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Livelihoods, land-use &
public transport:
Opportunities for poverty
reduction and risks of
splintering urbanism in
Nairobi's Spatial Plans

Colin Hagans

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Graphics and layout: Giorgio Talocci, Camila Cociña and Luz Navarro.



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Livelihoods, land-use & public transport: Opportunities for poverty reduction and risks of splintering urbanism in Nairobi's Spatial Plans

Colin Hagans

chagans@gmail.com

October 2013

ISSN 1474-3280

Abstract. Over a decade after *Nairobi's 1973 – 2000 Metropolitan Growth Strategy* lapsed, the city is undergoing a planning renaissance, a significant occurrence given continued high levels of poverty within its metropolitan borders, coupled with the city's struggle to remain economically competitive. With the government's recognition that inadequate transport is hindering Nairobi's development, an expanded public transport system has emerged at the core of the city's new spatial plans.

The applied linkages between public transport planning and poverty reduction efforts in much of the world, however, are weak. In Nairobi, city planners may therefore miss an opportunity to contribute toward government poverty reduction objectives, and could even worsen socio-economic and spatial inequality in the city, a process that Graham and Marvin (2001) term 'splintering urbanism'. The lack of a comprehensive framework for identifying urban poor transport needs perpetuates the above risks, and also aids in the often dominant positioning of public transport

systems as a means to promote urban economic efficiency and project modernity—particularly as cities in the Global South increasingly compete for international investments.

Using Nairobi as a case study, this paper develops and tests a framework to address the aforementioned gap between public transport planning and poverty reduction efforts. In doing so, the concepts of equity and accessibility are first explored, which reveal the potential for transport planning—when integrated with land-use planning—to contribute towards poverty reduction. The Sustainable Livelihoods Approach methodology is subsequently adapted to identify urban poor accessibility needs in Nairobi and to evaluate the responsiveness of the city's planning to those needs. The results are multi-faceted, and include identification of: 1) the potential for an adapted livelihoods framework to more systematically identify urban poor accessibility needs; 2) the regressive nature of Nairobi's renewed spatial plans; and 3) more equitable land-use and transport planning models.

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List of acronyms

- CBO- Community Based Organisation
- BRT- Bus Rapid Transit
- CBD- Central Business District
- COMESA- Common Market for Eastern and Southern Africa
- CES- Consulting Engineering Services, Ltd
- EAC- East African Community
- FDI- Foreign Direct Investment
- INTP- Integrated National Transport Policy
- JKIA- Jomo Kenyatta International Airport
- KISIP- Kenya Informal Settlement Improvement Program
- KSH- Kenya Shilling
- LRT- Light Rail Transit
- MRT- Mass Rapid Transit
- MoNMD- Ministry of Nairobi Metropolitan Development
- MSE- Micro and Small Enterprise
- NACHU- National Cooperative Housing Union
- NMR- Nairobi Metropolitan Region
- NRS- Nairobi Railway Station
- PPHPD- Projected Passengers per Hour per Direction
- SADC- Southern African Development Community
- SAP- Structural Adjustment Program
- SLA- Sustainable Livelihoods Approach
- UN-HABITAT- United Nations Human Settlements Program

1. Introduction – Renewal of Spatial Planning in Nairobi

Kenya is currently at an historic juncture, both in terms of its reform of national institutional frameworks that will impact future socio-economic development, and more specifically in its reform of spatial planning processes that have the potential to redress historic inequalities, including in the capital city of Nairobi. In 2010, a new constitution was approved by referendum, which “strengthens the claims of citizens for access to basic services, including adequate housing and water and sanitation” and that devolves “many of the responsibilities [previously held] by central ministries to county-level administrations” (World Bank, 2011: 3). The constitution incorporates many of the principles contained within the draft National Land Policy of 2009, including “equitable access to land rights and security of land rights.”

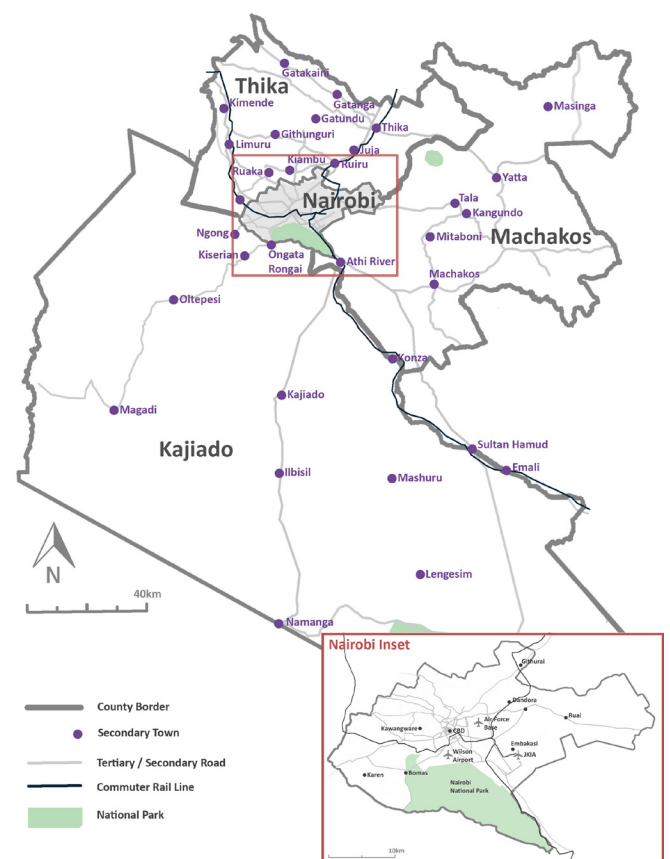
As part of these reforms, the country has placed a renewed emphasis on spatial planning, including through

its release of Kenya Vision 2030, a national visioning framework developed to inform economic, social and spatial planning in the country. Aligned with the reformation of governance frameworks and the planning renaissance, the national government established the Ministry of Nairobi Metropolitan Development (MoNMD) in 2008, with the mandate to “look at the larger public service, governance and land-use challenges for the entire [Nairobi Metropolitan] region” (see Figure 1.2) (Sclar, 2009: 9). MoNMD subsequently developed a visioning framework for the Nairobi Metropolitan Region (NMR), as well as a draft spatial plan emanating from the national and NMR visioning frameworks. Transport planning has emerged as a central focus of the draft spatial plan, under the recognition that inadequate transport systems are hindering the economic and spatial development of the city, which contributes towards 45 percent of the national Gross Do-

Figure 1.1. Livelihood, Land-Use & Transport Dynamics in Mutindwa Market – Nairobi (Hagans, 2011)



Figure 1.2. Nairobi Metropolitan Region (NMR) Map (adapted from CES, 2011b: 9.20)



mestic Product (GDP) per annum (KIPPRA, 2006b: 5; Republic of Kenya, 2007: 14).

If historic inequities in Nairobi are to be addressed, however, transport planning should not only aim to improve economic efficiency, but also respond to the specific transport needs of the urban poor. While Kenya's 2010 constitution made no mention of public transport (except for the right of disabled persons to have access to such services), Kenya's 2009 Integrated National Transport Policy (INTP) recognized the importance of transport for both national economic development and poverty reduction efforts, stating that the sector "will be important not only in improving the competitiveness of products, but also ... remain a key component in tackling such challenges as reduction of poverty by half by the year 2015 and overall improvement in the general welfare of the population" (Republic of Kenya, 2009: v).

While the government's inclusion of poverty reduction in the INTP was a positive step towards acknowledging transport's role in contributing towards such an objective, the applied linkages between transport planning and poverty reduction in much of the world remain weak (Hook, 2005: 11; Sohail, 2004: 9). The lack of applied linkages are evident within the INTP itself, given that beyond the Executive Summary, poverty is rarely mentioned in the document, with no detailed analysis of how improved

transport would, in practice, contribute toward poverty reduction. The risk, therefore, is that renewed transport planning in Nairobi will replicate models in which economic efficiency objectives dominate over the transport needs of the urban poor—a major oversight in a city where 44 percent of the population lives below the poverty line (Republic of Kenya, 2007: 16).

The aim of this working paper, therefore, is to: 1) develop a framework for identifying the transport and needs critical to the urban poor in Nairobi that, if met, would contribute toward poverty reduction efforts; and 2) to subsequently examine whether renewed planning in Nairobi is sufficiently responding to these identified needs.

To develop and apply such a framework, this working paper first explores the concepts of equity and accessibility in public transport planning that, when combined, reveal the potential for integrated land-use and transport planning to contribute towards poverty reduction. Influences that impact public transport planning globally are then identified, particularly the prioritization of economic efficiency objectives over poverty reduction. The Sustainable Livelihoods Approach methodology is subsequently adapted to identify urban poor accessibility needs in Nairobi and to evaluate the responsiveness of the city's planning to those needs. This paper then concludes with policy recommendations based on the findings from the above research and evaluation.

2. Opportunities and Risks of Public Transport Planning

This chapter explores tensions within contemporary public transport planning in cities of the Global South, particularly the prioritization of urban economic efficiency objectives over poverty reduction efforts. The potential impacts of the former type of transport planning on the urban poor are then analyzed, juxtaposed against examples of more equitable transport planning in the Global South.

2.1 Equity and accessibility as guiding concepts

Hook (2005: 11) warns that transport investments can “actually harm the development process and adversely impact the lives of the poor, unless the conditions under which they will lead to positive growth and poverty alleviation outcomes are carefully specified.” The need for a greater understanding of how transport can support poverty reduction efforts is a particularly salient issue, given the rise of major public transport infrastructure projects in the Global South, including in cities as diverse as Lagos, Delhi, Rio de Janeiro and Hanoi (ITDP, 2007: 15-16). While donor funding for urban public transport in the developing world has increased dramatically since the late 1990s, the operationalization of transport as a means for poverty reduction has not occurred to any significant degree. The Millennium Development Goals, for example, do not make any specific reference to transport provision (Hook, 2005: 4).

A critical first step in articulating how transport planning could aid poverty reduction is to define the concept of equity within the sector. In general terms, equity refers to “the distribution of impacts (benefits and costs)”, and whether this distribution is considered appropriate and fair (Litman, 2011b: 2). Given this working paper’s focus on Nairobi, vertical equity is seen as more relevant, in that the concept calls for systems that “favor economically and socially disadvantaged groups, therefore compensating for overall inequities” in society (Litman, 2011b: 4; Boschmann & Kwan, 2008: 143).

In terms of desired outcomes, Gakenheimer (2011: 59) suggests that equitable transport planning should result in the delivery of affordable accessibility. Geurs and van Wee, in their influential review of accessibility definitions and measures, define the concept as “the extent to which land-use and transport systems enable groups of indi-

viduals to reach activities or destinations by means of a combination of transport mode(s)” (2004: 128).

Within Geurs and van Wee’s definition of accessibility are four key components:

- 1) Land-use:** The amount, quality and spatial distribution of opportunities available at each destination and the demand for these opportunities at origin (residential) locations.
- 2) Transport:** The supply and demand differentials in transport services, including time, cost and effort to access the service, and transport system characteristics (e.g. travel speed, costs and scheduling).
- 3) Temporal:** The time when opportunities are available, and the time available for individuals to participate in these opportunities.
- 4) Individual:** The needs, abilities, and resources of individuals, all of which influence access to transport services and the spatial distribution of opportunities.

Each of the above components affects equitable accessibility. Land-use patterns, for example, influence travel demand and can introduce time restrictions, thereby impacting an individual’s access to services and livelihood opportunities (Geurs & van Wee, 2004: 128). To illustrate, a poor household may live on the periphery of an urban area in order to access affordable housing, but the peripheral location may conversely limit access to improved livelihood opportunities in more central areas of the city, a problem compounded by non-existent public transport systems. In such an example, accessibility to livelihoods is clearly restricted—both by the peripheral location of the residential location, and by the non-existence of public transport.

Individual needs, abilities and resources also influence the “types of relevant activities and the times in which one engages in specific activities”, thereby affecting all other components of accessibility (Geurs & van Wee, 2004: 128). To illustrate, an urban resident may operate an informal market stall in a central urban area, but lack the income to pay for daily public transport to the urban periphery where housing is more affordable. Since the resident needs to maintain their livelihood, they may be forced to live in cramped conditions with unsecure land tenure in an area within walking distance to their business. In this example, accessibility to affordable housing and more secure tenure is constrained—both by the livelihood needs and resources of the individual, and also by the lack of affordable and efficient transport.

Increased accessibility itself impacts livelihood and residential locational decisions, thereby influencing travel demand, people's access to opportunities and the "time needed to carry out activities" (Geurs & van Wee, 2004: 128). In rapidly urbanizing areas, for example, public transport expansion often results in increased residential construction along the transit corridor, which may both increase livelihood opportunities along the corridor for the urban poor (given the expanding residential population and customer base), and also lead to increased land prices that restricts the ability of the urban poor to access secure land tenure in these areas. Related, Petersen (2002: 20) notes that while transport planning routinely acknowledges the influence of spatial structures on transport demand, it rarely recognizes nor plans for the effects of transport on spatial development. How this complex conception of accessibility—which extends far beyond transport system design—relates to poverty reduction is explored in the following subsection.

Links between accessibility and poverty. Gannon and Liu (1997: 4) note that "the process through which the benefits of transport investments and policies lead to improvements in the standard of living of low-income groups often involves many links", with outcomes and associated benefits "very difficult to predict". While it may be difficult to predict or measure transport's impact on poverty reduction, the aforementioned comprehensive definition of accessibility allows for an examination of the inverse relationship between transport deprivation and poverty.

Hook (2005: 32) argues that limited mobility affects the poor in developing countries through the imposition of a significant time and cost burden, with Brown and Lloyd-Jones (2002: 128) similarly stating that "money and time lost in travel represent an often unrecognized cost for the poor." In Sao Paulo, for example, the urban poor living on the periphery of the city spend an average of 3 hours 15 minutes per day commuting between work and home (Barter, 2001: 15). In terms of cost, transport is generally considered affordable for the urban poor when mobility expenses do not account for more than 6 to 10 percent of monthly income or expenditures (Estupiñán, 2007: 10). Studies in many cities of the developing world, however, show that the poor often spend beyond this range, such as in Bogotá (18 percent) and amongst informal traders in Dar es Salaam (1 to 29 percent) (Muñoz-Raskin, 2010: 72; Sohail, 2004: 13). Additionally, the poorest often cannot afford to pay for any transport, and therefore rely on non-motorized transport (i.e. walking and bicycles) to access services and livelihood opportunities, which can contribute to time and cost burdens when there are large distances between residential locations and livelihoods, effectively turning "geographical margin-

alization into deeper social exclusion" (Gannon & Liu, 1997: 33; Brand & Dávila, 2011).

The aforementioned links between livelihoods, location and transport, and their impacts of these links on the urban poor have received increased attention in recent years. In Wigle's (2008) analysis of two low-income neighborhoods of Mexico City, for example, incomes at residentially-based micro-enterprises in central urban locations were found to be 21 percent higher than those on the periphery of the city, due to differences in access to income-diverse customers. Given the transport-related time and cost restraints of accessing other market areas in a city, this location factor appears to be important throughout the developing world, such as in Bangkok, where Hongladarom and Isarankura (1988) found that most of the self-employed poor operate a business within 5km of their place of residence, and in Delhi, where Anand and Tiwari (2006) found that low-income women were also constrained to livelihood opportunities within a 5km radius of their home.

These findings on the relationship between accessibility deprivation and its impact on livelihood options and income corresponds with Gannon and Liu's more generalized conclusions (1997: 12), in which they note that "the lack of affordable access deprives [the poor] of ability to take advantage of job opportunities and even of very basic social services", and that "high moving costs and a lack of affordable [residential] locations" constrains the ability of the poor to access improved employment and education opportunities. For public transport planning to achieve vertical equity and contribute toward poverty reduction efforts, it should therefore identify and incorporate the accessibility needs of the urban poor, many of which are also linked to land-use dynamics. There is evidence, however, that renewed public transport planning in the developing world often forgoes these considerations.

2.2 Risks of splintering urbanism in public transport planning

Gannon and Liu (1997: 23) argue that urban poor accessibility needs are often overlooked due to the contemporary positioning of transport planning, in which "economic efficiency is widely accepted as the primary objective", without sufficient consideration for poverty reduction. This prioritization of economic efficiency results in a bias against the poor through transport planning that is "oriented away from projects serving poorer areas [and/or away from] alternatives that service more lower-income individuals than higher-income individuals", as well as a lack of consideration of the spatial impacts that expanded systems may have on the urban poor (Gannon & Liu, 1997: 25). In this way, transport systems become regressive, rather than progressive, when measured against equitable accessibility.

Graham and Marvin (2001) developed the term ‘splintering urbanism’ to describe the prioritization of economic efficiency over poverty reduction in network infrastructure planning. In particular, they note that infrastructure in the era of globalization often reinforces exclusionary processes and spatial fragmentation, in that “new patterns ... are emerging as infrastructure networks link up ‘cherry-picked’, favored spaces ... whilst excluding and bypassing intervening spaces deemed to be less profitable” (2001: 307). Drawing on the work of Brenner (1998), they argue that countries have abandoned the ideal of equitable network infrastructure provision, and instead are focused on attracting investment capital through targeted infrastructure development. Related, urban planning is often positioned as an entrepreneurial exercise in order to situate and project cities “into internationalizing circuits of [capital] exchange”, including through the provision of infrastructure to customized spaces where global capital will invest (Graham & Marvin, 2001: 309), a competitively-driven process that Watson (2007: 209) notes leads to the social and spatial exclusion of the poor.

As part of the technological and organizational shifts associated with splintering urbanism, urban authorities often compete to position their cities as concentrated sites of control for transnational corporations, otherwise known as ‘world cities’ (Rakodi, 1998: 329). Keeling (1995: 117) argues that efficient transport systems are integral to attainment of world city status, due to their ability to enhance urban economic efficiency. Public transport, specifically, has been found to reduce vehicle congestion, thereby allowing for more rapid movement of goods, while also improving the productivity of citizens with access to the system (Litman, 2011a). Conversely, an economically inefficient urban transport system can lead to increased transaction costs and reductions in market sizes, thereby inhibiting the potential for business expansion, which reduces competitiveness in attracting Foreign Direct Investment (FDI) (KIPRA, 2006b: 5; Rakodi & Nkurunziza, 2007: 16). Beyond enhancing economic efficiency, Siemiatycki argues that public transport projects are often undertaken as “a catalyst towards the development of a modern city”, particularly through the projection of modern infrastructure imagery synonymous with world cities (Siemiatycki, 2006: 278-281).

The resurgence of public transport investments in the developing world since the late 1990s, often without substantive links to poverty reduction, therefore takes on a different context when analyzed against the global competition for capital investment flows. Public transport planning risks becoming dominated by this competition, functioning primarily as a means to improve urban efficiency and enhance the ‘modern’ image of cities, with comparatively little focus on poverty reduction (Keeling, 1995: 117). The risk of splintering urbanism is magnified in cities such as Nairobi that generate a substantial

proportion of the national GDP, and therefore are more susceptible to structural pressures associated with competitive approaches to urban planning.

Impacts of splintering urbanism on the urban poor.

As Cervero (2009: 1) notes, “transit investments can powerfully shape cities and regions” including through the redistribution of economic development into specific corridors or nodes, which in congested urban areas can result in net economic growth. This growth is often regarded as a positive in terms of urban development, in that it confers formal-sector employment growth and, with the right regulatory framework, increased revenues for urban administrations (as well as profits for property developers). Yet this concentrated investment can also result in splintering urbanism.

Low-income settlements tend to be located on linear portions of land targeted for transport improvements, such as road and railway reserves, with these settlements often identified as low-cost and easily cleared (Barter, 2002: 271; Gannon & Liu, 1997: 25). Resettlement sites, when offered, are frequently inaccessible to jobs, services, public facilities and public transport (Keivani & Werna, 2001). As Cervero (2009: 1) notes, “accessibility gets capitalized into the price of land”, which Barter (2002: 272) adds can result in development pressures that displace poor households located along transport corridors or nodes. Public transport fares, which are not always attuned to the purchasing power of low-income households, can act as another exclusionary mechanism, as can travel schedules not aligned with those employed in the informal sector (Gannon & Liu, 1997: 33).

These exclusionary processes are evident in many cities throughout the world, including in Bangkok, where the elevated rail system, SkyTrain, excludes the urban poor through fares levels beyond the purchasing power of low-income users, and its related instigation of commercial and real estate development that has displaced over 50,000 low-income residents to the urban periphery, where they are poorly served by public transport (Charoentrakulpeeti & Zimmermann, 2008: 308; Graham & Marvin, 2001: 328). Similarly in Delhi, urban authorities constructed the new metro system with the aim of reducing traffic congestion and pollution, and enhancing the ‘cosmopolitan’ image of the city (Joshi, 2001). With little consideration of the accessibility needs of the urban poor, it is perhaps unsurprising that slums and informal markets were displaced along metro corridors, and that 87 percent of the population surveyed in two slums near the metro were found to have never used the completed system (Siemiatycki, 2006: 281; Arora & Tiwari, 2007). The implication, therefore, is that transport infrastructure can be a blunt, network-based manifestation of broader structural influences that are contributing to increased exclusion of the poor while positioning urban spaces for further capital investment.

2.3 Challenging the splintering urbanism discourse

Splintering urbanism as a result of contemporary public transport planning is not, however, a foregone conclusion, as evidenced in the examples below from Colombia, South Africa and Brazil.

In Medellín, Colombia, the city's innovative "urban aerial cable-car public transport system"—dubbed Metrocables (Figure 2.1)—provides improved mobility to two of the poorest sections of the city, reducing travel times from hillside communities to the valley, and reducing travel costs through its single-fare integration with the city's metro system (Brand and Dávila, 2011). In addition to improving urban poor mobility, it has also led to urban upgrading and economic growth in the immediate vicinity of the Metrocable stations (*ibid*). The system, while technically efficient, was not designed with economic efficiency objectives, but rather to "repay the city's historical debt" to the poorest and most violent areas of the city (Dávila, 2009; Dávila, 2011).

In Durban, South Africa, urban planners incorporated the livelihood needs of informal sector entrepreneurs when upgrading Warwick Junction, the largest public transport interchange station in the city. By the mid-1990's, an estimated 4,000 informal traders worked in the area, attracted to the income-diverse customers passing through the station (Skinner, 2008: 234). Without dedicated market infrastructure, however, Warwick Junction became associated with grime and crime (*ibid*). Instead of evicting the traders when they upgrading in the late 1990s, urban authorities expanded the provision of well-served street trading facilities and renovated the existing fresh-produce market building. The improved infrastructure was aimed at both improving the public's perception of and experience within the interchange, while also improving the livelihoods of entrepreneurs working in the area. Moreover, planning for the upgrades occurred in close consultation with traders, which also led to the Traders Against Crime initiative in conjunction with local police force, resulting in a substantial reduction in crime at the interchange (*ibid*: 235).

In Sao Paulo and Curitiba, Brazil, transport and land-use planners have sought to link real estate growth along public transport corridors with improved provision of housing for the poor. Authorities in these cities have linked densification along transport corridors with the provision of social housing via transfers of development rights or through the relaxation of plot and/or floor area ratio standards (Barter, 2001: 22). As Barter (*ibid*) notes, "not only does densification take place in the most accessible locations that are well-served with public transport (and at the same time enhancing public transport ridership), but the supply of affordable housing is enhanced at the same time." Through this model, planners have mitigated against the gentrification that often occurs along public

Figure 2.1. Medellín's Metrocables (CCA Course 3: 2011)



Figure 2.2. Market Infrastructure at Warwick Junction (Markets of Warwick, 2010)



transport corridors, allowing more low-income households to have access to public transport systems.

The aforementioned examples have not been perfect in addressing the urban poor's accessibility needs. In Medellín, the transport of goods is not allowed on the Metrocable cars, which precludes its use by some informal sector entrepreneurs (Dávila, 2011). In Durban, attempts to replicate Warwick Junction's model in other areas of the city were often inadequate, with badly conceived trading stand allocation policies, and poor positioning of new markets in relation to the transport stations (Skinner, 2008: 235). While in Brazil, urban administrators have not always effectively integrated the densification and social housing programs with new public transport systems (Barter, 2001: 23). Nonetheless, the aforementioned planning examples illustrate contemporary transport infrastructure and integrated land-use planning specifically designed to enhance urban poor accessibility, thereby

running counter to splintering urbanism discourse.

Related, Harrison notes that "the understanding of contingent outcomes is important as it challenges a notion implicit in much globalization discourse, namely that the emergent spatial order is an inevitable, natural outcome of macro-forces" (2003: 17). Key stakeholders, including government, civil society, the private sector and communities themselves should be recognized as agents with the potential to influence planning, both positively and negatively. Contrasting Bangkok's SkyTrain and Delhi's metro with the aforementioned examples from Colombia, South Africa and Brazil, for example, clearly show that differing equitable accessibility outcomes stemming from contemporary transport planning and land-use planning are possible. What is crucially needed is a framework to both identify the specific accessibility needs of the urban poor and to inform and evaluate the equity of integrated land-use and transport plans.

3. Livelihoods framework for equitable transport & land-use planning

If integrated land-use and transport planning is to more effectively deliver equitable accessibility, and thereby contribute toward poverty reduction efforts, new frameworks are necessary to systematically identify urban poor accessibility needs, and to provide a basis for informing and evaluating integrated transport and land-use plans. This working paper proposes the adaptation and utilization of a livelihoods framework—detailed in the current chapter—to identify such needs in Nairobi and to evaluate the equity of proposed integrated public transport and land-use plans.

3.1 Use of a livelihoods framework in transport & land-use planning – Potential and constraints

Urban poverty research in the developing world in the 1990s resulted in the adaptation of rural livelihood development frameworks to urban settings, particularly through the adaptation of the Sustainable Livelihoods Approach (SLA) (Rakodi, 2002). SLA, as Rakodi notes, can be a powerful tool for “understanding and man-

aging the complexity of livelihoods, enabling complementarities and trade-offs between alternative supporting activities to be assessed and providing a basis for identifying policy objectives and interventions” (Rakodi, 2002: 4). Within such a framework, a livelihood is defined as comprising “the capabilities, assets (including both material and social resources) and activities required for a means of living” (Carney, 1998: 4). A livelihood is considered sustainable “when it can cope and recover from stresses and shocks and maintain or enhance capabilities and assets both now and in the future” (Moser & Norton, 2001: 5), without “compromising the ability of future generations to meet their own needs” (Rakodi, 2002: 17), a broad conception which includes considerations for ecological, social and administrative sustainability.

In urban settings, households “construct their livelihoods both on the basis of the assets which are available to them and within a broader socio-economic and physical context” (Rakodi, 2002: 8). Collectively, it is argued that these assets (Table 3.1) improve the well-being of a household directly by enhancing livelihood security,

Table 3.1. Capital Assets in a Livelihoods Framework (Carney, 1998: 4)

Asset Type	Description
Human Capital	Labor resources available to households, including the number of household members and their available time, as well as their education and skill levels and health status.
Social and Political Capital	Social resources available to households, including networks, groups, relationships of trust and reciprocity, and institutional support.
Physical Capital	Basic infrastructure, including transport, shelter, water, energy and communications, and the production equipment and means that enable pursuit of livelihoods.
Natural Capital	Resource flows derived from natural resources that are useful to livelihoods, including land, water and other environmental resources.
Financial Capital	Financial resources, including savings, credit, remittances and pensions, which support different livelihood options.

and indirectly by increasing the ability of households and communities to influence the policies and institutions that “govern access to assets and define livelihood options” (Rakodi, 2002: 11). Use of a livelihoods framework also requires a situational analysis (often termed a vulnerability analysis) that examines the broader socio-economic and physical/spatial context within which these assets exist (Moser & Norton, 2001).

The use of SLA is not without drawbacks. Critics have noted that SLA focuses primarily on “the technical nature of development” while overlooking “issues of politics, power and voice, and rights and empowerment” (Moser, 2008: 55). Moser and Norton (2001) addressed this criticism, to a degree, through the integration of a rights-based approach into the framework. At the analytical level, Moser and Norton (2001: 21-25) suggest that the livelihoods framework should incorporate how structures of power and authority influence the poor’s livelihoods strategies, particularly in terms of whether governance structures enable key rights-based normative principles. While power structures extend beyond institutional frameworks (to include informal structures as well), Moser and Norton argue that fulfillment of the poor’s economic and social rights occurs most substantially when governance structures recognize their obligations to all citizens, and particularly when such structures are operationalized through local institutions supportive of citizens claiming their rights.

With appreciation of rights-based inputs, and in recognition of the multidisciplinary strength of the livelihoods framework, the following section will focus on its adaptation for identifying urban poor accessibility needs, and for informing and evaluating integrated land-use and public transport plans.

3.2 Adaptation of livelihoods framework

There are few guides to adapting the livelihoods framework for integrated land-use and transport planning, particularly planning that aims to improve equitable accessibility. The principles for its use in generalized transport planning described by Booth, Hanmer and Lovell (2000) and Sohail (2004) are, however, important contributions, as are the inputs from Payne (2002) and Brown and Lloyd-Jones (2002) on the impacts of tenure, shelter and spatial planning on urban livelihoods.

In terms of livelihoods framework assets, affordable public transport (a physical asset) allows the poor to access livelihood opportunities, as well as other assets that support improved livelihood strategies, such as schools and clinics (human assets), financial institutions (financial assets), and social networks and institutions of influence (social and political assets) (Booth, Hanmer & Lovell, 2000: 16; Sohail, 2004: 12). Less widely considered, but also important is public transport’s role, as a physical asset, in

Table 3.2. Livelihoods Framework: Urban Poor Accessibility Needs (General)

Asset Type	Description
Human capital	Productive time available to individuals and households, particularly in terms of time saved in traveling, because of: 1) residential proximity to livelihood opportunities; and/or 2) availability of accessible, affordable and efficient public transport that link the urban poor to livelihood opportunities.
Social and Political Capital	Social resources supportive to micro and small enterprises (MSEs), particularly land-uses that support cluster-based enterprise formation, and public transport systems that support networking of complementary enterprises / entrepreneurs in a value chain.
Physical Capital	1) Accessible, affordable and efficient public transport that links residential and livelihood locations; 2) residential tenure security – in areas close to livelihood sites or income-diverse customers, and/or in close proximity to public transport that facilitates access to livelihoods; and 3) livelihood site tenure security.
Natural capital	Accessible land that is supportive of urban agriculture.
Financial Capital	Access to financial services is not analyzed specifically within this working paper.

directly employing individuals in its operations and transporting goods for informal enterprises (Brown & Lloyd-Jones, 2002: 197-198; Sohail, 2004: 13). Efficient public transport (that is locationally accessible and affordable to the urban poor) also allows individuals and households more time (a human asset) for engaging in productive activities (Brown & Lloyd-Jones, 2002: 188).

Residential location also functions as an important physical asset, particularly when residences are located near to livelihood opportunities, or located near affordable and efficient public transport systems that provide access to livelihoods and other assets (Brown & Lloyd-Jones, 2002: 191). Shelter itself can also function as a site for livelihoods, with the quality of such livelihoods often dependent whether the shelter is located near to income-diverse customers (Payne, 2002: 151). Reflecting the importance of enterprise clustering, Brown and Lloyd-Jones note that “economic activities in urban areas benefit from the spatial proximity of large markets, economies of scale and the aggregation economies that ensure plentiful supplies of labor, services and finance”, suggesting that clustered livelihood sites can increase access to other assets, in-

cluding human, social and financial capital (2002: 191). Lastly, urban agriculture is an important livelihood for the urban poor in many cities of the Global South, with secure access to productive land functioning as a key natural asset (Prain, 2006: 6 – 8).

To focus the livelihoods framework for this working paper, only public transport users (actual or potential) are considered, and not on those employed in the transport sector. This paper also assumes that an accessible, affordable and efficient public transport system would provide improved physical access to a range of social and financial services within a city. While individuals’ specific abilities and resources to utilize these services and institutions vary, the potential for integrated transport and land-use planning to address such constraints is minimal.

With the aforementioned considerations, the livelihoods framework is narrowed in Table 3.2 to guide the subsequent identification of urban poor accessibility needs in Nairobi. In this framework, the right of the urban poor to inform equitable land-use and transport planning is an implicit and cross-cutting need.

4. Situational analysis of the urban poor in Nairobi

As noted in the previous chapter, the application of a livelihoods framework requires a situational analysis, to determine the socio-economic and spatial context in which livelihoods assets exist. To develop an understanding of these contexts in Nairobi, this chapter examines the structural influences—including colonialism and globalization pressures—that have impacted the city’s spatial form and livelihood base, particularly from the perspective of the urban poor. Chapter 5 will then build upon this analysis, to identify the specific accessibility needs of the urban poor within these contexts, as guided by the adapted livelihoods framework.

4.1 Unequal development during the colonial and post-independence eras

Colonial cities of sub-Saharan Africa were typically designed with the aim of facilitating the business and maintaining the lifestyles of European residents, with land-use planning employed specifically for this purpose to the detriment of the local population, a process that was also employed in Nairobi (Rakodi, 2007; Harvey, 2008). Colonial authorities established the city following a decision by the Ugandan Railways Company to relocate its head-

quarters from Mombasa to the current site of Nairobi in 1899, resulting in the settlement’s growth as a commercial and business hub (K’Akumu & Olima, 2007: 90). The 1899 town plan only considered the land-use and housing needs of Europeans and Asian traders, setting into motion early segregation and exclusion, particularly of Africans (Anyamba, 2011: 57). Matched with European-led land expropriation in areas close to Nairobi, there was a concomitant early growth of informal settlements in the city (Majale, 2000: 4).

Nairobi’s 1948 Master Plan formalized the city’s emerging segregated spatial patterns, with official segregated residential areas for the African, Asian and European populations (Figure 4.1). The authorities similarly segregated livelihood options, with Europeans controlling Nairobi’s administrative and industrial resources, the Asian population primarily concentrated in trading and primary processing, while the African population was mostly confined to working in domestic and clerical jobs, with their residence in the city regarded by authorities as temporary (Otiso & Owusu, 2008: 148; Kinuthia, 2010: 149; McCormick, Kinyanjui & Ongile, 1997: 1096

The colonial government’s provision of public housing for Africans, which was inadequate in numbers, focused on

Figure 4.1. Racial Segregation in Nairobi's 1948 Master Plan (adapted from a sketch in Nairobi's 1948 Master Plan, as shown in Pamoja Trust, 2006)

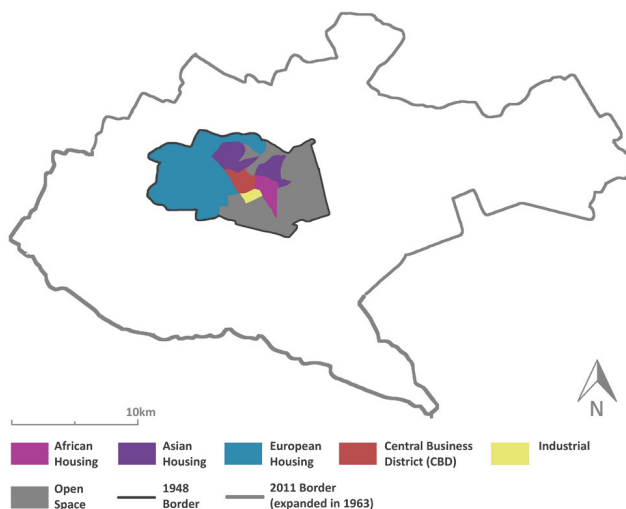
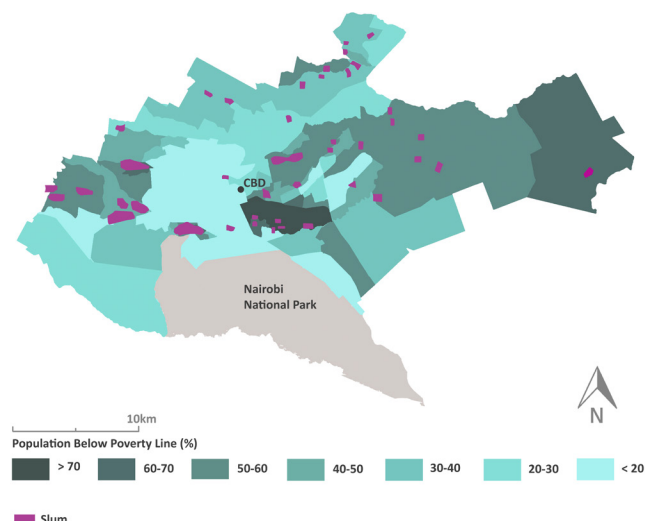


Figure 4.2. : Spatial Poverty Patterns in Contemporary Nairobi (Map created with data from: Ndeg’e et al, 2003: 63; and Republic of Kenya, 2006: 37)



delivery of one-room ‘bachelor bed spaces’ for men, primarily in Eastern Nairobi (contemporary Eastlands) (Shihembetsa & Olima, 2001: 293). With the African population increasing 174 percent between 1948 and 1962, largely due to continued rural land expropriations by colonial authorities, the growing population continued to establish informal settlements in areas close to employment opportunities, particularly east of the Central Business District (CBD) and nearby industrial quarter, as well as at the periphery of European residential areas west of the CBD (Shihembetsa & Olima, 2001: 293; Hake, 1997: 53; Amis, 2006: 172). These patterns remain evident in contemporary Nairobi, with the greatest poverty levels existing in the former segregated African residential areas immediately south and east of the CBD and at the periphery of the former segregated European residential areas (Figure 4.2), areas that also contain the largest slums.

When Kenya achieved independence in 1963, de facto socio-economic segregation replaced de jure racial residential zoning, with the economic elite having preferential access to land and housing, including when the city’s borders were expanded greatly from 82km² to 690km² at independence (Gatabaki-Kamau & Karirah-Gitau, 2004: 159; Shihembetsa & Olima, 2001: 293). The continuation of land and housing inequalities was significant, given that with the lifting of migration restrictions to urban areas, Nairobi’s population more than doubled from 345,000 in 1963 to 800,000 in 1979 (Shihembetsa & Olima, 2001: 294).

Population growth accompanied economic expansion, with Nairobi remaining dominant nationally and regionally in industrial intensification and diversification (Simon, 1992: 95). Employment growth in the civil society, commerce, service and industrial sectors were all concentrated within or close to Nairobi’s CBD, thereby solidifying the city’s mono-centric urban form that originated during the colonial era (Obudho, 1997: 323; Oyugi & K’Akumu, 2007: 101). To direct further spatial growth, Nairobi enacted the *Metropolitan Growth Strategy of 1973*, a master plan that sought to create a more poly-centric urban form by decentralizing industrial growth to satellite centers in the metropolitan region. The plan was largely ineffective due to a lack of adequate resources and effective administrative frameworks to implement the strategy (Oyugi & K’Akumu, 2007: 101).

Otisu and Owusu (2008: 145) also note that 1970’s-era planning frameworks—including the aforementioned 1973 urban plan—prioritized ‘modern development’, and were largely unresponsive to the needs of the growing urban poor population. With continued inequalities in land and housing delivery, slums consequently expanded, as did slum evictions and demolitions, given that such settlements were not aligned with the ‘modern’ image of Nairobi that city authorities were attempting to project (Ngau, 1995: 92; Riley & Wakely, 2003: 19). By the late 1970s, authorities began to rec-

ognize the futility of such actions, and site-and-service housing schemes¹ became more common, though such developments were generally poorly targeted, with significant ‘leakage’ to middle-income households (Riley & Wakely, 2003: 19; Bassett & Jacobs, 1997: 217). Informal settlements therefore continued to expand and densify rapidly as the city’s population grew, with the number of informal housing units multiplying from an estimated 22,000 in 1972 to 111,000 in 1979 (K’Akumu & Olima, 2007: 92).

Though Nairobi’s economy expanded following independence, the formal livelihood sector was unable to absorb the rapidly growing population, resulting in expansion of the informal livelihood sector (estimated to have employed 20 percent of the city’s labor force by 1972) (Macharia, 2007). Given that planning operated with the assumption that ‘modern’ economic development should replace informal livelihoods, authorities often targeted informal businesses for demolition—similar to their futile attempts to eliminate slums (Kinyanjui, 2008: 26).

By the late 1970s, Kenya’s economy endured several shocks, including declining global commodity prices beginning in 1976; the disbanding of the East African Community (EAC) common market in 1977 (which had given Kenyan firms preferential access to regional markets); and the global oil price shock of 1979 (Manda & Sen, 2004: 30). Together, these shocks introduced a new era in Nairobi in which urban development became more intricately influenced by global structural processes.

4.2 Global-era informalization

Structural Adjustment Programs (SAPs)—which consisted of a package of macroeconomic reforms to reduce government involvement in the economy, liberalize trade and currency markets, and encourage domestic and foreign investment—were implemented throughout the developing world in the 1980s (Briggs & Mwamfupe, 2000), a process that Zeleza and Tiyambe (1999: 45) argue shifted significant costs of the economic crisis to the politically and economically weak.

Beginning in 1979, Kenya entered into its first SAP phase, which resulted in high inflation and wage freezes in the formal sector, straining the ability of households to survive and sustain their standard of living (Manda & Sen, 2004: 31; Muraya, 2006: 129; Amis, 2006: 170). Wage employment was further reduced in the 1990s with the enactment of the last phase of SAP reforms, with some industrial sectors, such as the garment sector, experiencing near elimination following trade liberalization (Obudho, 1997: 309; Daniels, 2010: 18). While parts of the industrial sector began to recover post-2000, businesses now

often hire part-time and casual workers as a cost-reduction measure, eliminating the benefit of increased livelihood security that the formal sector previously provided over the informal sector (Manda & Sen, 2004: 39).

Reflecting a decoupling of population growth with economic growth, Nairobi's population expanded rapidly even with the onset of economic hardships, rising from approximately 828,000 in 1979 to 2.75 million in 2005, with most of the growth occurring due to net in-migration (Olima, 2001: 3; Hendricks, 2011: 120; Republic of Kenya, 2007: 8). The population, post-2005, continued to increase at approximately 4 percent per annum (Mundia & Aniya, 2005: 2844). With the formal sector unable to absorb any significant percentage of the increasing population, the urban poverty rate rose from 29 percent in 1992 to 49 percent in 1997, even as rural poverty rates stayed at a near constant during the same period (World Bank, 2006, 14).

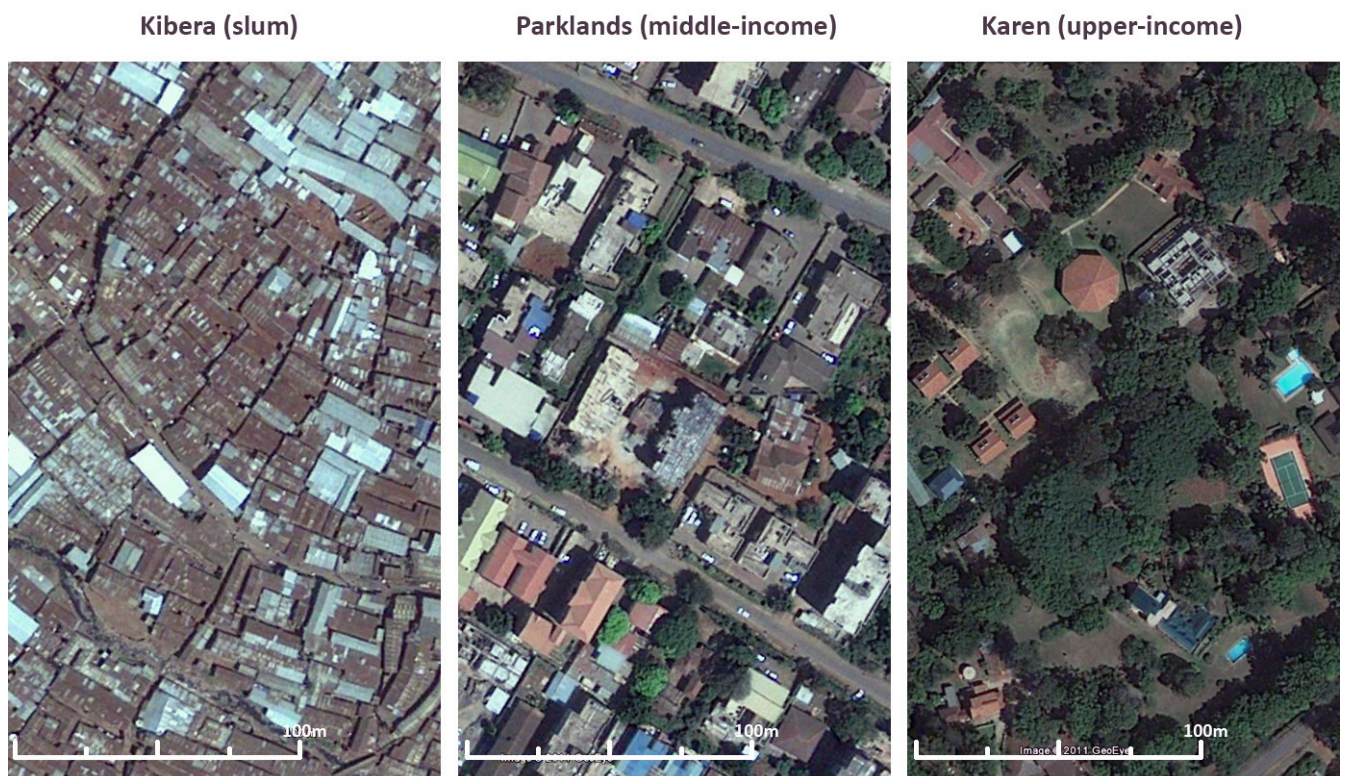
Planning systems in Nairobi were unable to respond to the rapidly changing socio-economic environment. Former President Moi abolished the City Council for nearly a decade (1983-1992) and appointed a City Commission under presidential authority. Linehan argues that this top-down governance structure in the city "opened the floodgates to economic liberalization and accelerated the collapse of the orderly planning and development" (2008: 26-27). Infrastructure dete-

riorated significantly due to the imposition of increased population densities, economic activities (including informal enterprise operations) and traffic congestion on public systems that received little investment (Howe & Bryceson, 2000: 28).

Growth of the Informal Livelihoods Sector and Slum Densification. Urban poor adaptation strategies to economic stagnation and a lack of formal sector employment opportunities included increased smallholder urban agriculture production and informal sector participation. By the late 1990s, approximately 150,000 households were involved in urban farming, often as a subsistence activity for the poorest residents (Foeken & Mwangi, 1998; Republic of Kenya, 2007: 27). More striking, the 2009 Kenya Economic Survey (Republic of Kenya, 2009b) estimated that the informal trading, service and manufacturing sector produced over 90 percent of new jobs annually and employed 80 percent of the labor force, underscoring its critical importance to the vast majority of Nairobi's residents in the global era.

The Government of Kenya increasingly recognized the importance of the informal sector, noting in its 1986 Sessional Paper No. 1 that the "the bulk of the work force will have to be productively employed in these [informal] activities" (Republic of Kenya, 1986: 2). As Kinyanjui argues, however, there has been a "mismatch between

Figure 4.3. Comparison of Residential Density in Nairobi (Google Earth, 2011)



policy and the political will to implement it” (2008: 34). For example, while the government announced plans in the early 1990s to construct additional markets and worksites in Nairobi for informal sector entrepreneurs, the funds for many of these new markets never emerged, with much of the designated land stolen by political elites, particularly during the Moi administration (ending in 2002) (Muraya, 2006: 132; Moyi & Njiraini, 2005: 41-45). Of those spaces developed, many lacked critical infrastructure, such as electricity and water. Following political changes in 2002, national regulatory frameworks increasingly re-emphasized the need to support the informal sector, though the political will at the local level to implement such frameworks was still problematic (Hendricks, 2011: 139). For example, while the Ministry of Local Government directed local authorities to establish vending sites for informal traders in 2003, in Nairobi, this resulted in a prolonged period of attempts to remove street traders from the CBD to more peripheral markets lacking space, adequate infrastructure for all displaced traders or access to income diverse customers (Mitullah, 2004: 16-17, 32; Linehan, 2008: 28-34).

The spatial growth of the city, including land and housing provision, consisted of similar inequities. Between 1971 and 1995 the number of slums in Nairobi increased from 50 to 133, with rapid densification occurring particularly during the 1980s and 1990s (Mundia & Aniya, 2005: 2834). In the Huruma tenement district, for instance, there were over 1,600 dwelling units per hectare in 2007, compared to an average of 25 and 15 units per hectare in middle-income and upper-income areas, respectively (Figure 4.3) (Huchzermeyer, 2007: 715; K’Akumu & Olima, 2007: 95). The majority of slum dwellings (92 percent) are owned by individuals living outside such settlements, who have acquired the land via corrupt arrangements with local authorities, and build units as rental income properties (World Bank, 2006: 36; COHRE, 2007: 27).

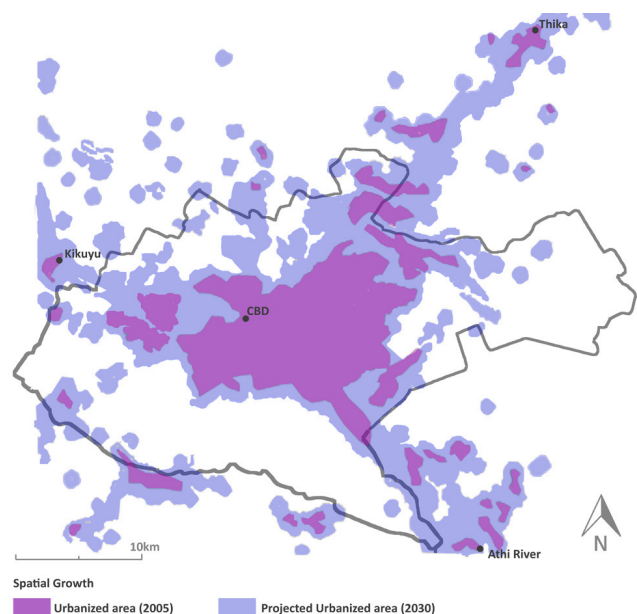
Given that the majority of the urban poor rely on walking as their principle means of accessing livelihoods, slums located close to livelihood opportunities—the majority of which remain in and around the CBD—are favored by residents, with locational advantages capitalized into rent prices, irrespective of residential quality (K’Akumu & Olima, 2007: 94; Amis, 2006: 172). As an example, Kibera, located in close proximity to the CBD, attracts the highest rents amongst Nairobi’s slums, even though the extreme density levels often leave no additional space for water and sanitation infrastructure, meaning a high proportion of the population has no toilet within or close to their home (Amis, 2006: 172; Republic of Kenya, 2007: 48). With these market demands and protection from local authorities, structure owners have little incentive to improve slum infrastructure (World Bank, 2006: 35). The result is that an estimated 55 percent of Nairobi’s population now lives on only 5 percent of the city’s land, with 78 and 81 percent of slum-based households lacking ac-

cess to electricity and piped water, respectively, leading the World Bank to conclude that Nairobi has some of the worst slums in sub-Saharan Africa (K’Akumu & Olima, 2007: 87; World Bank, 2006: 35).

More positively, the new 2004 national housing policy emphasized “the need for slum upgrading through the provision of security of tenure, basic infrastructure and services [and] the incremental improvement of housing”, along with encouragement for community and civil-society participation, along with compensation for loss of assets in the event of relocation (Omenya & Huchzermeyer, 2006: 304). The policy, however, does not substantively engage with the tenancy challenge in Nairobi, which has hampered the potential for city-wide slum upgrading.

While there is continued densification of existing slums, rapid peri-urban residential growth is also occurring in NMR, fueled largely by a speculative property market and a lack of middle-income housing (Obudho, 1997: 317; Juma, 2011b). Peri-urban expansion in Nairobi occurs along transport corridors, particularly road links emanating from the city’s core, reflecting the ongoing mono-centric concentration of employment within, or near to the CBD (Mundia & Aniya, 2007: 786; Mwongela, 2010; UN-HABITAT, 2010: 168). Mundia and Murayama (2010) forecast this pattern of peri-urban expansion to continue, based on their spatial modeling through the year 2030 (Figure 4.4). There is also evidence of the proliferation of new slums occurring in these rapidly developing regions. A 2004 UN-HABITAT

Figure 4.4. Projected Urbanization of Nairobi by 2030 (Adapted from Mundia & Murayama, 2010: 268)



study found, for example, that 37 percent of residents in Mavoko council (primarily consisting of Athi River) were living in slums (UN-HABITAT, 2006: 12).

4.3 Urban poor situational analysis summary

What is clear from the above analysis of Nairobi is that economic and spatial planning and related development processes have continually prioritized modernization objectives and the needs of the elite above those of the urban poor, both during the colonial and post-independence eras. With the onset of an economic recession in the late 1970s, the subsequent enactment of SAPs and a rapidly growing urban poor population, further informalization of livelihoods and residential patterns in the city became a near inevitable. Institutional frameworks during the global era, even when more responsive to the needs of the urban poor, were often not implemented fully, with corruption in the 1980s and 1990s particularly impacting the equitable development of the rapidly growing city.

The growing urban poor population has increasingly turned to the informal livelihood sector as their key adaptation and survival strategy, while also increasingly residing in densifying slums that confer locational livelihood advantages, despite significant quality-of-life deprivations. Institutional frameworks post-2002, while more responsive to the needs of the urban poor in theory, have often remained inadequate in practice, resulting in few large-scale measures to improve the livelihoods or living conditions of the urban poor and entrenching spatial fragmentation in the city (Figure 4.5). In terms of livelihood assets, it is clear that the urban poor are constrained in all respects and generally unable to claim their rights through institutional frameworks. As the city continues to expand spatially, there is a real threat of the reproduction of these inequities peri-urban areas of NMR. The new 2010 Con-

stitution and the reformation and renewal of urban planning frameworks therefore offer a key opportunity to address inequalities of the past and pursue more equitable development for the future, though such an outcome is not guaranteed.

Figure 4.5. Spatial Inequality & Fragmentation in Contemporary Nairobi



NOTES TO CHAPTER 4

1. The definition of sites and services housing schemes, as summarized by Kihato (2012): "In the 1970s, John Turner, Charles Abrahams and others espoused an approach which was more in harmony with the natural processes of shelter acquisition and development of the poor themselves. Mayo and Gross (1987), state that such an approach proposed that public programs capitalize on the untapped energies and resources of the poor through "pro-

gressive development" schemes. Practically, this meant providing serviced sites for self-build housing, or housing that was affordable by low-to-moderate-income households and which could be progressively upgraded over time. Complementing these sites and services schemes, were to be slum upgrading or squatter upgrading schemes that focused on improving existing residential areas of the poor rather than on developing undeveloped land."

5. Accessibility status and needs of the urban poor in Nairobi

The preceding urban poor situational analysis is extended in this chapter to examine how the spatial and livelihood patterns in Nairobi intersect with the public transport system, in order to identify urban poor accessibility needs. To conduct such an analysis, this chapter: 1) provides a brief examination of existing public transport services in Nairobi; 2) identifies the urban poor's primary livelihood typologies; 3) compares existing transport services with urban poor livelihood and spatial patterns; and 4) concludes with organization of identified accessibility needs into the adapted livelihoods framework.

5.1 Existing public transport services

Economic stagnation in Nairobi during the 1980s and 1990s, inadequate planning, and public transport privatization combined with reduced infrastructure investments resulted in a contemporary public transport system that has little government control, a significant occurrence given that 70 to 85 percent of all motorized trips in the city are undertaken on public transport (Howe & Bryce-son, 2000: 28; Armstrong-Wright, 1993). Nairobi's public transport system currently consists of three privatized services: 1) conventional passenger buses, operated by eight companies and carrying 17 percent of public transport passengers; 2) paratransit buses (matatus), operated through a highly individualized ownership structure and carrying 82 percent of public transport passengers; and 3) a very limited commuter rail service, operated through a private concession and carrying just 1.5 percent of public transport passengers (AFDB, 2007: 7).

Matatus, while providing the majority of public transport services in the city, remain unaffordable to many of Nairobi's urban poor, particularly given that in 2004, 73 percent of slum residents were found to live on less than KSH106 (US\$1.40) per day (Salon & Gulyani, 2010: 646). For urban poor households on the periphery of the city, however, matatus often function as a critical link to livelihoods elsewhere in the city. The commuter rail line, though carrying a nominal number of passengers and offering only a limited schedule, has a flat fare, as of 2010, of KSH20 (US\$0.22) per trip that makes it more cost-effective than matatus for those living in peripheral areas that have locational access to the rail system (AFDB, 2007: 7). Consequently, there is severe overcrowding on the limited number of trains (Figure 5.1).

Due to the overall inadequacy of public transport systems, many of the urban poor continue to reside in dense slums close to the CBD and industrial areas in NMR, where they can walk to access livelihood opportunities (Sclar: 2009: 8). A World Bank survey of 4,375 individuals in Nairobi's slums found, for example, that 65 percent of the urban poor walk to work (Salon & Gulyani, 2010: 646). How the urban poor access and support the development of their livelihoods within such a context is explored further in the following sections, along with the identification of accessibility needs that could support improved livelihoods.

5.2 Accessibility status & needs: Micro and Small Enterprises (MSEs)

Informal Livelihood Typologies. In a 1999 government baseline survey of micro and small enterprises (MSEs) in Kenya—which has not since been repeated as of this writing—three primary urban MSE sector typologies were noted: 1) trading, comprising 67.4 percent of urban MSEs; 2) services, comprising 21 percent of urban MSEs; and 3) manufacturing, comprising 11.7 percent of MSEs (Republic of Kenya, ICEG and K-REP, 1999). The baseline survey's MSE typology hierarchy corresponds to the findings in a more recent 2006 World Bank survey, in which it was found that: 74.5 percent of MSEs owned by slum-based households were involved in the trading and service sectors; 22

Figure 5.1. Nairobi Commuter Train (Hagans, 2011)



percent were involved in small manufacturing, construction or repair; and 0.9 percent were involved in farming and livestock (a fourth livelihood typology) (World Bank, 2006: 31). These surveys indicate, therefore, that an accessibility analysis of the urban poor should consider the related needs for those working in the informal trading, services, manufacturing and urban agriculture sectors.

Urban Poor Accessibility Data. There is a scarcity of detailed data on the accessibility statuses and needs for participants in the four MSE sectoral typologies in Nairobi, a critical information gap that Fouracre, Sohail and Cavill (2006) note exists across the developing world due to inadequate travel survey methodology. This deficiency is also present in the travel survey contained within the Ministry of Transport-commissioned Nairobi Mass Rapid Transit Feasibility Study (detailed further in the following two chapters). While the study methodology notes the different socio-economic and livelihood compositions of respondents, it does not disaggregate survey findings based on these demographic compositions (beyond linking income and willingness to pay for public transport services), instead presenting only average values in terms of trip purpose and travel times. Identification of urban poor accessibility needs in this working paper are therefore drawn from more fragmented and anecdotal evidence.

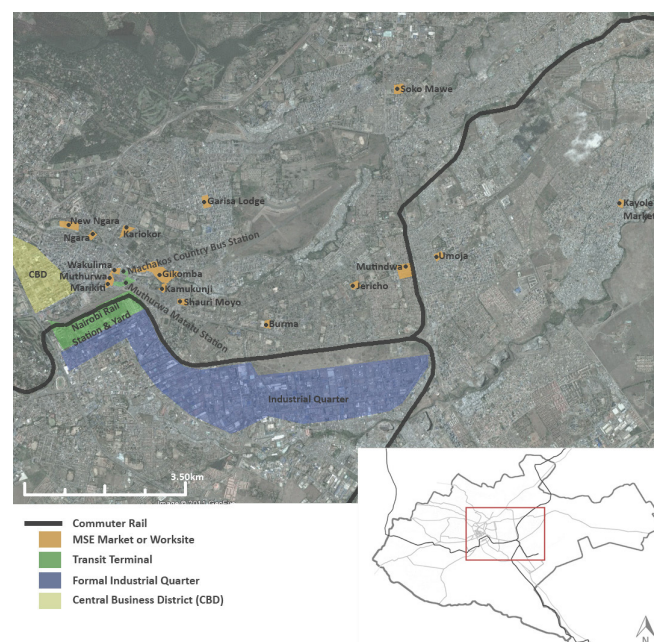
MSE Spatial Distribution. As a first step in identifying the MSE-related accessibility needs of the urban poor in Nairobi, it is important to understand the spatial distribution of MSEs in the city. Gulyani and Talukdar (2010: 1713), analyzing World Bank survey data, found that 59 percent of MSEs owned by slum-based households are operated outside the home, with 48 percent of MSEs selling in locations beyond the owner's settlement. Such a split finding is clear from other surveys of MSEs in Nairobi. In Kibera slum, for example, a 1991 survey found that 80 percent of MSEs in the settlement were found along footpaths and inside residences, with the remaining 20 percent located in markets (Parker & Aleke-Dondo, 1991). Meanwhile, there are an estimated 50,000 informal traders operating in, or near to Nairobi's CBD, indicating a large number of traders travel in and out of the city center each day (Mitullah, 2003: 17). As described in the following sections, the specific accessibility needs for MSE sectors are generally related to location, while cross-cutting accessibility needs are more related to the availability of accessible, affordable and efficient public transport services.

Accessibility Needs – Informal Trading, Services & Manufacturing Sectors. Cluster-based manufacturing MSEs are often located beyond the homes of their owners, with many located near city and regional transport nodes in order to access a wider customer base, which reflects Gulyani and Talukdar's (2010) finding that MSEs

whose owners operate outside their slum are less likely to be poor. For manufacturers in the dense Gikomba wholesale market and the Kamukunji metalwork cluster, their location close to the Machakos Country Bus Station—which transports individuals and goods to locations throughout Kenya—allows their products to be distributed nationally (Daniels, 2010: 57) (see Figure 5.2). An estimated 80 percent of wheelbarrows in Kenya, for example, are manufactured in the Kamukunji metalwork cluster, which employs an estimated 5,000 artisans in 2,000 informal MSEs, on a site just over 10 hectares in size (Kinyanjui, 2008; Daniels, 2010). The close proximity of MSE worksites to Nairobi's formal industrial quarter also ensures the availability of raw materials needed for manufacturing (Kinyanjui: 2008: 33).

A number of trading markets are also located in close proximity to the Machakos Country Bus Station, which itself is in the same area as the central Nairobi Railway Station (NRS) and the main matatu terminal (Muthurwa), all of which are directly adjacent to Nairobi's Central Business District (CBD). King (1996: 45) argues that “the notion that transport, population density, trade and production should be integrated is powerfully illustrated in this square mile of Nairobi”, due to the dense spatial conglomeration of all these marketing, manufacturing and transport variables in one central location. Other markets in Nairobi are also located along major transport routes (Figure 5.3), reflecting similar locational marketing advantages.

Figure 5.2. Clustered Markets, Informal Production Sites, Transport & Formal Industrial Zone (Map created with data from: Google Earth, 2011; Kinyanjui, 2010: 13; Wiki-mapia.org, 2011)



Given the lack of dedicated and secure MSE trading spaces in Nairobi, there is intense competition for those spaces that do exist, resulting in severe overcrowding (Moyi, et al, 2006: 8-9). Overall, 78 percent of urban MSEs in Kenya still have no access to a dedicated market stall or worksite outside their home, indicating that provision of secure, serviced and adequately-sized markets and worksites in strategic locations (including close to transit nodes and formal industry) remains a critical need (Moyi & Njiraini, 2005: 50).

Accessibility Needs – Informal Urban Agriculture Sector. Informal, smallholder urban agriculture in Nairobi generally takes place in private yards, and in public spaces along roadsides, rivers and railway (see Figure 5.4) (Mwangi & Foeken, 2003). Housing conditions in most slums are far too dense to allow for urban agriculture, so slum-based households engaged in this sector rent plots on public land (informally) or on privately-owned land, often located far from their settlement (Foeken & Mwangi, 2000: 3). There are declining opportunities in this sector due to peri-urban land conversions, and most informal cultivation is technically illegal, resulting in an absence of extension services and consequently low yields (Thujo, 2010: 4; Republic of Kenya, 2007: 27). The government, however, developed the *Draft National Urban and Peri-Urban Agriculture and Livestock Policy* in 2010, with an aim to provide greater support.

For the urban agriculture sector to move beyond functioning primarily as subsistence, survival strategy, critical accessibility needs include: 1) larger parcels of secure land, potentially comprised of sub-divided smallholder plots—which would provide the limited extension services more efficient access to smallholder farmers—and located close to transport corridors linked to residential and marketing areas; and 2) agricultural and livestock processing

facilities and markets at key transport nodes, particularly peri-urban satellite centers (Obudho, 1997: 328).

Accessibility Needs – MSE Cross-Cutting. Despite the recognized importance of production and marketing locations outside slums, residential location also remains important for MSEs. As Gulyani and Talukdar (2010: 1722) argue, “the neighborhood in which entrepreneurs reside determines the nature of their local customer base and their social and economic networks; and its location influences access to markets outside.” Related, residents living in slums that are more easily accessible to outside markets, such as those close to Nairobi’s CBD, have easier access to suppliers and a more income-diverse customer base, while those living in more peripheral locations are at a marketing disadvantage (Gulyani & Talukdar, 2010: 1722). Given the high rates of poverty in Nairobi, coupled with a poorly functioning and unaffordable transport system, residential location can therefore make a crucial difference to an MSE’s operations and profits. Related, there is often an unwillingness of slum residents with insecure tenure to relocate to peri-urban areas, even when there is availability of secure tenure and improved residential infrastructure (Hendricks, 2008: 41).

These residential locational needs, combined inadequate transport systems and secure spaces for MSEs, act as key constraints to the urban poor’s access to and development of more sustainable livelihoods. Centrally-located residences could, however, potentially become less of a critical MSE-accessibility requirement if there was an accessible, affordable and efficient public transport system that would allow the urban poor to access livelihood opportunities further from their home, particularly if combined with increased provision of secure spaces for MSE trading and production in strategic locations.

Figure 5.3. Transport Routes and Informal Markets & Production Sites (Map created with data from: Google Earth, 2011; Spatial Information Design Lab, 2011b; Kinjani, 2010: 13; Wikimapia.org, 2011)

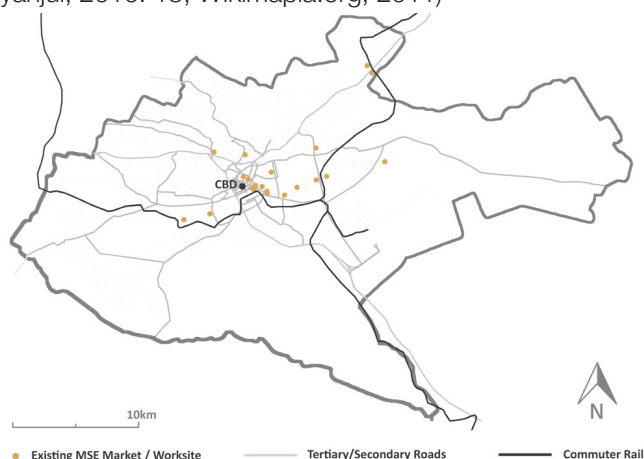


Figure 5.4. Informal Agriculture, Informal Markets & Railway Land (Hagans, 2011)



Beyond providing access to livelihood opportunities, transport also facilitates the movement of resources and goods necessary for livelihood activities. Goods from wholesale markets, for example, are often transported via passenger matatus to markets and home-based MSEs (Figure 5.5) (Key Informant Interview, 2011). While sellers of agricultural produce generally utilize intermediary traders that have private transport, the sellers complain of high-costs of transport, which could potentially be reduced if there was less traffic congestion on major road corridors that connect markets with peri-urban production areas (Republic of Kenya, 2010a: 6; Muraya, 2006: 138).

In terms of scheduling, transport of goods occurs at all times of the day, though transport of goods from wholesale markets to trading markets is generally heaviest early in the morning (5-6am), which also corresponds with the daily start of the city's trading activities (Key Informant Interview, 2011; Mitullah, 2004: 8). Affordable transport that facilitates movement of both traders and goods, particularly early in the morning (when markets open), and at night (when markets close), are therefore recommended. As Sohail (2004: 13) notes, increased informal sector participation throughout much of the developing world has also resulted in "[livelihood] diversification to reduce the risk of loss of income from one source." Public transport services and an accompanying fare structure that allows for affordable movements between multiple livelihood activities in differing locations, often within the same day, is also recommended to support urban poor livelihood strategies.

5.3 Livelihoods framework – Accessibility needs of Nairobi's urban poor

Utilizing findings from the urban poor situational analysis, as well as the accessibility analysis, the critical MSE-related accessibility needs of the urban poor are organized into the livelihoods framework below (Table 5.1). Given the complex definition of accessibility, the identified needs are diverse. Some needs may be more important than others, in terms of their potential progressive impact on the urban poor, though to determine the exact relationship would require a cost-benefit analysis that is beyond the scope of this paper. Importantly, what the livelihoods framework does allow for is a subsequent comparison of the urban poor's accessibility needs with the potential distributive impacts of Nairobi's proposed public transport and land-use plans (Chapter 7).

Figure 5.5. Loading of Goods onto a Matatu (Hagans, 2011)



Table 5.1. Livelihoods Framework: Accessibility Needs of Nairobi's Urban Poor

Asset	Accessibility Needs
Human Capital	<ul style="list-style-type: none"> - Accessible, affordable and efficient public transport services linking residential areas where the urban poor live (or could live), with livelihood opportunities, thereby allowing more time for productive activities. - Public transport schedules and fare structures attuned to the travel behavior and needs of the urban poor, including facilitating multiple trips per day.
Social & Political Capital	<ul style="list-style-type: none"> - Secure MSE marketing and production sites, with adequate space to allow for enterprise clustering, without overcrowding. - Clustered urban agriculture plots, with security of tenure and provision of extension.
Physical Capital	<ul style="list-style-type: none"> - Improved security of tenure at residential locations, with improved infrastructure provision. - Increased number of secure spaces for MSE trading and production, in strategic and accessible locations (including near formal industry and transit nodes), with improved infrastructure provision. - Accessible, affordable and efficient transport services, which accommodates movement of certain goods.
Natural Capital	<ul style="list-style-type: none"> - Improved security of tenure for urban agriculture and livestock cultivation/production spaces, to protect against land speculation as peri-urban areas become more accessible. - Improved land delivery mechanisms for urban agriculture in accessible locations.
Financial Capital	<ul style="list-style-type: none"> - Access to financial capital not examined specifically in this working paper

6. Key objectives of Nairobi's Renewed Spatial Planning

While the Government of Kenya's renewal of urban planning frameworks presents a unique opportunity to address the accessibility needs of Nairobi's urban poor, the risks of splintering urbanism are also present. In order to determine whether poverty reduction objectives are substantially incorporated in Nairobi's integrated land-use and transport plans, this chapter first attempts to identify the key variables influencing Nairobi's urban planning, including Foreign Direct Investment (FDI) trends in Eastern Africa and Kenya, and the impact of Nairobi's transport situation on these trends. This chapter then examines the positioning of Nairobi's spatial plans, to determine whether they are primarily focused on attracting FDI, or whether there is also substantive incorporation of poverty reduction objectives.

6.1 Increased competition for FDI in East Africa

Nairobi is considered a regional city in the global city hierarchy, given its function as the “commercial, industrial, financial, educational and communication hub for Eastern and Central Africa” (Otisu & Owusu, 2008: 153). Regional cities have similar functions as world cities, but within a more restricted geographic region (Rakodi, 1998: 329). Nairobi also hosts the global headquarters of the United Nations Environment Program and the United Nations Human Settlement Program, enabling Nairobi to “amass one of the highest concentrations of secretariats of international organizations in Africa, if not the world” (Otisu & Owusu, 2008: 153). Writing in 1992, Simon (p. 89) argued that “without this international administrative element and the associated business service sector ... Nairobi would have no potential at all to emerge as a future world city.”

In the new millennium, however, even Nairobi's regional city status appears to be eroding. FDI inflows to Kenya, as a percentage of inflows to the East African Community (EAC)² have fallen significantly over the past three decades, declining from a total of 54 percent between 1980 and 1989, to just 15 percent between 2000 and 2009 (UNCTAD, 2011). Both Uganda and Tanzania have overtaken Kenya in attracting regional FDI inflows, particularly in the last decade (Figure 6.1), with Kenyan firms “increasingly relocating to Uganda and Tanzania, implying that Kenya is losing its competitiveness to neighboring countries” (KIPPR, 2006a). If Kenya had maintained the same regional dominance as it did during the 1980s, it would have received an additional

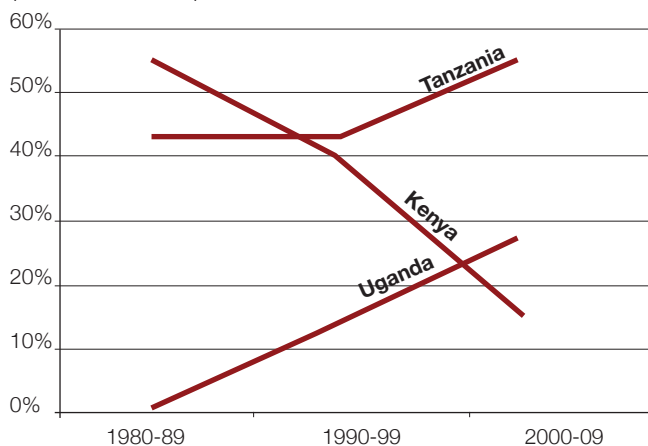
US\$3.22 billion in FDI inflows between 2000 and 2009, signifying the financial incentive Kenya has to reclaim its regional economic dominance (UNCTAD, 2011).

Reclamation of regional dominance in attracting FDI is a particularly strong policy driver, considering opportunities associated with new African trade blocks that have the potential for attracting investment from multi-national firms aiming to serve regional African markets (Juma, 2011b). The EAC common market protocol, signed in July 2010, will allow for free movement of goods, capital, labor and services across member states, while the planned free trade zone between the EAC, the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA), signifies an acceleration of regional trade and market opportunities (Olingo, 2011a; Mail and Guardian, 2011). There is the risk, however, that new investment opportunities will be lost to regional competitors, unless Kenya can re-establish its competitive advantage.

6.2 Link between Kenya's reduced competitiveness and inadequate public transport

Inadequate public transport has emerged as one of the key factors reducing Nairobi's, and therefore Kenya's, regional

Figure 6.1. FDI Inflows to Kenya, Tanzania and Uganda, as % of decade inflows to the East African Community (UNCTAD, 2011)



competitiveness. In a 2006 Kenyan industry survey, for example, it was found that amongst the most important factors negatively impacting competitiveness—which included political instability, corruption, and an ineffective bureaucracy—was the lack of adequate infrastructure (including public transport) (KIPPRA, 2006a). Related, a 2010 survey of 56 firms operating in NMR identified unreliable infrastructure (including transport) as a key reason for reduced FDI inflows (Kinuthia, 2010).

The perception that Nairobi's inadequate transport systems are hindering the country's economic development appears to be grounded in reality, primarily due to increasing traffic congestion as a result of the inefficiency of the matatu transport system, and the continued concentration of economic activities in central Nairobi along with increasing peri-urban residential growth and private motorization that causes congestion along main road corridors (Sclar, 2009: 8; AFDB, 2007: 7). The Government of Kenya estimates that the economic impacts of traffic congestion in Nairobi, measured in the costs of petrol alone, amount to KSH75 million (US\$833,000) per day (Republic of Kenya, 2007: 42). In a review 16 major traffic intersections in Nairobi conducted by the Kenya Institute for Public Policy Research and Analysis, congestion at these intersections was calculated as reducing Kenya's annual GDP by 1.79 percent (KIPPRA, 2006b).

Time devoted to daily commuting, estimated at an average of 90 minutes per day for Nairobi residents, and 2.5 hours per day specifically for matatu users, is predicted to worsen further if existing conditions are not changed, with peak morning traffic flows into the CBD projected to fall from an already low 8.3km per hour to only 2.1km per hour in 2025 (KIPPRA, 2006b: 4; Howe & Bryceson, 2000: 63; Gonzales et al, 2009: 19). Related, the Government of Kenya suggests that Nairobi's ascent into a "World Class African Metropolis" will not occur "unless traffic congestion is arrested", signaling that the 'world city' paradigm has substantial influence on Nairobi's spatial and transport planning processes (Republic of Kenya, 2010b: 2).

6.3 Impact of competition for FDI on Kenya's planning frameworks

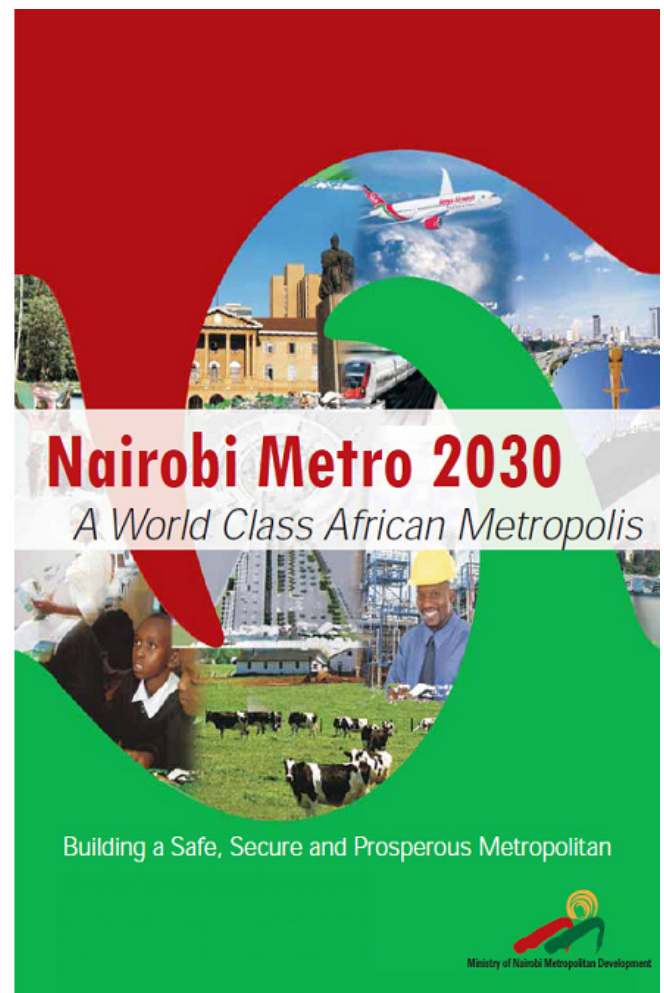
In 2007, the Government of Kenya released *Kenya Vision 2030*, a visioning framework to guide future social, economic and spatial planning in the country, with a goal of generating 10 percent annual growth in GDP. In 2008, the government established the Ministry of Nairobi Metropolitan Development (MoNMD), which subsequently released a specific visioning document for the city (aligned with *Kenya Vision 2030*), entitled *Nairobi Metro 2030: A World Class African Metropolis* (Figure 6.2).

MoNMD's quest to attain world city status—as indicated in the title of their planning document—is unsurprising, given

the competition for FDI inflows noted earlier. In 2010, MoNMD contracted Consulting Engineering Services (CES), an India-based firm, to develop a new spatial plan for Nairobi, which will replace the 1973 Master Plan that lapsed in 2000. The Ministry of Transport had previously chosen CES (in 2009) to undertake the *Mass Rapid Transit Feasibility Study* for Nairobi, thereby underscoring the importance of improved transport provision in Nairobi's new planning frameworks.

In April 2011, MoNMD released the CES-prepared *Nairobi Draft Spatial Plan*. With Nairobi continuing its dominant status in the national economy, the plan predicts that the "NMR economy will have to be stimulated to grow by 15 percent per year" in order for Kenya to achieve GDP growth rates of 10 percent per year (CES, 2011b: 3.5). To achieve this growth, the draft proposes that Nairobi develop into a "world class city in facilities and convenience", including through the development of "world class" physical and social infrastructure that will enable the city to be competitive with other international cities in attracting investment (CES, 2011b: 3.5). New transport infrastructure and public trans-

Figure 6.2. Nairobi Metro 2030 Cover Page (Republic of Kenya, 2008)



port systems form a substantial portion of the plan, and are regarded as crucial for “ensuring efficient functioning of the economy (CES, 2011b: 3.5). Transport planning, including planning for new public transport systems, is therefore inextricably linked to the objective of transforming Nairobi into a competitive, efficient and world-class city.

Upgraded and expanded transport is also determined necessary for supporting the future spatial structure of NMR, which is proposed as a decongested, polycentric urban form, with industrial activities shifted from the area adjacent to the CBD to sub-regional centers in NMR, and Nairobi functioning instead as an administrative zone supported by “specialized and world class facilities” (CES, 2011b: 3.5). The plan therefore calls for the development of a multimodal transport system in NMR connecting these various centers, including through an expanded road network, and a 170km mass rapid transit (MRT) system consisting of Bus Rapid Transit (BRT), Light Rail Transit (LRT), (heavy) metro rail, and an upgraded and expanded commuter rail line (Figure 6.3) (CES, 2011a: 7.1).

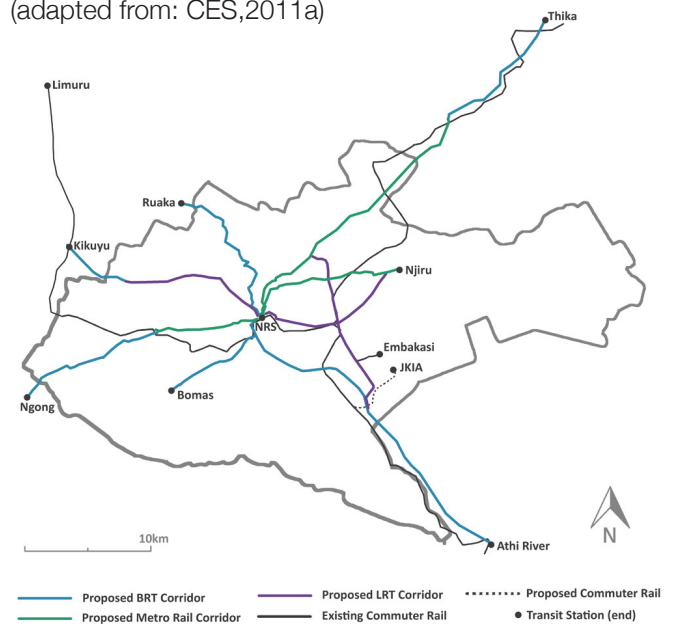
In the quest to achieve world city status, the visioning frameworks and spatial plan have focused comparatively little attention on the needs of the informal sector. The Society for International Development notes, for example, that Kenya Vision 2030 expects nearly all informal sector growth to be formalized, without providing a “credible process or a set of reasons” of why such a shift would occur, particularly given that, as mentioned, the informal sector currently produces 90 percent of all new jobs annually in Nairobi (SID, 2010: 13). The Nairobi Metro 2030 vision operates with a similar paradigm, stating that “Vision 2030 aims to raise earnings by giving the large informal sector opportunities to transform itself into a part of the formal sector that is efficient, multi-tiered, diversified in product range and innovative” (Republic of Kenya, 2009c: 48). *The Nairobi Draft Spatial Plan*, informed by the visioning frameworks, therefore states that the number of formally-registered MSEs in the city should increase by at least 25 percent per annum (CES, 2011b: 7.16).

Perhaps part of this disconnect is due to the limited input from the urban poor into these planning documents. The *MRT Feasibility Study*, as already noted, failed to substantively identify accessibility needs specific to the urban poor in its travel survey. The *Nairobi Draft Spatial Plan* notes that 65 stakeholders were interviewed, with 22 stakeholder organizations completing a questionnaire. The list of stakeholders consulted is dominated by ministries, parastatals, financial institutions and local authorities (CES, 2011b: Annex 4.1). While input from urban authorities is important, conspicuously absent are civil

society and community-based organizations that work with, or are comprised of, the urban poor, such as Pamoja Trust (supports community-led slum upgrading), Muungano wa Wanavijiji (a national community-based savings federation), the National Cooperative Housing Union (NACHU - a national not-for-profit microfinance institution supporting housing delivery for the urban poor through cooperative societies), or MSE associations, such as the Kenya National Alliance of Street Vendors and Informal Traders. The lack of participation from and input of the urban poor suggests that institutional mechanisms to improve access to livelihood assets are not adequately addressed in Nairobi’s new spatial plans.

Moreover, the focus on creating a world-class and decongested city through infrastructure-supported polycentric development, along with an emphasis on formalization of MSEs and a lack of participation from the urban poor, echoes major elements of the 1973 Master Plan that resulted in regressive equity impacts. In particular, there is the risk that prioritization of developing ‘world class’ infrastructure—just as the 1973 Master Plan prioritized ‘modern’ infrastructure to the detriment of informal settlements and livelihoods—will not incorporate the accessibility needs of the majority of the city’s residents, and not adequately mitigate the potentially regressive impacts that public transport can have on the urban poor and their livelihoods. With this recognized risk, a more detailed examination of potential distributive impacts associated with Nairobi’s renewed spatial and transport planning is necessary.

Figure 6.3. Proposed Mass Rapid Transit (MRT) System (adapted from: CES,2011 a)



NOTES TO CHAPTER 6

2. The EAC, resurrected in 2000, consists of Burundi, Kenya, Rwanda, Tanzania and Uganda

7. Potential distributive impacts of Nairobi's planning on urban poor accessibility needs

Drawing on information from the Nairobi Draft Spatial Plan and the final *Mass Rapid Transit (MRT) Feasibility Study*, this chapter explores the potential distributive impacts of Nairobi's proposed integrated public transport and land-use plans on the city's urban poor population. Informed by the adapted livelihoods framework (Chapter 3), along with the identified accessibility needs of the urban poor in Nairobi (Chapter 5), the analysis of distributive impacts will focus specifically on: 1) the responsiveness of Nairobi's recent planning to the residential and livelihood locational needs of the urban poor; 2) the potential impacts associated with MRT construction and increased locational accessibility; and 3) the urban poor's potential to access and utilize the proposed MRT systems to support improved livelihood strategies.

7.1 Residential and livelihood location delivery framework

As described in Chapter 4, current housing conditions for the urban poor in Nairobi are characterized by severe deprivations, compounded by continued population growth. By 2030, NMR's population is anticipated to increase from 6.65 million to 10-15 million, necessitating approximately one million new dwellings (CES, 2011b: 12.2). For land and housing delivery to be more responsive to the needs of the urban poor in the city, both the World Bank and the Center on Housing Rights and Evictions stress the need for a negotiated, city-wide settlement that significantly reduces or eliminates control of slum housing by absentee structure owners (World Bank, 2006: 71; COHRE, 2007: 26). Subsequent improvements in living conditions requires simultaneous slum upgrading and institution-building, including more effective frameworks for the delivery of land and housing to the increasing urban poor population (Gulyani & Bassett, 2007: 487). Important to such processes would be the substantive support and involvement of civil society in scaling-up community-based slum upgrading and housing delivery.

Judged on the above criteria, the Nairobi Draft Spatial Plan is inadequate as a guiding framework. The plan, for example, does not mention the significant and complex challenge of absentee structure owners in slums, or how planning could respond to such a challenge. In general, the framework shows a tension between bottom-up and top-down approaches. In terms of housing financing,

the plan suggests that micro-finance and self-help groups could play a key role, along with government subsidies, while in other sections it stipulates that "the concept of land as a resource should be adopted to develop such accommodation with private sector participation and investment", and that FDI in the sector should be encouraged (CES, 2011b: 12.13 – 12.18). Similarly, the plan notes that government, civil society and community-based organizations should collaborate in slum upgrading and housing delivery, while in other instances it stipulates that housing for the urban poor should move from horizontal to vertical development, going as far to suggest housing templates and floorplans for upgraded slums and for low-income housing estates controlled by Nairobi City Council, without specifying how communities and households could be involved in housing design processes (CES, 2011b: 12.6 – 12.13). The suggested designs make no provision for MSE spaces, overlooking the importance of home-based MSEs to many urban poor households.

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More broadly, the *Nairobi Draft Spatial Plan* overlooks the critical land delivery needs of MSEs. There is no men-

tion, for example, of the importance of existing trading and wholesale markets or clustered worksites in the city, such as Gikomba or Kamukunji; the important link between MSE trading, production and transport; or how such structures could be improved upon and replicated to support more sustainable livelihoods for the urban poor. Consequently, the plan does not suggest provision of new MSE market spaces or production sites in the city, or in planned secondary industrial centers, a major oversight considering the historically inadequate delivery of such spaces in Nairobi. Similarly, with regards to agriculture, while the plan notes that “rich agricultural land is being used for urban development”, it only specifically mentions coffee and tea plantations, with no recognition of the importance of small-scale agriculture to a substantial number of the urban poor in NMR, or how such livelihood strategies could be protected and supported (CES, 2011b: 4.21, 14.9).

With projected increased spatial growth in NMR accompanied by economic and infrastructural development, the impact of an inadequate land and housing delivery framework for the urban poor and their MSEs should be considered regressive, in that the mechanisms to protect the poor from continued exploitation by slum landlords, increased land speculation, and new public infrastructure-induced displacements are all absent. Additionally, the lack of consideration for the location and infrastructural needs of MSEs in the city’s proposed new master plan is also regressive, in that it appears to continue historic exclusionary processes at the expense of promoting ‘modern’ development. With recognition of these regressive impact risks, the next section explores the potential impacts on the urban poor resulting from increased locational accessibility associated with expanded public transport systems.

7.2 Potential impacts from increased locational accessibility & MRT construction

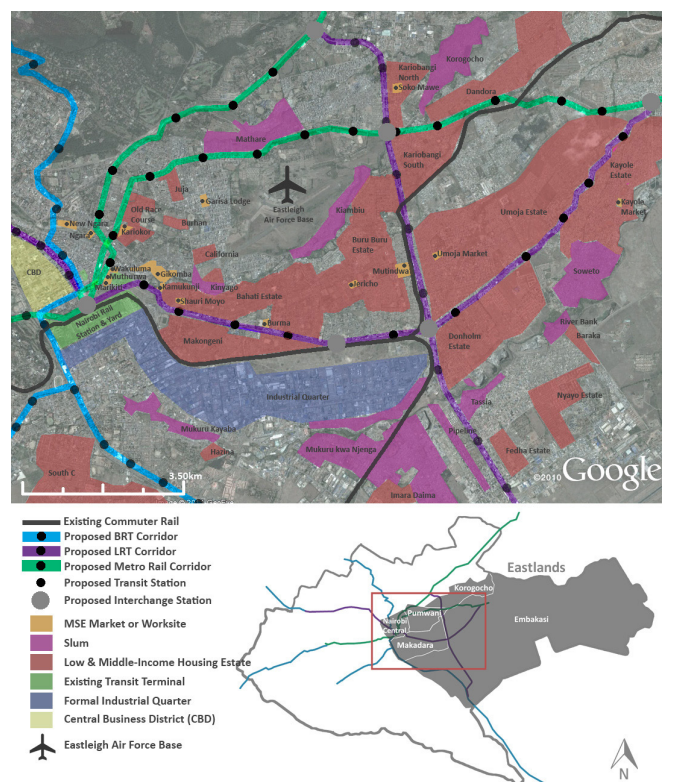
The MRT Feasibility Study devotes only one sentence to the displacement risks associated with land speculation along upgraded public transport corridors (CES, 2011a: 9.36). Even this limited recognition, however, does not mention impacts specific to the urban poor, nor are any mitigation measures suggested. While it is not possible within the word limits of this working paper to examine in detail the potential distributive impacts on the urban poor for all locations in NMR, the following section analyzes potential impacts on the administrative divisions of Embakasi, Korogocho, Madakara and Pumwani—an area generally referred to as Eastlands, immediately adjacent to the CBD—as a demonstrative example.

Potential accessibility-related distributive impacts in Eastlands. Though the western portion of Eastlands is in close proximity to the CBD and the industrial quarter,

it has some of the highest poverty and population density rates in Nairobi, reflecting historical processes of racial and socio-economic segregation that resulted in many of the city’s poor residing in this area, combined with the continuing need for the urban poor to live within walking distance to livelihood opportunities (Republic of Kenya, 2007: 14; Ndeg’e et al, 2003: 63). The new MRT system is proposed to pass through, and encircle sections of Eastlands that contain the majority of Nairobi’s formally recognized MSE markets and worksites, as well as a concentration of slums and low to lower middle-income housing estates (Figure 7.1).

The threat of splintering urbanism, in the form of gentrification and displacement, is high in Eastlands, given that the spatial plan calls for significantly redeveloping sections of the area, with the objective of extending the CBD, as well as the larger goal of redeveloping Nairobi as a ‘world class’ administrative center. The plan regards public transport as a potential catalyst for the aforementioned development, with the *MRT Feasibility Study* calling for “redevelopment plans for all land areas up to one kilometer on either side of the [public transport] corridors/lines, especially around the proposed nodal terminals and rail stations” (CES, 2011a: 5.24). Related, the Draft Spatial Plan suggests that interchange terminals should receive “special design interven-

Figure 7.1. Existing Land-Use & Proposed Transit Corridors in Eastlands (Map created with data from: Google Earth, 2011; Kinyanjui, 2010: 13; CES, 2011a; Wikimapia.org, 2011)



tions” that promote “urban density and use intensity [for] people to work, live, shop and enjoy themselves ... [and] economic vitality and competitiveness, consisting of significant development potential and strong economic anchors”, with accompanying imagery of transit stations from Dubai (Figure 7.2) (CES, 2011b: 17.14).

There is no mention, however, for how the proposed redevelopment would be beneficial to urban poor residents in the area, such as through the incorporation of additional MSE marketing and production spaces in close proximity to transit terminals, or through redevelopment plans also functioning as a catalyst for inclusive upgrading of nearby slums, suggesting that informal livelihoods and low-income settlements do not fit within planned redevelopment economic objectives and imagery.

As part of suggested redevelopment in the area, the plans also propose to transform the Nairobi Railway Station into the city’s central MRT terminal, with accompanying real estate that consists of “high value commercial activities like shops, malls, supermarkets, offices, hotels, information technology parks, international business centers and cultural institutions.” (Figure 7.3) (CES, 2011a: 5.18). The plan further proposes that adjoining areas be redeveloped into a “high-intensity commercial cum office-use zone”, with no mention to where the existing trading markets (Muthurwa and Marikiti), the Muthurwa Matatu Station and sections of the formal industrial zone will be relocated (Figure 7.4).

A similar disregard for the accessibility needs of the urban poor is replicated in the accompanying plans to redevelop the Eastleigh Airforce Base and areas adjacent to Nairobi River (where slums, low-income estates and the Gikomba wholesale market are located), with accompanying imagery that seems to exclude any form of informality. Plans for the river front redevelopment are geared particularly towards investment, with the spatial plan suggesting that “a renewed waterfront offers investors a promising return on capital” (CES, 2011b: 17.30). Private investment is also proposed as key for the redevelopment of low-income housing estates in Eastlands. The Nairobi City Council announced plans in March 2011 to demolish 25 city-run estates in the area through a “private-sector driven upgrade plan” estimated to cost between KSH60 and KSH80 billion (US\$627 – US\$888 million) (Juma, 2011a). Together, this information illustrates the risk that residential and livelihood patterns that do not conform to ‘world class’ development will be excluded and displaced from Eastlands—including major markets such as Gikomba that supply traders and resellers throughout Kenya.

Potential Construction-related Distributive Impacts in Eastlands. The MRT Feasibility Study notes that there are significant land-use constraints in Nairobi that would hinder introduction of at-grade public transport services;

therefore, BRT, LRT and metro transit are proposed primarily as elevated corridors over existing roads, in order to reduce the need for widespread road expansion (CES, 2011a: 7.6). Similarly, the initial commuter rail upgrade plans prioritizes improving services on existing lines (with

Figure 7.2. Dubai Transit Station Precedent in Nairobi’s Spatial Plan (CES, 2011b: 17.17)

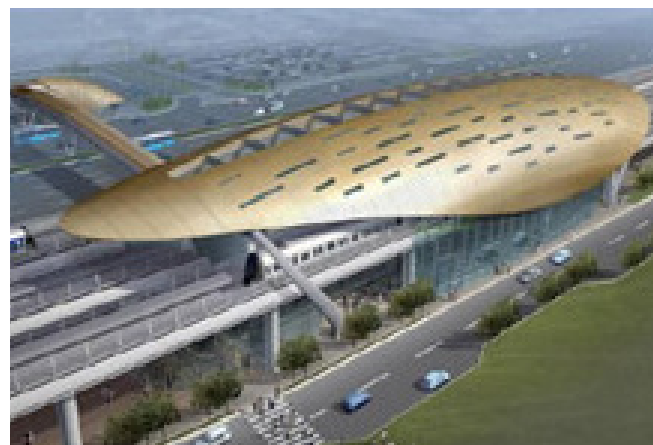
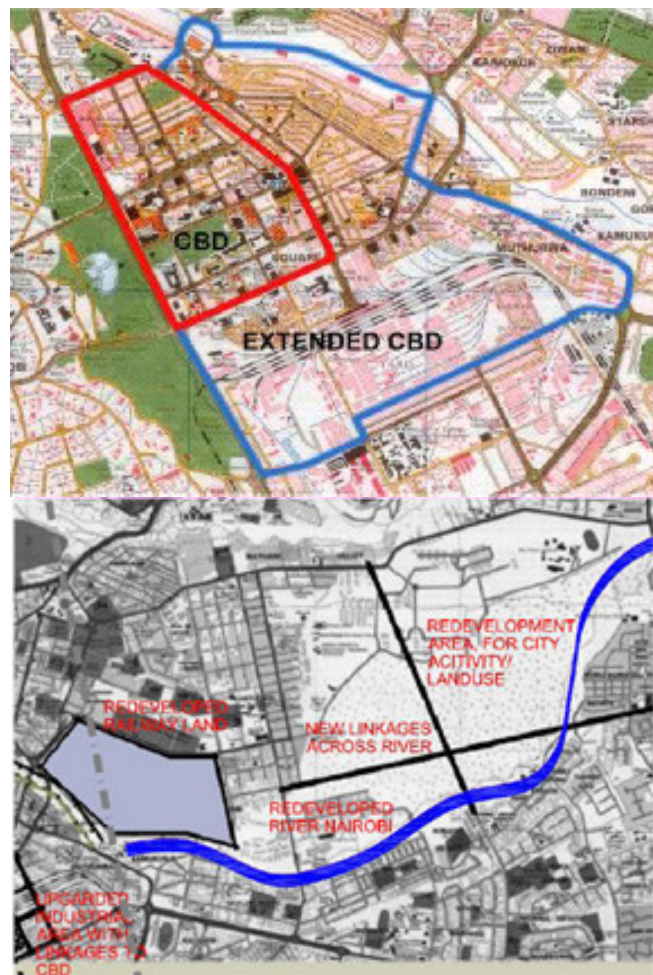


Figure 7.3. Published Plans for CBD Expansion & Nairobi River Redevelopment in Eastlands (CES, 2011b: 17.19, 17.23)



the exception of the new rail link to Jomo Kenyatta International Airport) over the construction of new lines. While efforts to limit road expansion are commendable (even if they are based solely on costs associated with land acquisition), there are, nonetheless, potential construction-related regressive impacts associated with proposed plans.

In the aforementioned highlighted area of Eastlands, major road expansion associated with MRT construction is proposed for three locations: a new road from NRS to Landies Road; and expansion of Juja and Spine roads from two lanes to four lanes (Figure 7.5) (CES, 2011a: 8.50 – 8.55). Road expansion could potentially impact a number of locations important for the urban poor. For example, the new transit line linking NRS to Landies Road could displace markets and a matatu transit terminal (this area, as already mentioned, is also targeted for commercial redevelopment). Along Juja Road, there is the potential for displacement of residences in Mathare slum, unless the land for Eastleigh Airforce Base is used for road expansion. While detailed plans for the commuter rail upgrade are not publicly available, the authorities already requested that residents living in slums along railway reserves (30 meters on each side of the railway line) move in order to allow for upgrading to commence (Nation Reporter, 2001). Clearing of railway reserves would necessitate the demolition of portions of Mutindwa Market, as well as residences in Mukuru kwa Njenga slum. Given the high population density in Nairobi’s slums, clearing of railway reserves will displace a large number of residents beyond Eastlands. Displacement estimates in Kibera alone (west of the CBD) range from 10,000 to 108,000 (Republic of Kenya, 2006: 38; Mwau, 2011).

While justifications could be made for transport-related displacements based on broader economic efficiency criteria, vertically equitable transport planning would nonetheless incorporate adequate mitigation measures, as well as substantial incorporation of location and livelihood considerations in resettlement plans, along with compensation not based solely on possession of legal title. Unfortunately, such measures are seemingly lacking in Nairobi’s planning. While the MRT feasibility study (2011a: 9.32) notes that displacement of businesses “would cause negative impacts on the livelihoods of people”, it offers no mitigation measures, nor does it mention livelihood impacts associated with residential resettlements. With regards to clearing of commuter rail reserves, the Ministry of Transport has indicated in announcements that only ‘genuine’ residents will be compensated, a worrying sign given that the vast majority of slum-dwellers in Nairobi are renters that lack secure tenure (Mwau, 2011). Together, this information indicates that there are significant risks that construction-related displacements of the poor may occur without substantive consideration of livelihood accessibility needs or adequate compensation.

Figure 7.4. Current Land-use vs. Proposed Plans in Eastlands (Map created with data from: Google Earth, 2011; Kinyanjui, 2010: 13; CES, 2011b: 17.19 – 17.23; Wikimapia.org).

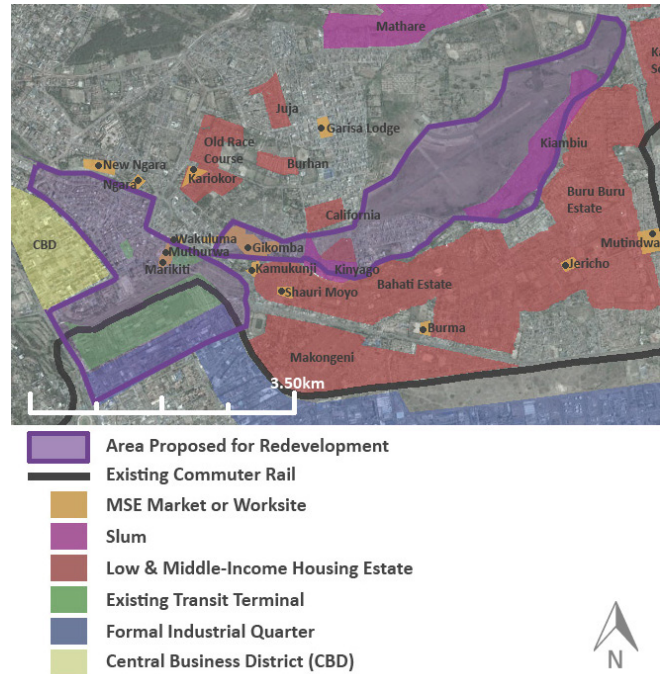
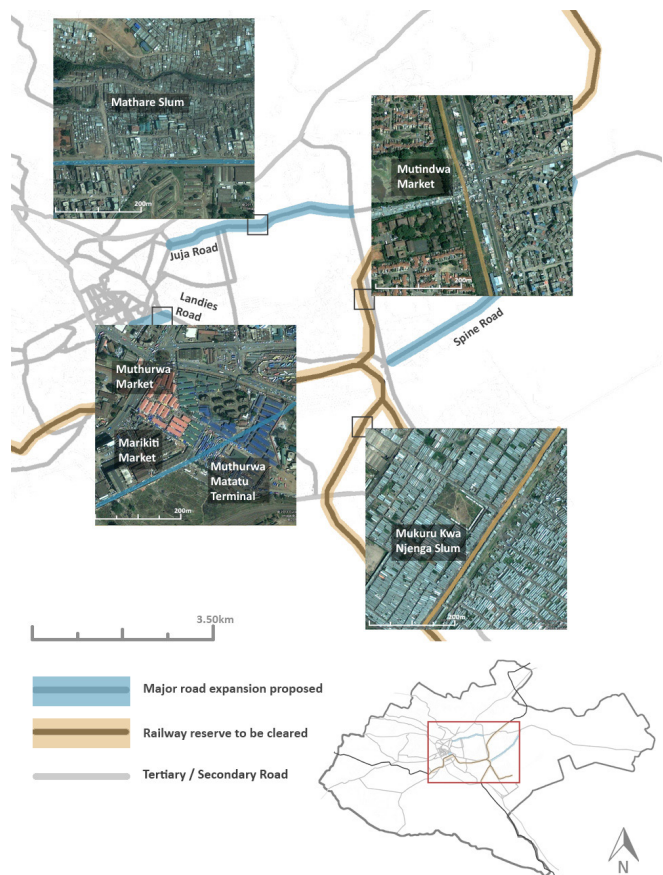


Figure 7.5. Proposed MRT Corridors & Risk of Construction-related Displacement in Eastlands (Map created with data from: Google Earth, 2011; Spatial Information Design Lab, 2008b; CES, 2011a: 8.39 – 8.65)



Potential Impacts beyond Eastlands. While there is great risk of regressive impacts in Eastlands due to the concentration of the urban poor in a central location of Nairobi targeted for redevelopment, the risks are similar in other areas of Nairobi, with the MRT system passing in close proximity (or in some cases directly through) slums and informal markets (Figure 7.6). Improved accessibility along these corridors will also likely result in land value rises, putting pressure on land owners to redevelop or sell plots that may be important residential and/or livelihood locations for the urban poor. Similarly, increased locational accessibility in peri-urban NMR may also further stimulate speculative development, thereby leading to greater exclusion of the poor and disruption of local livelihoods, particularly if there is no substantive pro-poor land and housing delivery framework at the metropolitan level.

Splintering urbanism, however, is not only related to displacements, but also the linking of privileged spaces through network infrastructure that results in further socio-economic fragmentation within a specific spatial context. Such risks are evident in Nairobi, with property specialists and land economists anticipating that due to the introduction of MRT, “rents will increase in satellite towns where more people will flock for residential and commercial purposes”, with the greatest potential for profits in construction of residential “middle-market villas” (Wahome, 2011). The development of public transport systems therefore seems particularly beneficial to middle-income residents, with the system linking expanding peripheral residential develop-

ments to Nairobi’s CBD that is increasingly geared toward ‘world city’ administrative economic functions. An analysis is therefore needed of whether the urban poor are also at risk for exclusion from the proposed MRT system itself.

7.3 Assessment of urban poor’s access to the proposed MRT system

As noted, an accessible, affordable and efficient public transport system would be beneficial to the urban poor in Nairobi, by reducing travel time and costs, thereby allowing more time for productive activities and the ability to access livelihoods further from households. Related, equitable public transport could allow the poor to move further from congested, unhealthy and poorly-served slums to other locations in NMR, while maintaining access to livelihood opportunities and assets. The MRT Feasibility Study (2011a: 7.2) notes the need to balance the need for a high-quality service that would promote modal shifts (from personal vehicle use to public transport), while also providing affordable services to low-income users.

To determine whether this balance has been sufficiently met, this sections examines whether: 1) the proposed service is accessible to locations where the urban poor live or could live; 2) the service has a fare structure affordable for the urban poor; and 3) the service schedules and goods transport policy is attuned to the urban poor’s livelihood needs.

Figure 7.6. Proposed MRT Corridors, Existing Slums, and Informal Market & Production Sites (Map created with data from: Google Earth, 2011; CES, 2011a; Republic of Kenya, 2006: 37; Kinyanjui, 2010: 13; Wikimapia.org, 2011)

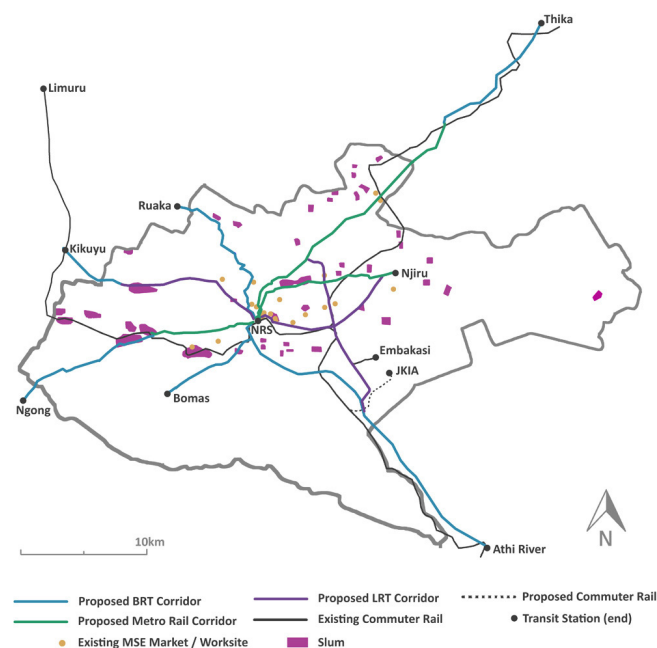
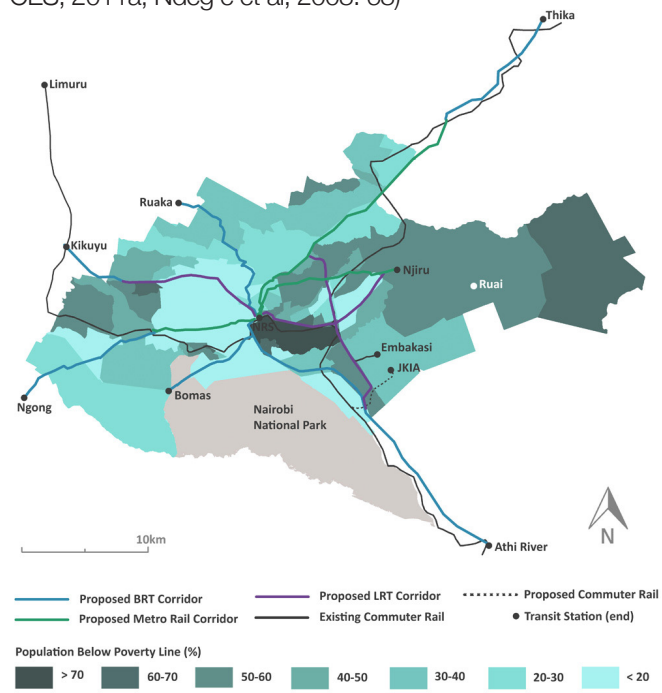


Figure 7.7. Proposed MRT Corridors & Ward-Level Poverty Incidence (Map created with data from: Google Earth, 2011; CES, 2011a; Ndeg’e et al, 2003: 63)



Physical access to proposed public transport. To determine whether the proposed public transport system is locationally accessible to the urban poor, the MRT corridors are overlaid onto a ward-level poverty incidence map of Nairobi city in Figure 7.7. While a poverty map of NMR would have been more useful for a metropolitan-wide analysis, spatial data is unavailable at that level. Due to the historical processes of racial and socio-economic segregation in Nairobi, the wards with the highest levels of poverty are located in Eastern Nairobi, as well as slums in Western Nairobi (at the periphery of areas zoned for European residences during the colonial period). What is clear immediately is that a large portion of Eastern Nairobi remains unserved by MRT, with potential extension to Ruai only “if the traffic justifies” (CES, 2011a: 8.52). The building density map (Figure 7.8) shows low levels of built environment in peripheral Eastern Nairobi, indicating that there could be a strategic opportunity for integrated pro-poor land delivery and public transport planning that Nairobi’s renewed spatial planning has overlooked.

Nonetheless, the system does serve other areas where the urban poor are concentrated in Nairobi, including the central area to a large extent, as well as the aforementioned slums in Western Nairobi, particularly when accounting for planned feeder bus services that are to bring transit users from residential locations to MRT corridors (CES, 2011a: 7.52). The proposed MRT corridors also appear to reach sections of Nairobi where there is the

highest population density (based on building density), while also improving public transport provision to areas of NMR anticipated for further urbanization (Figure 7.9).

Fare Structure. With recognition that the proposed MRT corridors are locationally accessible to the areas where the majority of the urban poor currently live, an analysis of the proposed fare structure is necessary to determine whether the poor could actually utilize the proposed services, and whether these services offer savings when compared to current public transport options. With limited regulation of matatu services, current fares are difficult to determine. At the time of this writing (2011), there were reports, for example, that matatus from the CBD to Eastleigh charge KSH50 for the four kilometer trip, while fares to Kitengela (30 kilometers from the CBD) charge KSH70, a small fare increase for a trip more than six times the distance (Aluanga, 2011). Matatu fares also change depending on the time of day, with fares from Kawangware to the CBD ranging from KSH20 to KSH60 depending on whether a passenger is traveling during peak or off-peak hours (Aluanga, 2011). Peak fares are also directionally targeted, with peak morning fares from CBD to Githurai only KSH10, while peak morning fares from Githurai to CBD are KSH100, which again highlight the concentration of livelihood opportunities in Nairobi’s CBD (Aluanga, 2011).

The *MRT Feasibility Study’s* proposed fare target of KSH2 to KSH2.5 per kilometer for Bus Rapid Transit (BRT) ser-

Figure 7.8. Proposed MRT Corridors & Nairobi Building Density (Map created with data from: Google Earth, 2011; CES 2011a; Spatial Information Design Lab, 2008a)

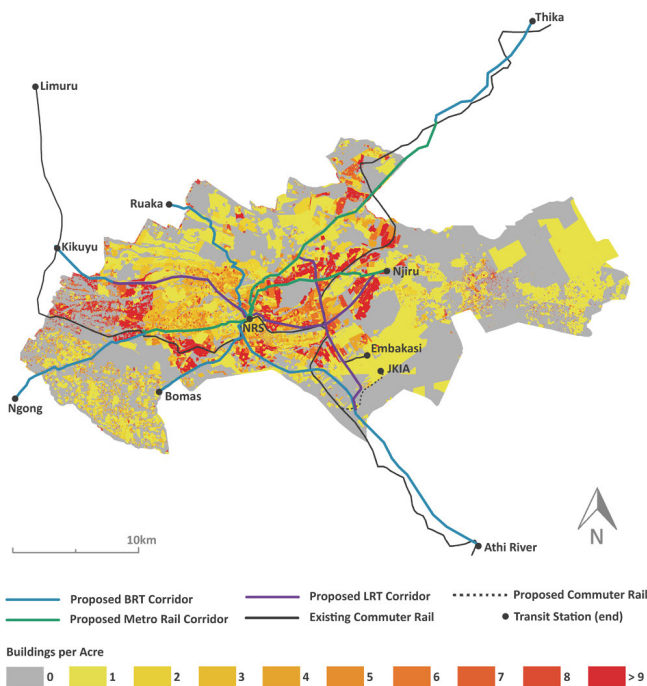
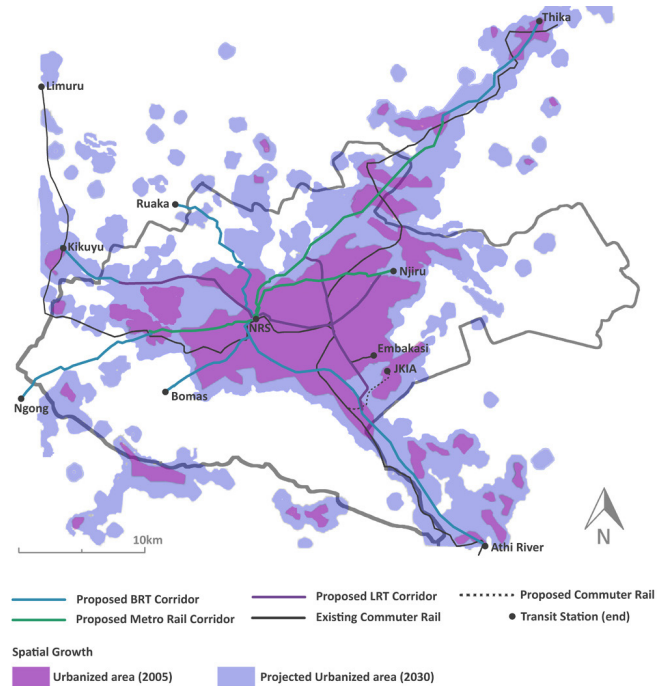


Figure 7.9. Proposed MRT Corridors & Projected Nairobi Urbanization (Map created with data from: Google Earth, 2011; CES, 2011a; Mundia & Murayama, 2010: 268)



vices would therefore likely provide more affordable public transport service to Nairobi's residents, should BRT services be locationally accessible to areas where the urban poor reside (CES, 2011a). Based on such a target, the 11.5 kilometer trip from Kawangware to the CBD would have a consistent fare of KSH23 to KSH28, while the 17 kilometer trip from Githurai to the CBD would have a consistent fare of KSH34 to KSH43, both of which would offer significant savings over peak fares currently charged by matatus. However, with seventy-three percent of slum residents living on less than KSH106 per day, such fares targets are still beyond the purchasing power of many of Nairobi's residents (Salon & Gulyani, 2010: 646). The fare structure may also remain prohibitive for livelihood strategies that require multiple trips per day to different locations (as is common with livelihoods in the informal sector), which would necessitate the need for subsidized day passes as a strategy to promote vertical equity through the public transport system.

The proposed MRT system, however, fails to meet the aforementioned fare target along most corridors, due to its choice of transit technology. As shown in Figure 7.7, areas of Nairobi with the highest poverty rates are primarily served by LRT and metro rail services, and partially by commuter rail. Commuter rail fares, currently set at KSH20 per trip, are likely to rise following upgrading and the targeting of services towards private vehicle owners, though the new fare structure is not detailed in the *MRT Feasibility Study* (CES, 2011a: 4.7). LRT and metro rail services, however, are proposed to have a target fare of KSH4 per kilometer, compared to BRT's target fare of KSH2.5 per kilometer. The LRT and metro fare structure would therefore make the MRT system inaccessible to an increased number of residents in Nairobi (particularly for those traveling to central Nairobi), and would represent a significant increase over current off-peak matatu fares. There is also no discussion of whether a single fare would cover integrated feeder bus services and MRT trips; if not, fares to destinations beyond MRT corridors could also rise beyond the level of current peak matatu fares.

The justification for the selection of metro and LRT is based on projected passengers per hour per direction (PPHPD) by 2030, with ranges of 15,000 to 43,000 on corridors selected for the aforementioned MRT technology (CES, 2011a: 8.2). The *MRT Feasibility Study* (2011a: 7.5) indicates that BRT can accommodate a maximum of 20,000 PPHPD, which overlooks advances that have been made in cities such as Bogota and Guangzhou that have BRT systems accommodating 45,000 and 27,000 PPHPD, respectively (Hidalgo & Carrigan, 2010: 286; Fjellstrom, 2010). Given that BRT systems in Nairobi are designed primarily as elevated systems that can be upgraded in the future to LRT or metro, it seems a better option would be to construct elevated BRT systems throughout the city with higher PPHPD capacities and with the proposed target fare of KSH2.5 per kilometer, along with greater

consideration for targeted subsidies, if the system aims to promote poverty reduction through transport.

Service Schedules and Allowance of Goods Transport. The MRT feasibility study does not indicate proposed service schedules, or whether transport of certain goods will be allowed via MRT services. Given the evidence that planning in Nairobi has been designed to project a 'modern' image of the city that excludes informality, there is a risk that transportation of goods from wholesale markets to trading markets, for example, will not be allowed.

7.4 Summary: Transport and land-use planning & urban poor accessibility needs

While integrated land-use and transport planning has the potential to address the accessibility needs of the urban poor, with a broader objective of improving livelihoods and reducing poverty, it is clear from the analysis of Nairobi's planning frameworks that there has been comparatively little incorporation of such an objective. As shown in the livelihoods framework below (Table 7.1), the distributive impacts of the proposed plans in Nairobi are largely regressive, when measured against urban poor accessibility needs under each capital asset category.

Under Human Capital, the proposed MRT system would likely result in a more efficient public transport system that would, in general, reduce commuting times in Nairobi and would be locationally accessible to the greatest concentrations of population in the city. Such benefits and locational access to the system, however, would still largely exclude the urban poor, given that fares would remain unaffordable for many, both through a system design that prioritizes more expensive MRT modes for much of the city, and the lack of substantive consideration for fare subsidies or fare structures attuned to multiple daily trip demands common for MSE participants.

The potential benefits of clustered and networked MSEs, situated under Social Capital, remain unaddressed in the spatial planning frameworks, with almost no mention of the spatial needs of MSEs, either in terms of cluster-based trading and production sites; secure and accessible residential locations supportive of home-based MSEs; or in the provision of accessible and clustered smallholder agricultural plots. In fact, many existing clusters of MSE trading, production and transport—particularly the largest MSE sites located directly adjacent to the CBD—are proposed for redevelopment.

Physical capital needs, in terms of accessible and secure residential locations well-served by infrastructure; accessible, serviced, and secure MSE trading and production sites; and an accessible, affordable and efficient public transport system that allows for the

Table 7.1. Livelihoods Framework: Identified Urban Poor Accessibility Needs & Responsiveness in Nairobi's Spatial Plans

Asset	Identified Accessibility Needs	Nairobi Spatial Planning Responsiveness
Human Capital	Accessible, affordable and efficient public transport services linking residential areas where the urban poor live (or could live), with livelihood opportunities, thereby allowing more time for productive activities.	The proposed system will likely be efficient, and it is locationally accessible to the greatest concentrations of population in Nairobi. However, the system, as designed, would be unaffordable to many of the urban poor, indicating unequal benefits to improvements in travel efficiency in the city.
	Public transport schedules and fare structures attuned to the travel behavior and needs of the urban poor, including facilitating multiple trips per day.	Transport schedules are not detailed in published plans. The fare structure proposed is a flat fare, which may be more affordable than matatus (depending on modal technology), but would still be prohibitive for informal livelihoods that require multiple trips per day. There is no substantive discussion of subsidies targeting the urban poor, or design of fare structures that would allow for multiple, affordable trips per day.
Social & Political Capital	Secure MSE marketing and production sites, with adequate space to allow for enterprise clustering, without overcrowding.	There is no mention of provision of additional MSE trading and production sites, and some existing sites (particularly the MSE trading and production sites close to the CBD) are proposed for redevelopment.
	Accessible clustered urban agriculture plots, with security of tenure and provision of extension.	There is no framework in the spatial plan for delivering new smallholder agricultural plots.
Physical Capital	Improved security of tenure at residential locations, with improved infrastructure provision.	There is a lack of substantive consideration or planning for housing for the urban poor, particularly in addressing critical sectoral challenges. While the plan does make some positive statements about involvement of civil society and communities, such statements are contradicted through top-down housing delivery suggestions. Further, the transport system is not locationally accessible to much of Eastern Nairobi, where it could potentially be integrated with pro-poor land delivery processes.
	Increased number of secure spaces for MSE trading and production, in strategic and accessible locations (including near formal industry and transit nodes), with improved infrastructure provision.	There is no mention of provision of additional MSE marketing and production sites, and some existing sites (particularly those close to the CBD) are proposed for redevelopment. The deconcentration of industry to secondary cities is not accompanied with an analysis of how MSEs (particularly those in the production sector) could be spatially concentrated with formal sector firms, to encourage linkages. Similarly, the development of new transit nodes and terminals throughout the city is not accompanied with proposals to integrate MSE trading facilities at such locations.
	Accessible, affordable and efficient transport services, which accommodates movement of certain goods.	While the proposed system will likely be efficient, it is not locationally accessible to much of Eastern Nairobi, the proposed services remain unaffordable for many of the urban poor, and there is a risk that transport of goods will not be allowed.

Asset	Identified Accessibility Needs	Nairobi Spatial Planning Responsiveness
Natural Capital	Improved security of tenure for accessible urban agriculture and livestock cultivation/production spaces, to protect against land speculation as peri-urban areas become more accessible.	There is no framework in the spatial plan for protecting existing smallholder agricultural plots.
	Improved land delivery mechanisms for urban agriculture in accessible locations.	There is no framework in the spatial plan for delivering new smallholder agricultural plots.
Financial Capital	Access to financial capital not examined specifically in this working paper	Access to financial capital not examined specifically in this working paper.

transport of certain goods, all remain overlooked in the planning frameworks. As mentioned, many of the distributive impacts of proposed plans would in fact potentially reduce access to the aforementioned physical capital, including through redevelopment and resettlement plans that are not inclusive of existing livelihood and residential patterns important to the urban poor. Further, there is oversight of the potential for pro-poor land and housing delivery integrated with forward-planning public transport, such as in peripheral areas of Eastern Nairobi.

Related, protection of and support to Natural Capital, particularly with regards to smallholder agricultural plots

in accessible locations remains unaddressed in the planning frameworks, replicating a general oversight of MSE accessibility needs in planning documents.

Taken together, public transport and land-use planning in Nairobi displays substantial risk of producing splintering urbanism that is particularly detrimental to the urban poor, in the context of a city with an already long history of exclusionary and fragmentary planning processes. Such planning reflects a lack of substantive inputs from the urban poor, both in the development and subsequent implementation of new transport and land-use plans—oversights that heighten the risk of regressive planning impacts.

8. Conclusion and planning alternatives

As the economically dominate city in a country struggling to regain regional economic competitiveness and achieve dramatic GDP increases, Nairobi's land-use and transport planning processes appear to have become disproportionately influenced by the 'world city' paradigm, resulting in planning frameworks developed specifically for transforming Nairobi into a 'world-class' city with 'world-class' public transport infrastructure, in order to attract international investment, effectively turning planning into an entrepreneurial exercise. There is comparatively little focus of responding to the key challenges in the city that, if resolved, would contribute to poverty reduction efforts. The risk, therefore, is that investments in infrastructure will not be targeted towards the needs of the urban poor nor mitigate the regressive impacts that such infrastructure may produce, furthering the process of splintering urbanism in an already highly fragmented city.

While the positioning, terminology and imagery in Nairobi's new urban planning alludes to the risk of splintering urbanism, this working paper's adaptation of a livelihoods framework to public transport planning—in order to identify accessibility needs specific to the urban poor that could contribute to poverty reduction—facilitates a more systematic analysis of the potential distributive impacts of transport and land-use plans. Comparing and contrasting identified urban poor accessibility needs with proposed transport and spatial plans reveals potential impacts that are predominately regressive, and which are in accordance with the more generalized risks associated with public transport-induced splintering urbanism. In Nairobi, as in other cities of the Global South, such potential impacts include accessibility and construction-related livelihood and residential displacements, and exclusion of the urban poor from upgraded and expanded MRT systems, both of which are underpinned by an inadequate framework for the delivery of land, livelihood spaces and housing critical to the urban poor, and inadequate input from the urban poor and civil-society in planning processes.

Renewed planning in Nairobi, however, is occurring in the context of a country that has reformed, and continues to reform, a number of key institutions, policies and frameworks in order to ensure governance systems are better able to respond to the needs of all Kenyans, explicitly including those needs specific to the poor. Further, there is a strong civil society active in Nairobi that could be drawn on in vertically equitable transport and land-use planning. With the recognition that such planning could improve the

accessibility needs of the urban poor and contribute to poverty reduction, there is an urgent need to bridge the disconnect between national policy reformations and renewed transport and spatial planning occurring in Nairobi.

8.1 Transport and spatial planning alternatives

Reimagining Nairobi's transport and spatial planning as producing vertically equitable outcomes does not require that formal business interests or investment objectives be sidelined, but rather that the specific challenges that the urban poor face, including unmet accessibility needs, also receive substantive analysis and responses.

As a first step, there is a need for a more thorough analysis of the specific accessibility needs of the urban poor, utilizing a broad conception of the term that includes considerations for not only transport, but also for how such systems interact with and influence land-uses, individual needs and abilities and temporal components. Such an analysis should be undertaken with the participation of the urban poor, including through drawing on research methods that ensure participation for those demographics that may be particularly mobility constrained, such as poor women, or those often excluded from travel surveys, such as the very poor and illiterate.

While the aforementioned analysis is crucial, this working paper's use of admittedly more fragmentary data reveals critical accessibility needs that should be, and can be, addressed in Nairobi's transport and spatial planning. Planning could be integrated, for example, with opportunities arising from the Kenya Informal Settlements Improvement Project (KISIP), which has over US\$100 million in donor funding and which aims to enhance continuums of tenure security and services for the urban poor through partnerships and communities and civil society (World Bank, 2011: 8 – 10). Spatial and transport planning's coordination with KISIP could ensure that the urban poor most at risk from accessibility-related displacements are able to access mechanisms delivering improved tenure security.

Similarly, planning for public transport planning could coordinate with the National Cooperative Housing Union (NACHU) to promote pro-poor land and housing delivery. NACHU's efforts, for example, could be supported

financially by transport authorities, through the integration of a real estate department within the authority that has a mandate for promoting vertical equity. Using such a model, property development profits accruing to the transport authority could subsidize pro-poor land delivery programs operated by NACHU, such as in areas of Eastern Nairobi where there is more available land (if combined with extension of the public transport corridors into that area of the city). Property rezoning along transport corridors that allows for higher densities could also be linked to the delivery of land for low-income housing or for livelihood spaces through the transfer of development rights contingent on making such spaces and/or infrastructure available (Barter, 2001: 23). Similarly, transport authorities could ensure property developments at new transport stations and terminals include spaces for MSEs. In such a way, private-sector development and improved urban poor accessibility would not have to be regarded as mutually exclusive.

In terms of MRT subsidies, flat fare subsidies could be developed (such as single fare integration between feeder buses and MRT corridors), along with development of 'smart cards' that allow users to purchase subsidized day passes to facilitate multiple daily journeys at a reduced fare. Transport planning could also explore developing specific MRT services operating early in the morning and in the evening that allow for the transport of bulk goods by traders, which corresponds with the opening and closing of the city's markets.

Such aforementioned approaches, however, require a planning framework in which poverty reduction is prioritized as a key objective, and in which the public, including the urban poor, are regarded as key partners in planning and implementation processes. Until such a shift occurs in Nairobi's integrated transport and spatial planning, the substantial risk of splintering urbanism will remain.

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