amount of resources is going to cars and freight trucks (road building) versus rail (Republic of Kenya 2010a). There is much more political analysis to conduct into this dynamic.

A Preliminary Political Economy Analysis of Transport Decision Making

Nairobi's current trajectory appears to have characteristics of being "locked into" negative patterns of land use and transportation that reinforce Nairobi's already problematic patterns of urbanization. At an official level, some recognition of Nairobi's myriad problems is increasingly articulated in policy documents (Republic of Kenya 2006, 2009, 2010a) but historic patterns that reinforce social control and segregation reassert themselves in official visions of Nairobi as a "world class metropolis" depicted in the previous image (Linehan 2007). While compelling arguments exist in terms of cost, equity, poverty alleviation, economic productivity, public health and environmental considerations for policymakers to adopt and implement more innovative policies around sustainable cities (Arku 2009), in practice transport practice appears "stuck" largely at the level of road building and the related concern with road safety. This leads to the question: how are decisions around transportation getting made and what drives them? In this section we will attempt a political economy analysis of the policy networks that drive some of the transport practice in Nairobi and the related impacts and implications.

The first striking aspect of Kenya's transportation sector is the role of external actors. For example, if we look at road construction and rehabilitation 56% of the finance between 2003 and 2008 came from external grants and loans from donors including prominently the World Bank, the African Development Bank, the EU and increasingly the Chinese government (Institute for Economic Affairs 2008).[20] These donors work with the Ministries of Finance, Roads, Transport and Public Works to make decisions on transport planning, and they negotiate on contracts to do planning, feasibility studies, engineering design and road construction.[21] This availability of aid for investing in road infrastructure may facilitate the capital bias toward building roads, and it is perhaps not surprising that a large part of the recent budget expenditures in Kenya and the bulk of transportation expenditures are relegated to roads. In the June 2009 Budget speech, the Finance Minister revealed that the government had allocated 140 billion K. sh [approximately $1.7 billion] for infrastructure spending to cover roads, rail, ports, broadband and energy. In June 2010 this figure rose to Ksh 182 billion [$2.2 billion] of which Ksh 78.6 billion [$1 billion] went into roads, an increase of 34% over the year before. Overall, the recent trend has been towards increasing expenditures on roads.

[20] This is typical for African countries. A recent World Bank study notes that there is "a pronounced capital bias in road spending, with investment accounting for 2/3 of total spending in resource rich, low income countries, especially those without adequate institutional mechanisms for funding road maintenance" (World Bank 2010, 215). Poorer countries spend more on roads than richer countries but do not maintain them, ultimately costing them even more. The same report notes that aid fuels part of the capital bias; aid financing covers 50% of road investment in Senegal and 90% in Rwanda (2010: 215). Note that in continuity with colonial times, road investment in resource rich countries is in part driven by resource extraction which, along with rent-seeking by authorities, may help explain the lack of concern for maintenance in the longer term.

[21] A similar dynamic is at work with the Ministry of Transport on other projects in the works such as proposed Kenya Railway Corporation upgrading of the commuter rail system and the proposed light rail system.

The second striking feature of policy and practice in the transportation sector is the high level of fragmentation in decision making. Besides the typical disjunction between transportation and spatial planning,[22] no single agency or institution deals with all transport matters for the metropolitan region, although proposals exist for a Metropolitan Transportation Authority as recommended in the Integrated National Transport Strategy paper (Republic of Kenya 2005). The current fragmentation and lack of a public focal point works to allow the existing decision-making network a great deal of leeway to operate. It also allows decisions to be made in ways that favor interested parties within networks of politicians and bureaucrats linked to key ministries, while defusing responsibilities.

Some of the current fragmentation, and hence low levels of co-ordination, are linked to Kenya's endemic patronage dynamics (Berman 1998; Kanyinga 1994; Kiai 2010; Klopp 2000, 2008; Mueller 2008; Republic of Kenya 2004, 2010b). It is not a secret that after the post-election violence in 2007/2008, which nearly plunged the country into civil war, enough ministries with their rent-seeking opportunities were created for the key players in the two main political parties. After protracted negotiations, they agreed to share power (Klopp 2009).[23] One of the conditions was that space was made within the coalition for party members from both sides and hence the agreement led to the creation of a record 92 ministerial posts (Korir 2008). As a result of this deal, ministries were split up and this impacted transportation. Authority over roads, for example, lay in the Ministry of Roads, while authority over other modes of transportation is found in the Ministry of Transport and a separate Ministry of Works, as well as the Ministry of Local Government, which oversees local authorities.[24] Local authorities, including the Nairobi City Council, are currently poorly governed and embedded in the patronage networks of more powerful politicians.[25] These authorities oversee local road networks and the related land-use issues and are often hostile to the poor and their use of urban space including roads and roadsides for employment and survival.

Overall, this institutional fragmentation, along with many other weaknesses such as the failure to do proper audits, monitoring, and feasibility studies, enables small numbers of actors to make decisions concerning large sums of money and debt that taxpayers will have to pay in the future. It is unsurprising that the Kenyan Anti-Corruption Commission citing "rampant corruption in the road construction contracts and collusion between contractors and government" reviewed the sub-sector in 2006 (Kenya Anti-Corruption Commission 2007, 9–10, Unpublished report). The Commission's report raised numerous detailed concerns about institutional weaknesses leading to corruption (Kenya Anti-Corruption Commission 2007, Unpublished report), which

[22] See Todes 2011.

[23] This dynamic will change under the new constitution, which limits the number of cabinet posts/ministries to 22.

[24] The Motor Vehicle Inspection Unit falls under the Public Works Ministry and the Transport Licensing Board is in the Transport Ministry. They are both sources of rents for the Ministries.

[25] Actors in the Nairobi City Council have linkages to the Ministry of Local Government (which were evident in a recent land scandal around the acquisition of cemetery land (Republic of Kenya 2010b) and acrimonious relations to the Ministry of Nairobi Metropolitan Development. This helps explain the parallel transport and land-use processes.

in turn, feeds patronage dynamics. It also raised concerns about the fragmentation in the transportation sub-sector (2007, 8–9).

Fragmentation, along with the failure to do proper audits, helps produce a lack of accountability in terms of the impacts of transportation projects on local people.[26] For example, one of the current highway mega-projects in Kenya[27]—the Thika Highway Improvement Project—failed to alter its design to accommodate or plan for the traders of Githurai market, one of the largest regional markets in the Nairobi area. This is the case even though the designs are being constantly updated (although not made easily available for the public). The road construction went ahead, destroying the market without a proper plan to relocate the businesses. Women traders, who had relied on the urban space for survival, continued to try and sell wares alongside the roadside; cars eventually hit and killed some of them, starkly revealing how the uneven struggle for urban space is intertwined with transportation decisions made at a distant bureaucratic level.

Further, such projects create different distributions of impacts, destroying economic opportunities for some while providing new opportunities for others, but this tends not to be a matter of public policy analysis and discussion, although elected representatives are left dealing with complaints. For example, in parliament the local MP for the Githurai area asked whether the Minister of Roads was, "aware that the expansion of the Nairobi-Thika road will encroach on the entire Githurai market, thus putting at stake the livelihoods of more than 3,000 small-scale business people with attendant costs that will impact on their families?" The Assistant Minister responded that his "Ministry is not responsible for securing alternative land for use by the traders" (Hansard Tuesday 24th November 2009). This is emblematic of the way that the interests and concerns of small businesses and the livelihoods of the many poor they employ and the farmers they support are secondary objectives to roads that serve other interests. The current fragmentation and disjunction between land use, economic and social development and transport planning and policy facilitates this abdication of responsibilities, especially to the poorest citizens.[28]

The strong presence of competing international interests has contributed to and reinforced the propensity towards institutional fragmentation in approaches to transportation and even road construction. Competition among external actors, enhanced by the more recent involvement of the state owned China Road and Bridge Company[29] and others, gives different actors in the Kenyan government some leverage over who it engages with and contracts for road construction and other infrastructure. Actors in different ministries have an interest in negotiating different contracts and capturing the various private benefits in the form of kickbacks or sub-

[26] Another problem is linked to the engineering methodology of road construction which fails to be context sensitive (Beukes et al. 2011).

[27] One estimate suggests that it costs K.sh 27 billion ($333 million) but this is likely to be an under-estimate.

[28] Interestingly when expansion of Mombasa Road in the South threatened powerful businesses with demolition, including the Standard Media Group, the Ministry of Roads appointed a task force and accepted the principle that alternative designs were possible for the road. See "No demolitions on Mombasa Road after all" Wanambisi, Laban. Capital News April 4, 2011. Available at http://www.capitalfm.co.ke/news/Kenyanews/No-demolitions-on-Mombasa-Road-after-all.html

[29] They are the contractor for the Nairobi Eastern and Northern Bypass, which is 85% funded by the Exim Bank of China.

contracts for a few favored local companies. This contributes to the exclusion of broader land use, social and economic considerations that might go into context sensitive planning and construction (Beukes et al. 2011). It also enables the highly fragmented implementation of projects as different actors finance and others get contracts for different segments of the network in the absence of a broader vision and plan. Sometimes this fragmentation occurs even for the same road as is the case for Thika Highway.[30]

This dynamic is made even more complex by the fact that competing foreign interests aim to benefit home companies in projects including those to build or upgrade Kenya's roads. They are also interested in broader economic objectives such as facilitating exports of coffee, tea and other products (Fiott 2010). It is possible that some interest in roads in Africa is linked not only to oil and minerals, but to the growing interest in the last arable agricultural land on the continent, which will become increasingly valued with increased global food demand. This can also mean that roads are not being built with accessibility to services for local citizens in mind or with strategies to improve local employment and businesses. Indeed, even within the construction of roads itself, Kenyan companies are marginalized, and some are complaining that, "the government is raising the demands on firms during the tendering process, for instance, requiring experience on big projects."[31] It is hard for local companies to compete with foreign ones, including in particular the increasingly dominant Chinese construction companies, that receive support in the form of credit and lobbying from their government (Chen et al. 2007; Gill 2010).

The third important aspect of the way transportation decisions get made is that while the government remains ultimately responsible for overall transportation planning and vision, which might allow for some coherence in policy, projects and process, even these functions are often contracted out to foreign agencies and firms.[32] Thus, the Japanese International Cooperation Agency (JICA) was contracted to do a recent transport master plan for Nairobi (JICA Japan International Cooperation Agency 2006) and the Delhi-based firm General Engineering Services is currently working on a spatial concept for metropolitan Nairobi and a new master transportation plan.[33] This "planning" is largely conducted by engineers and technical specialists working with a few consulting firms. These firms are often those that are directly bidding for the contracts for feasibility studies and design work for actual construction of infrastructure. While this provides for some coordination, it obviously creates problems of public

[30] Thika Highway is being built in three segments involving different financing and contractors.

[31] *Construction Kenya.com* November 25, 2010 available at http://www.constructionkenya.com/1756/chinese-firms-beat-kenyan-ones-on-projects/. The same article suggests that Chinese companies have "scooped more than two thirds of the lucrative tenders for the fiscal year ending in June in which $973.1 million was budgeted for spending on roads". It does not, however, give the source.

[32] Historically, there has been a long history of foreign consultants making plans for Nairobi. These include the very first Railway plan done by British engineers, to the 1948 plan by South African consultants to the UNEP sponsored 1973 plan (which however had more local involvement) to the JICA transport plan and the more recent plan by Indian engineers. Kenyans also came up with a transport and land-use vision of the "Nairobi We Want" through consultation and discussion (see Karuga 1993). However, these local ideas are rarely discussed in planning circles.

[33] The spatial plan is available online at http://www.nairobimetro.go.ke/.

accountability, openness to new ideas and attention to the interests and concerns of poorer residents. It also works against institutionalizing and improving better and more accountable and inclusive government planning structures. This is because most of this work is done in the private sector and does not appear to go through a process of local expert and public review. Further, while rhetoric of "public consultations" is found in the terms of reference for consultants, and their subsequent reports, neither these consultants nor the ministries that contract them, are mandated by law to conduct public hearings. Consequently, the public, including in particular the poorer majority, largely does not know about how transportation planning takes place.

The problems of fragmentation and lack of coherence are recognized by many actors including international development agencies and multi-laterals who are heavily involved in the transportation sector. A network of these key actors, ministries and other invited stakeholders have regular meetings to discuss the status of various projects including funding for some of the institutional reforms which are taking place.[34] Some of the minutes of these meetings are available online to those who search.[35] The actors in these meetings are in effect some of the key players (the consulting firms do not show up at these meetings) in an entrenched network around transportation decision making. From a "Roads Sector Donor Group" chaired by the World Bank and African Development Bank, by March 2009, the group transformed into the "Transport Sector Working Group" chaired by the Permanent Secretary of the Ministry of Roads. The list of participants reflects the heavy presence of engineers and civil servants in the key Ministries involved: Roads, Nairobi Metropolitan Development (and to a lesser extent Transport and Local Government) and donors including the World Bank, African Development Bank, JICA and EU with increasing representation from the Chinese embassy in Nairobi, the largest Chinese embassy in Africa.[36]

At the same time, the Nairobi-based United Nations Environment Programme (UNEP) and UN-HABITAT are promoting alternative thinking around sustainable transport. They are drawing on much smaller pools of funds from the Global Environment Facility (GEF) to work with the City of Nairobi to deliver "a Bus Rapid Transit and Non-Motorized Transit design and feasibility study for Nairobi"[37] and to strengthen the network advocating for strong public transportation systems and transportation alternatives. In the meantime consulting firms linked to the Ministry of Nairobi Metropolitan Development are already preparing for a bus rapid transit system and light rail system in their metropolitan transportation plan.[38] It is thus clear that competing and complex donor actions contribute to the fragmentation

[34] One key set of reforms is in the Road Act 2007 which is attempting to create viable and delocalized road funds for maintenance

[35] http://aideffectivenesskenya.org/index.php?option=com_docman&task=cat_view&gid=967&Itemid=535

[36] These actors were singled out in the June 2009 Budget speech for their contributions to the road and energy sector.

[37] See http://www.evd.nl/zoeken/showbouwsteen.asp?bstnum=266935&loction=&highlight= and for details including the endorsement letter signed by the Nairobi City Council see http://gefonline.org/projectDetailsSQL.cfm?projID=3461.

[38] "Proposed Plans for a Mass Transit System for Metropolitan Nairobi" presentation to the Ministry of Metropolitan Development by APEC and GES consulting firms August 26, 2010.

within the Kenyan government, which lead the donors in turn to complain about the lack of a lead agency in the urban transport sector![39]

As we have seen, actors with strong interests and focus on rapid road construction and large-scale infrastructure development are at the core of decision making about transportation policy, and it is not accidental that the Permanent Secretary in the Ministry of Roads chairs the working group. The Ministry of Lands including the Directorate of Physical Planning and the City of Nairobi are conspicuously missing even though major ongoing highway projects have enormous and in some cases potential adverse impacts on the city and land use in the region. Also, generally missing except for the Automobile Association of Kenya[40] and the occasional group interested in road safety are any members representing residents, especially poor residents who rely heavily on non-motorized transport. Representatives from the matatu and bus industry are also absent. The only stakeholder remotely linked to environmental concerns is the Kenya Wildlife Service but its inclusion is largely because it is responsible for roads in conservation areas and parks.

The fourth striking feature of the transportation sector in Nairobi, then, is the absence of actors that might counter-balance the current problematic and exclusive tendencies in decision making. These include stakeholders in cities that have often pushed for consideration of the urban poor who tend to be cyclists and pedestrians.[41] The inclusion of these key groups such as the slum-dwellers federation[42] might raise alternative priorities, projects and designs, including a stronger focus on non-motorized transport and bus rapid transit, more in line with more equitable and sustainable practices. Even those directly impacted such as the University of Nairobi, which is being severed from the city core by the current highway construction and faces serious hazards for its students, is missing from transportation decisions. This is despite its clout linked to the land it owns and the stature and connections of its faculty. Finally, the City of Nairobi, which should be the key advocate for the city, is instead following the logics of seeking its own benefits by engaging in parallel processes with other donors and actors, even as highway construction is carving out large swaths of the city.

Overall, very little civil society exists with a focus on land use/transportation issues (Khayesi et al. 2010),[43] and the level of public dialog and media reporting on sustainable urban transport and land use is low. While monitoring is increasing in health and education spending, the massive amounts of resources going into infrastructure remains unmonitored and relatively little debate exists around the many ongoing projects. Although more recently, the Kenya Alliance of Residents Associations has been raising questions and conducting protests around the issue of

[39] See Minutes of Donor (Roads & Transport) Sector Working Group Meeting, Held on 2nd June 2010.
[40] For the history see http://www.aakenya.co.ke/history.htm
[41] See the award winning video by underprivileged Nairobi youth promoting bicycles at http://www.huffingtonpost.com/2011/02/21/wafalme-me-and-my-bike_n_824158.html.
[42] Understandably, a key focus of such groups is on housing, but of course housing and transportation are related. Where housing is located entails higher or lower transportation costs and the existence of viable choices in transportation can also reduce overall household costs and improve the quality of life, including health.
[43] The Chairman of the Kenya Alliance of Residents Association, Stephen Mutoro, also raised this as a key weakness. Interview 2010.

which roads are getting priority and why,[44] the majority of citizens seem to view roads and planning as the purview of technical experts and not about their rights to a livable and equitable city. Further, in Kenya after years of seeing roads deteriorate, there is understandable excitement that roads are now being built and improved, and this along with efforts to rein in rogue matatu behavior and reduce traffic accidents tends to dominate public discussion about transportation. This means creative mechanisms to maximize choice in transportation with investments in smart land use and clean alternatives including non-motorized transport that could enhance equity, improve public health,[45] and compliment thoughtful road upgrading and expansion are given short shrift. As a growing number of Kenyan critics suggest, an alternative vision might put some focus on non-motorized transport, the regulation and systematic improvement of the matatu system and bus system, and the creation of a broad network of transportation linkages that serve and create synergies between small farmers, local industry and urban dwellers.

Final Reflections and Avenues for Transformation

If we think of some aspects of public transportation systems including roads[46] as a kind of common pool resource then the current decision-making network and process in Nairobi goes against "optimal design principles" (Ostrom 2009) that would see users (including pedestrians, cyclists, matatu passengers) playing a major role in monitoring the management of this key resource. Instead, as we have seen, the network of key decision-making actors in the transportation sector is small and exclusive and works in an environment where the institutions for inclusive, transparent and integrated metropolitan land use and transport planning do not exist, and the problems involved are highly complex. The current political economy of transportation, as it appears to function in Kenya's large and economically critical metropolis and surrounding regions, appears prone to the implementation of large, often disconnected projects with their possibilities of kickbacks, contracts and land speculation opportunities for the elite.[47] This is in part made possible by institutional flaws including the lack of an open public planning process with legally mandated hearings involving the city, its residents including the poor majority and other key actors such as the Ministries of Lands and Environment. Instead, decisions tend to be made based on a form of "planning" that is a very technical and elite driven process

[44] See Anthony Kitimo. "Exclusion of key roads in tender advert faulted" *Property Kenya* available at http://www.propertykenya.com/news/1384260-exclusion-of-key-roads-in-tender-advert-faulted and Alphonce Shiundu "Minister Flies to Voi Over Road Protest" *Daily Nation* 10 November 2010 available at http://allafrica.com/stories/201011110701.html.

[45] We do not have good epidemiological studies of the health impacts of the poor air quality in African cities like Nairobi but there is a deep concern about the possible link to many respiratory illnesses and cancers.

[46] A common pool resource is one that is difficult to exclude people from using but has high levels of subtractability (if one person uses it, it tends take away an opportunity for another to use it). In crowded conditions roads and public transit take on some characteristics of common pool resources not purely public resources such as peace and security where there is low subtractablity.

[47] In contrast, reforms in the road sector that accountably decentralize funds that enable localities to work with planning authorities and also hire youth to maintain roads are promising; such reforms could create more access to services, improve opportunities and give employment to youth.

that supports the vision of social and spatial segregation and deepens economic inequities (Linehan 2007). These flaws in the legal frameworks around transportation planning and policy along with the absence of civil society attention in this sector mean that public hearings and consultation that would create spaces for resistance to the current dynamic do not happen. In effect, the majority of Nairobi's citizens, especially the poor, often find out about transportation projects when the bulldozers move in.

Yet spaces to mobilize and challenge existing systems of decision-making and planning exist especially within the current process of constitutional reform. Alternative ideas and networks of actors are emerging and within the current institutional flux could find ways to influence-and democratize-new institutions like the future Metropolitan Transport Authority and county governments which could be encouraged to engage in alternative and more integrated land use, transport, socioeconomic and environmental planning (Republic of Kenya 2011, 145). Key steps towards challenging the focus on roads within current transport policy will be to increase public awareness via the press, bring civil society into a fledgling alternative network and support new research and university actors in a public policy dialog that presents land use and transportation alternatives to the status quo. Such steps are being advocated by growing numbers of African scholars like Arku (2009) and Khayesi (2003) and global civil society organizations like the Institute for Transportation and Development Policy.[48] Local universities, think tanks and research and teaching might also play a role in shifting the urban transport agenda over the longer term. The university is where the majority of the next generation of policymakers, civil servants, engineers, community activists, urban professionals and business leaders come from. Recent efforts to create an inter-disciplinary African Center of Excellence for Studies in Public and Non-Motorized Transport, which operates in Nairobi, Cape Town and Dar es Salaam,[49] and the African Center for Cities in Cape Town[50] are critical in this regard.[51] This support of local centers of research which have networks reaching into government, in conjunction with the building of alternative movements and public awareness, is a potentially powerful way to transmit new norms and ideas that challenge problematic ideologies of "planning" and exclusive political dynamics, not only across institutions, but across generations, as students participate and learn from this new research agenda.[52] Finally, we must move towards a deeper analysis of the political economy of transportation, and find better methodologies to disaggregate and analyze the impacts of various transportation policies and projects. This should be part and parcel of the ongoing historical struggle for a "deep democracy" in Africa's cities where policy embraces and addresses the needs and rights of the majority including poorer citizens. These needs and rights when expressed in physical urban form

[48] See http://www.itdp.org/
[49] See http://www.acet-uct.org/
[50] See http://africancentreforcities.net/
[51] The Volvo Research and Educational Foundations and Rockefeller Foundation, respectively, are supporting these initiatives.
[52] Further, more engaged research that links universities and students to work in and for cities has the virtue of circulating knowledge back into the policy realm while building networks for change (Klopp et al. 2011).

through improved transportation and land-use policies may also help produce better cities for all.

Acknowledgements The Rockefeller Foundation and the Volvo Research and Educational Foundations generously supported this research. I wish to thank Elizabeth Marcello and Geoffrey Charles for their insight and work on this paper. Elliott Sclar, Meleckidzedeck Khayesi, Nicole Volavka-Close, Jennifer Schumacher-Kocik as well as Sakiko Fakuda-Parr, Michael Cohen, Bob Buckley and the entire Development Thought and Policy Seminar at The New School provided helpful comments and insights into this work.

References

Ailila, P., Khayesi, M., Odhiambo, W., & POUM Over Pederson (2005/6). Development of African freight transport-the case of Kenya. Danish Institute for International Studies Working Paper.

Aligula, E. M., Abiero-Gairy, Z., Mutua, J., Owegi, F., Osengo, C., & Olela, R. (2005). Urban public transport patterns in Kenya: a case study of Nairobi city. Special Report 7, Kenya Institute for Public Policy Research and Analysis (KIPPRA), Bishops Garden Towers, Bishops Road PO Box 56445, Nairobi.

Alston, P. (2009). Report of the special rapporteur on extrajudicial, summary or arbitrary executions, mission to Kenya. New York: UN Human Rights Council. Available at http://www.extrajudicialexecutions.org/application/media/Kenya%20Mission%202009%20%28A_HRC_11_2_Add.6%29.pdf.

Anderson, D. (2002). Vigilantes, violence and the politics of public order in Kenya. *African Affairs, 101*, 531–555.

Anyamba, T. (2008). *"Diverse informalities" spatial transformations in Nairobi: A study of Nairobi's urban process*. Saarbrüken: VDM Verlag.

Appadurai, A. (2002). Deep democracy: urban governmentality and the horizon of politics. *Public Culture, 14*(1), 21–47.

Arku, G. (2009). Rapidly growing African cities need to adopt smart growth policies to solve urban development concerns. *Urban Forum, 20*, 253–270.

Azetsop, J. (2010). Social justice approach to road safety in Kenya: addressing the uneven distribution of road traffic injuries and deaths across population groups. *Public Health Ethics*, 1–13.

Berman, B. (1998). Ethnicity, patronage and the African state: the politics of uncivil nationalism. *African Affairs, 97*(338), 305–341.

Beukes, E. A., Vanderschuren, M. J. W. A., & Zuidgeestet, M. H. P. (2011). Context sensitive multimodal road planning: a case study in Cape Town, South Africa. *Journal of Transport Geography, 19*(3), 452–460.

Boarnet, M. (1998). Spillovers and the locational effects of public infrastructure. *Journal of Regional Science 38*(3), 381–400.

Chen, C., Chui, P.-C., Orr, R., & Goldstein, A. (2007). An empirical analysis of Chinese construction firms' entry into Africa' the CRIOMCM2007 international symposium on advancement of construction management and real estate, Sydney, Australia, 8–13 August.

Chitere, P. (2004). Matatu industry in Kenya: A study of the performance of its owners, workers and their associations and potential for improvement, IPAR DP No. 55.

Fiott, D. (2010). The EU and China in Africa: The case of Kenya' Madariaga Paper, vol. 3, No. 5, (July).

Fitzgerald, J. (2010). *Emerald cities: Urban sustainability and economic development*. Oxford: Oxford University Press.

Flyvbjerg, B. (2002). Bringing power to planning research: one researcher's praxis story. *Journal of Planning Education and Research, 21*(4), 353–366.

Gannon, C., & Liu, Z. (1997). Poverty and transport. Discussion Paper. Washington: World Bank.

Gill, P. (2010). *Famine and foreigners: Ethiopia since live aid*. Oxford: Oxford University Press.

Gonzales, E., Chavis, C., Li, Y., & Daganzo, C. (2010). Multimodal transport in Nairobi, Kenya: Insights and recommendations with a macroscopic evidence-based model. Working paper. UC Berkeley Center for Future Urban Transport. Available at: http://www.its.berkeley.edu/publications/UCB/2009/VWP/UCB-ITS-VWP-2009-5.pdf.

Graeff, J. The organization, issues and the future role of the Matatu industry in Nairobi Kenya. Fourth international conference on the future of urban transport: access and mobility for the cities of tomorrow, April 19–21 2009, Gotenborg, Sweden. Available at: http://www.vref.se/.

Habaryimana, J. & Jack, W. (2009). Heckle and Chide: Results of a randomized road safety intervention in Kenya. Working Paper 169 Center for Global Development.

Hirst, T. (1994). *The struggle for Nairobi*. Nairobi: Mazingira Institute.

Institute for Economic Affairs. (2008). Infrastructure-road and rail sector: Budget performance 2003–08 and emerging policy issues. The Budget Focus Issue No 22, May.

JICA (Japan International Cooperation Agency). (2006). *The study on master plan for urban transport in the Nairobi Metropolitan area in the Republic of Kenya-Final Report*. Tokyo: Katahira & Engineers International.

K'Akuma, O. A., & Olima, W. H. A. (2007). The dynamics and implications of residential segregation in Nairobi. *Habitat International, 31*(1), 87–99.

Kanyinga, K. (1994). Ethnicity, patronage and class in a local arena: "High" and "low" politics in Kiambu, Kenya, 1982-92'. In P. Gibbon (Ed.), *The new local level politics in East Africa*. Research Report No. 95. Uppsala: Nordic African Institute, 1994.

Karuga, J. (Ed.) (1993). *Action towards a better Nairobi Friederich Naumann Foundation*. Nairobi: Friedrich Naumann Foundation.

Kebathi, S. (1984). Nairobi: running on empty. *Cities, 1*, 362–365.

Kenya National Bureau of Statistics. (2007). Ministry of planning. Republic of Kenya Economic Survey 2007.

Khayesi, M. (1998). The need for an integrated road safety programme for the city of Nairobi, Kenya. In P. Freeman & C. Janet (Eds.), *Urban transport policy: A sustainable development tool* (pp. 579–582). Rotterdam: A A Balkema.

Khayesi, M. (2003). Liveable streets for pedestrians in Nairobi: The challenge of road traffic accidents. In J. Whitelegg & G. Haq (Eds.), *The Earthscan reader on world transport policy and practice* (pp. 35–41). London: Earthscan Publications Ltd.

Khayesi, M., & Amekudzi, A. (2011). Kingdon's multiple streams model and automobile dependence reversal path: the case of Curitiba, Brazil, 1880–2000. *Journal of Transport Geography*, November (in press).

Khayesi, M., Monheim, H., & Nebe, J. M. (2010). Negotiating "streets for all" in urban transport planning: the case for pedestrians, cyclists and street vendors in Nairobi, Kenya". *Antipode, 42*(1), 103–126.

Kiai, M. (2010). Puncturing political patronage in Kenya. Available at: http://blog.soros.org/2010/11/puncturing-political-patronage-in-kenya/. Accessed 22 November 2010.

King, K. (1996). *Jua Kali Kenya: Change & development in an informal economy*. London: James Currey Press.

Kinney, P. L., Gichuru, M. G., Volavka-Close, N., Ngo, N., Ndiba, P. K., Law, A., et al. (2011). Traffic impacts on PM 2.5 air quality in Nairobi, Kenya. *Environmental Science & Policy, 14*(4), 369–378.

Klopp, J. (2000). Pilfering the public: the problem of land grabbing in contemporary Kenya. *Africa Today, 47*(1), 7–26.

Klopp, J. (2008). Remembering the Muoroto uprising: slum demolitions, land and democratization in Kenya. *African Studies, 67*(3), 295–314.

Klopp, J. (2009). Kenya's unfinished agendas. *Journal of International Affairs, 62*(2), 143–158.

Klopp, J., Ngau, P., & Sclar. E. (2011). University/City partnerships: Creating policy networks or urban transformation in Nairobi, *Metropolitan Universities*, in press.

Korir. (2008). "Kenya; 93 ministers in a developing country is crazy" African Press International April 13 Available at http://africanpress.wordpress.com/2008/04/13/here-is-the-kenya-government-kibaki-satisies-the-kenyan-people/.

Koster, J. (1999). *Performance assessment of the Nairobi public transport system*. Washington DC: World Bank.

Linehan, D. (2007). Re-ordering the urban archipelago: Kenya vision 2030, street trade and the battle for Nairobi City Center. *Aurora Geography Journal, 21*, 22–37.

Macharia, K. (2007). Tensions created by the formal and informal use of urban space: the case of Nairobi, Kenya. *Journal of Third World Studies, 24*(2), 145–162.

Maina, D. M., Gatari M. J., Bundi, P., & Muturi, H. (2006). Impact of road transport on air quality in Kenya; roadside survey in the cities of Mombasa and Nairobi. Proceedings of International Aerosol Conference (IAC2006), St Paul Minnesota, USA, 10–15 September 2006.

Mitullah, W., & Makajuma, G. Analysis of non-motorised travel conditions of the Jogoo Road corridor in Nairobi. Fourth International Conference on the Future of Urban Transport: Access and Mobility for the Cities of Tomorrow, April 19–21 2009, Gotenborg, Sweden. Available at: http://www.vref.se/.

Mueller, S. (2008). The political economy of Kenya's crisis. *Journal of Eastern African Studies, 2*(2), 185–210.

Mukabanah, E. (2008a). Kenya bus services Ltd-Why it collapsed. Unpublished Nairobi Mass Transit Concept Paper. Available at http://www.kenyabus.net/uploads/downloads/KBS_Collapse.pdf.

Mukabanah, E. (2008b). "A Metropolitan transit system" presentation to the Ministry of Nairobi Metropolitan Development April 27, 2008. Available at http://www.kenyabus.net/uploads/downloads/Public_Transport_Presentation_-_Nairobi_Metropolitan.pdf.

Mundia, C. N., & Aniya, M. (2006). Dynamics of land use/cover changes and degradation of Nairobi City, Kenya. *Land Degradation and Development, 17*(1), 97–108.

Musyoka, R. (2004). Informal land delivery processes in African cities: informal land delivery processes and access to land for the poor in Eldoret, Kenya University of Birmingham.

Myers, G. (2003). Designing power: forms and purposes of colonial model neighborhoods in British Africa. *Habitat International, 27*, 193–204.

Nangulu-Ayuku, A. (2000). Politics, urban planning and population settlement: Nairobi, 1912-1916. *Journal of Third World Studies, 17*, 2.

Nantulya, V., & Muli-Musiime, F. (2001). Kenya: Uncovering the social determinants of road traffic accidents. In T. Evans, et al. (Eds.), *Challenging inequities in health: From ethics to action*. Oxford: Oxford University Press.

Odhiambo, G. O., Kinyua, A. M., Gatebe, C. K., & Awange, J. (2010). Motor vehicles air pollution in Nairobi, Kenya. *Research Journal of Environmental and Earth Sciences, 2*(4), 178–187.

Opiyo, R. (2009). Metropolitan planning and climate change in Nairobi: How much room to manouvre? Paper presented to the Fifth Urban Research Symposium.

Ostrom. (2009). Beyond markets and states: polycentric governance of complex economic systems. Nobel Prize lecture December 8, 2009. Available at http://nobelprize.org/nobel_prizes/economics/laureates/2009/ostrom-lecture.html.

Pieterse, E. (2010). Cityness and African urban development. *Urban Forum, 21*, 205–219.

Republic of Kenya. (2004). *Report on the commission of inquiry into the illegal/irregular allocation of public land*. Nairobi: Government Printer.

Republic of Kenya. (2005). Integrated national transport strategy.

Republic of Kenya. (2006). *Sessional paper on the development and management of the roads sub-sector for sustainable economic growth.* Ministry or Roads and Public Works.

Republic of Kenya. (2009). *Sessional paper no 3 on national land policy*. Nairobi: Government Printers.

Republic of Kenya. (2010a). *Sessional paper on integrated national transport policy*. Nairobi: Government Printers.

Republic of Kenya. (2010b). *Report on the procurement of cemetery land by the city council of Nairobi*. Report by the Kenya National Assembly 10th parliament, 3rd session, The Departmental Committee on Local Authorities, January.

Republic of Kenya. (2011). *Interim report of the task force on devolved government*. A report on the implementation of devolved government of Kenya April 20 2011.

Salon, D., & Gulyani, S. (2010). Mobility, poverty and gender: travel "Choices" of slum residents *transport reviews*. *A Transnational Transdisciplinary Journal, 30*(5), 1464–5327.

Sclar, E. Engaging complexity: A prologue to creating effective urban transport and land-use planning for metropolitan Nairobi. Fourth International Conference on the Future of Urban Transport: Access and Mobility for the Cities of Tomorrow, April 19–21 2009, Gotenborg, Sweden. Available at: http://www.vref.se/.

Thuo, A. D. M. (2010). Community and social responses to land-use transformations in the Nairobi rural-urban fringe, Kenya. Field Actions Science Report.

Todes, A. (2011). Reinventing planning: critical reflections. *Urban Forum, 22*(2), 115–133.

UNEP. (2006). *Kenya: Integrated assessment of the energy policy with focus on the transport and household sectors*. Nairobi: UNEP.

UNEP. (2009). *Kenya: Atlas of our changing environment*. Nairobi: United Nations Environment Programme.

Urban Study Group [Town Planning Section, Nairobi City Council; United Nations (the report was not cleared with the UN and doesn't necessarily reflect their views); Colin Buchanan and Partners]. (1973). *Nairobi Metropolitan growth strategy*. Nairobi: Nairobi City Council.

Vasconcellos, E. A. (2001). *Urban transport, environment, and equity: The case for developing countries*. London: Earthscan Publications.

van Vliet, E. D. S., & Kinney, P. L. (2007). Impacts of roadway emissions on urban particulate matter concentrations in sub-Saharan Africa: new evidence from Nairobi, Kenya. *Environmental Research Letters, 2*(4).

Vigar, G. (2001). Reappraising UK transport policy 1950–99: the myth of 'mono-modality' and the nature of 'paradigm shifts'. *Planning Perspectives, 16*, 269–291.

wa Mungai, M., & Samper, D. (2006). "No mercy, no remorse": personal experience narratives about public passenger transportation in Nairobi, Kenya. *Africa Today, 52*(3), 51–81.

Wahome, M. (2011). Rise of 'gated' society in urban Kenyan estates. *Architecture Kenya*.

Watson, V. (2010). 'Seeing from the South: refocusing urban planning on the globe's central urban issues. Urban Studies.

Weir, Rongerude, & Ansell. (2008). *Making participation matter*. Berkeley: University of California Transportation Center.

White, L. W. T., Silberman, L., & Anderson, P. R. (1948). *Nairobi: Master plan for a colonial capital*. London: His Majesty's Stationery.

World Bank. (2010). *Africa's infrastructure: A time for transformation*. Washington: World Bank.

Zittoun, P. (2008). One policy for two problems: the controversy surrounding the Parisian tramway. *Planning Theory & Practice, 9*(4), 459–474.