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RESEARCH ARTICLE



African dreams: locating urban infrastructure in the 2030 sustainable developmental agenda

Edgar Pieterse^a, Susan Parnell^{id}^b and Gareth Haysom^{id}^c

ABSTRACT

This paper examines African urban infrastructure and service delivery as an entry point for connecting African aspirations with the harsh developmental imperatives of urban management, creating a dialogue between scholarly knowledge and sustainable development policy aspirations. We note a shift to multi-nodal urban governance and highlight the significance of the synthesis of social, economic and ecological values in a normative vision of what an African metropolis might aspire to by 2030. The sustainable development vision provides a useful stimulus for Africa's urban poly-crisis, demanding fresh interdisciplinary and normatively explicit thinking, grounded in a practical and realistic understanding of Africa's infrastructure and governance challenges.

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urbanization, 2030 Agenda, African urban governance, African governance, African infrastructure, informality, New Urban Agenda (NUA), African city, urban poverty

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摘要

非洲梦：2030可持续发展议程下的城市基础设施建设。 *Area Development and Policy*。 本文把对非洲城市基础设施及其服务状况的分析作为切入点，将非洲的愿景与城市管理严峻的发展需求相结合，创建了一场学术知识与可持续发展政策愿景之间的对话。我们注意到一个向多节点城市治理的转变，并强调了将社会、经济和生态价值相结合对于非洲大城市规范实现2030愿景的重要性。可持续发展愿景为非洲的城市多重危机提供了有用的刺激因素，在此过程当中，需要在现实地理解非洲基础设施及其治理挑战的基础上，形成新的跨学科和规范明确的思想。

关键词

城镇化，2030议程，非洲城市治理，非洲治理，非洲基础设施，非正规性，新城市议程，非洲城市，城市贫困

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RESUMEN

Sueños africanos: ubicación de la infraestructura urbana en la agenda de desarrollo sostenible de 2030. *Area Development and Policy*. En este artículo se analizan la infraestructura urbana y la prestación de servicios en África como un paso inicial para conectar las aspiraciones africanas con los duros imperativos de desarrollo de la gestión urbana entablando un diálogo entre el conocimiento académico y las aspiraciones políticas de desarrollo. Observamos un cambio en la gobernabilidad urbana multinodal y ponemos de relieve la síntesis de los valores sociales, económicos y ecológicos según una visión normativa con respecto a las aspiraciones que podría tener una metrópolis africana para 2030. La visión del desarrollo sostenible ofrece un incentivo útil a la policrisis urbana en África que requiere un nuevo pensamiento interdisciplinario con normas explícitas, basado en un concepto práctico y realista de los retos de infraestructura y gobernabilidad en África.

PALABRAS CLAVE

urbanización, agenda 2030, gobernabilidad urbana africana, gobernabilidad africana, infraestructura africana, informalidad, nueva agenda urbana, ciudad africana, pobreza urbana

АННОТАЦИЯ

Африканские мечты: место городской инфраструктуры среди приоритетов устойчивого развития на период до 2030 года. *Area Development and Policy*. Инфраструктура и сектор услуг в африканских городах рассматриваются в данной статье в качестве отправной точки для увязки устремлений африканских стран и суровых императивов развития городского управления, сочетая научные знания и идеи политики устойчивого развития. Мы отмечаем переход к многоузловому управлению городским хозяйством и подчеркиваем значение синтеза социальных, экономических и экологических ценностей в нормативном видении того, к чему может стремиться африканский мегаполис к 2030 году. Концепция устойчивого развития служит полезным стимулом для поиска решений городских проблем в Африке, требуя нового междисциплинарного и нормативного мышления, основанного на практическом и реалистичном понимании проблем инфраструктуры и управления в Африке.

КЛЮЧЕВЫЕ СЛОВА

Урбанизация, приоритеты 2030 года, управление городским хозяйством в Африке, африканская инфраструктура, неформальность, новая программа развития городов, африканский город, городская нищета

INTRODUCTION

Given the massive scale of material poverty on the African continent, it is curious that it has taken so long for urban infrastructure and its human, institutional and ecological impacts to become a priority research and policy agenda. The recent growth of rich empirical work based on diverse conceptual, disciplinary and ideological entry points into the study of African infrastructure and services has been hugely significant in stimulating a reimagining of the continent focused on its urban spaces, experiences and connections (Simone, 2014). With the United Nations' (UN) adoption of the 2030 agenda (including, but not limited to, Goal 11 on Sustainable Cities and Communities), a High Level Panel on Finance for Development) as well as the October 2016 New Urban Agenda of Habitat III (the global process to agree a new human settlement agenda), international attention to cities has been made explicit. When these multilateral policies are coupled with other global agreements such as the climate agreement at the 21st meeting of the Council of Parties (COP 21) in 2015 and the Sendai Framework for Disaster Risk Reduction in that same year, the fresh developmental emphasis on cities becomes apparent. What is also clear is that it is the policy deliberations, not

conventional scholarship, that are formative of a new global urban imaginary (Barnett & Parnell, 2016; McPhearson, Andersson, Elmqvist, & Frantzeskaki, 2015). Rather than academics bemoaning their lack of policy impact, we suggest it is important for scholars to engage global urban policy-making, probing where and how to augment and refine what is clearly a path-breaking moment in how development on the African continent is understood and how the life in the African metropolis is perceived.

Over the next decade, academic thinking on urban life and infrastructure is likely to flow from and/or critique the sustainable development goals' (SDG) aspirations for cities in general, and the African city in particular. Engagement with the UN's interpretation of 'sustainable urban development' will inevitably shape African scholarship, as there is a response to and interrogation of the proposals covered by the UN agreements (Barnett, 2015). The SDGs lay out a post-millennium vision, presenting a radical shift in the normative position of governments on what constitutes universal human rights, where development should focus and how 'progress' will be measured. Arguably, no development policy cycle will impact Africa more directly than this one. Included in the utopian articulation for the 2030 agenda is a very clear (and new) emphasis on the city scale, a sub-national and spatial focus which was reinforced by the Paris Agreement of December 2015 and which is naturally the focus of the Habitat process.

The broad UN endorsement of a global urban future raises fresh questions for the field of African studies generally, and urban African studies specifically. To interrogate these urban spaces of engagement, we begin by briefly setting out interdisciplinary advances that have already been put forward by infrastructure and service studies in Africa and which align with the overarching SDG 2030 logic. This is followed by an examination of the rapidly shifting global policy environment, first with respect for the African Union's (AU) overarching ambitions for the continent and then, drilling down, to a consideration of Africa's positioning on infrastructure in the lead up to Habitat III. This approach, of fusing the findings and modes of investigation born of the academic and policy literatures, is what we have argued elsewhere will enrich not only an Afro-centric understanding of the urban transition, but also will bring the urban realities of Africa closer to the forefront of global urban theorizing (Parnell & Pieterse, 2016; Parnell, Pieterse, & Watson, 2009).

INFRASTRUCTURE AND SERVICE DELIVERY – AFRICAN FRONTIERS OF INTELLECTUAL RENEWAL

Until fairly recently, Africanists largely ignored, or were openly hostile to, almost all aspects of a wider urban agenda, focusing instead on issues such as the peasantry, agriculture, natural resource use or national sovereignty. The anti-urban bias is fast receding (Myers, 2014), ushered out by evidence of the rate and scale of urbanization and a growing interest in the urban dimensions of topics as diverse as violence (Fox & Beall, 2012), economic prosperity (Mitlin, Satterthwaite, Tacoli, & Turok, 2009; Turok, 2013), social polarization (Crankshaw, 2012), environmental poverty (Satterthwaite, 2003), the burden of disease (Smit, 2012), food security (Frayne et al., 2010), youth (Diouf, 1996; Honwana, 2012; Simone, 2005) and biodiversity (O'Farrell, Anderson, Le Maitre, & Holmes, 2012). In this regard, African studies is undergoing an internal city-centric reworking that mirrors the urban transformations of the continent and the world (McPhearson et al., 2016). This scalar recalibration assumes greater urgency for Africa because the urban transition of the next few decades will be formative of future developmental opportunities on the continent.

The demographic clock is ticking and the next two to three decades will define the urban transition on the continent, not least because of the massive expansion in the number of people

living in cities and towns, particularly when compared with the rural proportion. Africa and Asia are the two most populous world regions and the least urbanized. The latest *World Urbanization Prospects* reports that:

the most urbanized regions include Northern America (82% living in urban areas in 2014), Latin America and the Caribbean (80%), and Europe (73%). In contrast, Africa and Asia remain mostly rural, with 40[%] and 48% of their respective populations living in urban areas. The number of Africa's urban dwellers is projected to increase from 471 million (40%) in 2015 to 1.33 billion in 2050 and Africa is projected to pass the 50% urban tipping point around 2035. (United Nations, Department of Economic and Social Affairs (UN DESA), 2014, p. xxi)

This demographic reality, that an increasingly large proportion of the world's urban population lives in Africa, is also driving a southern rethinking of cities that makes African urbanists more central to the collective act of urban theorizing than they may have been in the past.

Within a reimagined 'urban Africa', it has not all been plain sailing – as deep poverty, immense infrastructure backlogs, weak capacity and a shortage of money make it very difficult to compare the material issues of urban development in, say, Kinshasa with those of Sydney or Zurich. The same can be said for comparative studies of African cities, with differences in scale, extent and context all challenging broad generalizations of the African city. Alongside regional historical, cultural and material differences, there is a big variation in the net numbers of urban residents in the different African regions. While the UN's designation of southern Africa may be 61% urbanized, it only contributes slightly more than 37 million urban dwellers to the African's net urban population. West Africa, which is 44% urbanized, on the other hand, contributes 151 million to Africa's urban population (UN DESA, 2014).

Characterized by poly-crises, discerning the complex needs and obscure dynamics of the hyper-fragmented African city requires very special research insights, not readily accessed in the wider global urban studies texts (Pieterse, 2008). Across African cities and towns, an eclectic and interdisciplinary approach to the study infrastructure has thus emerged, creating methodological space for studies grounded in engineering, finance and planning, but drawing, too, often in the same project, insights from anthropology, geography and history (Carden et al., 2007; De Boeck & Plissart, 2004).

The new mixed-methods work on African infrastructure confirms that the post-structural and developmental approaches (both livelihoods and capacities) that dominated the study of African urban life in the 1990s and 2000s are being displaced, or at least augmented. The emerging body of 'African infrastructure studies' takes a broad theoretical lead from authors such as Brenner, Swyngedow and Marvin (see especially Graham & Marvin, 2001). While drawing on such theoretical positions, new research is regionally grounded (context specific) in the southern nitty-gritty of informalized hybrid service access, corruption and infrastructure shortages. Such research affirms that new conceptual and theoretical modes of how cities actually work in the 21st century are under construction from Africa (Ernstson, Lawhon, & Duminy, 2014; Jaglin, 2014; Swilling, 2011; Swilling & Anneck, 2012).

The 'infrastructural turn' suggests that earlier people-centric, often bottom-up accounts of urban life largely failed to illuminate, constructively or in critique, the demand for services in African cities. Earlier infrastructural development interventions, led by global financial institutions and coupled with specific conditionalities, proved unsustainable as they typically focused only on areas and services where repayments could be collected, thus privileging elite enclaves. The development models of these interventions, often in water and sanitation, also failed to anticipate the scale of urbanization or lack of management capacity and proved too costly for poor local governments to maintain. Faced with dramatically expanded urban service demand, new models of comprehensive affordable and sustainable urban infrastructure

and service delivery are now imperative (Organisation for Economic Co-operation and Development (OECD), 2016; Turok, 2016).

Coming to grips with the demands of Africa's urban majority has, possibly inadvertently, spawned a methodological reorientation of African studies. This shift embodies an increased focus on the material rather than the affective, the macro rather than the micro, and the state rather than civil society. Specifically, African urban infrastructural research has moved away from the individual or community experience of poverty to highlight the pervasive and negative impacts of neoliberalism and tribalism (Beall, Parnell, & Albertyn, 2015; Goodfellow & Lindemann, 2013), the global interconnectivity of regimes of infrastructure service delivery (Turok & McGranahan, 2013), and the importance of technology innovation (Etzo & Collender, 2010; Silver, 2014). Crucially, the new post-structural urban research on planning, building and managing African cities ruptures the notion of informality by demonstrating the fiscal, physical and institutional linkages across infrastructural and service value chain (Jaglin, 2014; Silver, 2014; Turok, 2016) and opportunities for the decarbonization of new provision (Hodson, Marvin, Robinson, & Swilling, 2012; Silver, 2015; Swilling, Robinson, Marvin, & Hodson, 2013). It also creates space to think again of what the terms of African urban citizenship might be, and it is here, in defining the detail of an urban dream, that the interface of scholarship with the aspirations of the UN's 2030 agenda becomes pertinent.

While no single issue has been more influential in shifting the course of African intellectual enquiry to the urban scale than the concern with infrastructure, in the overall SDG formulation it was a broad concern with cities not a narrow focus on infrastructure that drove the agenda. Whereas an early call for a stand-alone infrastructure goal fell short and was abandoned, a much better organized campaign for an urban SDG prevailed and was successful. Goal 11, 'make cities and human settlements inclusive, safe, resilient and sustainable', was ratified in September 2015. Even with the vigorous debate that accompanied the formulation of associated targets and indicators, it is clear that the 2030 agenda offers a radically different point of entry into development through cities. But the SDGs, especially Goal 11, are new and untested and so are very far from a developmental blueprint. What the following phase of global policy-making assumed was a more detailed articulation of the urban agenda than that implied by the brief wording of the SDGs and it is here, with the High Level Panel on Finance and in the crafting of the New Urban Agenda as part of Habitat III, that the normative position of nation-states on human settlements had to be affirmed and the global political and fiscal commitments worked out. The 2016 lead-up to Habitat III thus presented an important opportunity to make claims around the conditions for realizing an urban African dream. City-centric or at least city-friendly visioning process had already begun a year or two earlier under the leadership of the AU. Africa's urban dialogue began before SDG Goal 11 or the New Urban Agenda as recorded in *Agenda 2063: The Africa We Want* (AU, 2014).

AN AFRICAN DREAM – TOWARDS A NEW URBAN AGENDA?

We aspire that by 2063, Africa shall be a prosperous continent, with the means and resources to drive its own development, and where: African people have a high standard of living, and quality of life, sound health and well-being; Well educated citizens and skills revolution underpinned by science, technology and innovation for a knowledge society; *Cities and other settlements are hubs of cultural and economic activities, with modernized infrastructure, and people have access to all the basic necessities of life including shelter, water, sanitation, energy, public transport and ICT* [information and communication technology]; Economies are structurally transformed to create shared growth, decent jobs and economic opportunities for all ... (AU, 2014, p. 2; emphasis added)

The spirit of pan-Africanism, cultural pride and political determination called upon by the AU served as a touchstone for African preparations for the 2030 SDG discussions, and was then affirmed by the New Urban Agenda of Habitat III. The SDG discussion marked a global policy shift that had urban repercussions for all, but especially for Africa. It explicitly confronted the fact that the current model of extractive growth violates the limits of the natural resource base of the Earth and, therefore, requires ‘a radical shift towards more sustainable patterns of consumption and production and resource use’ (UN, 2012, p. i). Second, there was a recognition that poverty is not a problem that can be disconnected from inequality, speaking to inequitable access to power and resources at various levels – globally, regionally, within countries, within settlements and within households if we consider patriarchal gender relations.

The 2030 SDG focus on natural resource limits was also confronted through the debate on climate change, with an important milestone at the Paris COP 21. While there was agreement at COP 21 to deliver a universally applicable agreement that will be legally binding, the emerging geopolitics and President Donald Trump’s contestation as to the agreement in the United States may threaten the stability of this agreement. Despite this, the growing awareness that cities are central to the overall global effort to address climate variability through the work of the Cities Climate Leadership Group (or C40) and Local Governments for Sustainability (known as ICLEI), among many others, reaffirms the importance of urban management in this agenda (Hoornweg & Freire, 2013; UN DESA, 2013).

The implications of the 2030 multilateral agreements are profound, especially for urban Africans and their infrastructure and services choices. For the first time since the heyday of industrial modernization following the Second World War there is a near-universal acknowledgement that the current model of economic growth is untenable. A new pathway has to be found that is more environmentally sustainable, socially just and economically inclusive (see Dunford et al., 2016, for a wider discussion of these developmental transitions). We are on the edge of a paradigm change in mainstream development thinking and practice, which is good news for Africa in general and African cities in particular. The pre-existence of a shared African perspective on these global debates is reflected in the Common African Position (CAP) or 2063 vision (AU, 2014) and suggests that Africa played a formative role in securing a paradigm shift in global policy and formed part of a wider movement to realign global development outcomes.

The push for a radical reframing of the development agenda and the imperative of its African relevance had begun as early as 2013 when the Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda pointed out that:

A new development agenda should carry forward the spirit of the Millennium Declaration and the best of the MDGs [Millennium Development Goals], with a practical focus on things like poverty, hunger, water, sanitation, education and healthcare. But to fulfil our vision of promoting sustainable development, we must go beyond the MDGs. They did not focus enough on reaching the very poorest and most excluded people. *They were silent on the devastating effects of conflict and violence on development. The importance to development of good governance and institutions that guarantee the rule of law, free speech and open and accountable government was not included, nor the need for inclusive growth to provide jobs.* Most seriously, the MDGs fell short by not integrating the economic, social, and environmental aspects of sustainable development as envisaged in the Millennium Declaration, and by not addressing the need to promote sustainable patterns of consumption and production. The result was that environment and development were never properly brought together. (UN, 2013, p. 3; emphasis added)

In contrast to the MDGs, the 17 SDGs clearly address the interconnected social, economic and political nature of development, particularly in cities, which serve as priority spatial

concentrations. Once cities were seen as pathways or transformative conduits of global environmental change, effective urban management emerged as the linchpin for bringing the environment and development together (McPhearson et al., 2016). The philosophical basis of development advocated by the SDGs is socially, economically and environmentally integrated – a perspective that is imperative to action at the city scale where the complex challenges of development meet and are concentrated. Thus, there was in the SDGs and 2030 processes not only a commitment to addressing the sub-national scale but also to doing so holistically. If implemented, the implications derived from the SDGs for infrastructure and services in a poorly provided for and largely unbuilt continent like Africa are huge.

It was with the global debate around the SDGs that the AU's 2063 vision and campaign gained traction. The 2063 vision focussed on (1) a prosperous Africa based on inclusive growth and sustainable development; (2) an integrated continent, politically united and based on the ideals of Pan-Africanism and the vision of Africa's Renaissance; (3) an Africa of good governance, democracy, respect for human rights, justice and the rule of law; (4) a peaceful and secure Africa; (5) an Africa with a strong cultural identity, common heritage, values and ethics; (6) an Africa where development is people driven, unleashing the potential of its women and youth; and (7) Africa as a strong, united and influential global player and partner (AU, 2014, p. 2). The task of the common African Agenda was to position this aspirant African thinking in global debates and forums, such as Habitat III, where binding commitments are made by all nations. In this regard, African countries had not only to prioritize the importance of creating the enabling conditions for a structural economic shift from an agricultural or resource-based economy towards significant improvement in manufacturing and processing of agricultural products, but also to make gradual movements to embrace more knowledge-intensive sectors, services and to build a viable manufacturing capacity. Within this developmental framing the issues of infrastructure provision, modalities and governance loom large, as does the more general question of the overall workability of the urban planning and fiscal systems within which infrastructure provision rests. In this regard, Africa's preparations for Habitat III provided an unprecedented opportunity to project specific ideas on how vibrant, inclusive and sustainable cities and towns could unlock Africa's potential.

AFRICA IN THE HABITAT AGENDA – TAKING STOCK

As noted above, the September 2014 General Assembly of the UN in New York affirmed that cities should be profiled more explicitly in global development priorities, endorsing a dedicated urban SDG that committed the world to 'make cities and human settlements inclusive, safe, resilient and sustainable'. By September 2015, nations had ratified this goal, highlighting the importance of issues of scale and space in development practice. For the organizers of Habitat III, the stand-alone urban SDG (henceforth, Goal 11) created both opportunities and constraints, as there was an obvious imperative to align the emphasis of the high-level agreements not only in a single urban goal but also in common targets and indicators across the multi-lateral agreements. Not everyone shared the same view on how this might be achieved. Some hoped that Habitat III, or the 'New Urban Agenda', would build on Goal 11 and provide the first truly global urban paradigm, articulating how the trajectory of every city counts in the fight for sustainable development. Others thought that the most useful thing the New Urban Agenda could do was to set out a clear implementation plan of the SDGs targets and indicators.

For Africa to achieve the AU's 2063 vision, securing the stand-alone urban SDG was never going to be enough, nor was it sufficient for the subsequent New Urban Agenda (the position emerging from Habitat 111 in Quito in 2016) simply to affirm a commitment to cities as sites of sustainable development. Rather, the challenge was to set out an appropriate African

response to its experience of the urban vortex, acknowledging the centrality of cities as pathways of national and global development and facing up to what the SDGs imply for city management on African soil. For the African caucus preparing for Habitat III, it was therefore opportune to read Goal 11 in conjunction with related goals that address the imperatives of sustainable production and consumption, resource-efficient production, resilient infrastructure and zero hunger, among others. In this regard, the African position endorsed the wider framing of the New Urban Agenda and eschewed the logic of seeing it as the sharper implementation plan of Goal 11.

There was ample opportunity in the framing of the Habitat III agenda for African delegates to play a leading role in the global deliberation, and the African region undertook extensive work in the lead up to Quito. UN Habitat, the lead agency that is also based in Kenya, laid out the following objectives for Habitat III: (1) to undertake a critical review of the implementation of the Habitat agenda; (2) to identify constraints to the implementation of the goals and objectives; (3) to develop a shared perspective on human settlements and sustainable urban development; (4) to tackle new challenges and opportunities that have emerged since Habitat II (1996); (5) to outline a new development agenda to achieve inclusive, people-centred and sustainable urban development; and (6) to engender a collective agreement on the role that sustainable urbanization can play to support sustainable development (Moreno, 2014).

Habitat III's core task then was to deal with the issue of global leadership on cities. This required setting out a normative base, highlighting priority interventions that would shift the urban trajectory, provide a reporting structure that incentivized good collective urban practices for current and future generations, and address the imperative of securing adequate financing and support for poor countries that faced the biggest urban challenges (contested land-use management, inadequate municipal finance, infrastructure and service backlogs). However, it was up to individual stakeholder organizations, nation-states and regional deliberations to provide the detailed evidence and experience on which the New Urban Agenda would rest (Roig, 2014). Some scholars played a role in these formative African policy processes; most remained unaware of the potential importance of the deliberations.

For African members, Habitat III offered the scope to refine the commitments to participation that were agreed at Habitat I (1976), and to slum eradication that was the consensus emerging from Habitat II. Unlike the earlier agreements, Habitat III challenged Africa to embrace cities a whole and not just to address housing or services such as water or power in isolation. In this regard, there were three new areas of focus for debate: substantive political and fiscal decentralization; holistic land-use policies (both inter- and intra-urban) linked to effective planning systems; and integrated human settlements strategies that involve working with the poor to achieve the realization of housing and service rights.

African imperatives on issues in the New Urban Agenda share much with other world regions, but as the earlier discussion on infrastructure scholarship revealed, they also have a particular history and profile. Positioning the continent in the global deliberations effectively rested on deep knowledge about urban change and wisdom that could foreground the political importance of so-called informality, urban-rural linkages, the deep poverty of many in African cities and the aspirations of the youth on the continent. Before instigating a major urban reform agenda, the political starting point of Africa as an urban continent had to be affirmed. While it may be that Glaeser's (2000) hyperbolic talk about cities as engines of growth has some merit, the reality is that not until poverty in Africa is acknowledged by national governments as urban and not just rural that the consensus needed to change the spatial development trajectory will be unleashed (Turok, 2016, 2013; Turok & McGranahan, 2013).

One danger of the shift to large-scale private infrastructure investment in whole neighbourhoods or cities, as in the case of Luanda, is that the rich continue to segregate themselves

from the urban conditions of the population as a whole and resist investment in the public good simply by using new technologies and building themselves private cities. Preventing, or discouraging, elite buy-out from contributing to more sustainable models of urban development is a key reason to promote a new urban agenda for Africa under the rubric of the SDGs that target poverty and inequality. The dream has to be universal rather than backing, as the MDGs did, investment in infrastructure as part of an anti-poverty strategy in isolation from wider questions of urban governance. That said, the issue of affordable infrastructure for the poor remains key for Africa and cannot be allowed to slip out of SDG/Habitat III focus in the global drive for more ecologically sustainable infrastructure or for more economically productive infrastructure.

Extraordinarily high levels of poverty and systemic neglect mark African urban areas. Into this breach, urban households invest an inordinate amount of time, energy and personal resources to activate multiple systems of service provision to meet their daily reproductive needs (Jaglin, 2014). Not only are these low-cost solutions but also they are of inadequate quality and the service networks are badly configured. The predominance of informal economic life, combined with thin local institutional systems and elite capture, means that the tax base on which costly public or bulk urban infrastructure investment depends is generally inadequate to meet either capital or operating needs. Even in well-resourced countries such as South Africa, national governments can perceive the conditions of municipal fiscal vulnerability as justification for continued national control and management of urban areas, especially strategic nodes such as capital cities or strategically located secondary cities. The net effect is that there is typically no coherent municipal strategy or local investment programme to address urban management imperatives across the diverse needs of the national settlement/urban system. Disease outbreaks, social unrest and/or rising terror threats in cities may shift the current middle-class disregard for the public good in African cities, but as yet, governance failure is not recognized as a major political concern or risk. To date, very little has happened to Africa's political elites when urban areas underperform or fail their citizens, a fact that partially explains the persistence of urban governance deficits on the continent.

INFRASTRUCTURE DEMAND IN A WIDER URBAN CONTEXT

There is a paradox: whereas there is an absolute crisis of urban governance across all of Africa, there is no single explanation for why African cities are so badly run. While it is important for Africa to speak coherently to position its view in the global debate on the new urban agenda, we should be wary of overgeneralization that may reinforce, not reduce, the effectiveness of urban service management in any particular city or country. There are hugely divergent traditions of urban regulation, massively varied biophysical conditions, relative levels of wealth and poverty are varied, and so too is the scale of projected infrastructure and service demand in African cities. [Figure 1](#) depicts the level of urbanization by country across Africa. [Table 1](#) segments Africa by region. Northern and Southern Africa are both relatively urbanized, with West and East Africa at the other end of the spectrum. This is very important because the bulk of population growth in Africa will be concentrated in these two regions, which are also the poorest in terms of gross domestic product (GDP) per capita (Cilliers, Hughes, & Moyers, 2011). However, as [Table 1](#) illustrates, there are important variances in various sub-regions, and when reading [Figure 1](#) we need to keep in mind statistical outliers such as Djibouti, with a population of fewer than 800,000 and the Seychelles with fewer than 90,000. Similarly, in West Africa, Cape Verde has a population of just over 500,000.

In addition to appreciating the variety in levels and rates of urbanization across the continent, it is also important to appreciate the phenomenon of urban primacy coupled with small-scale urbanization where land-tenure arrangements and an absence of any

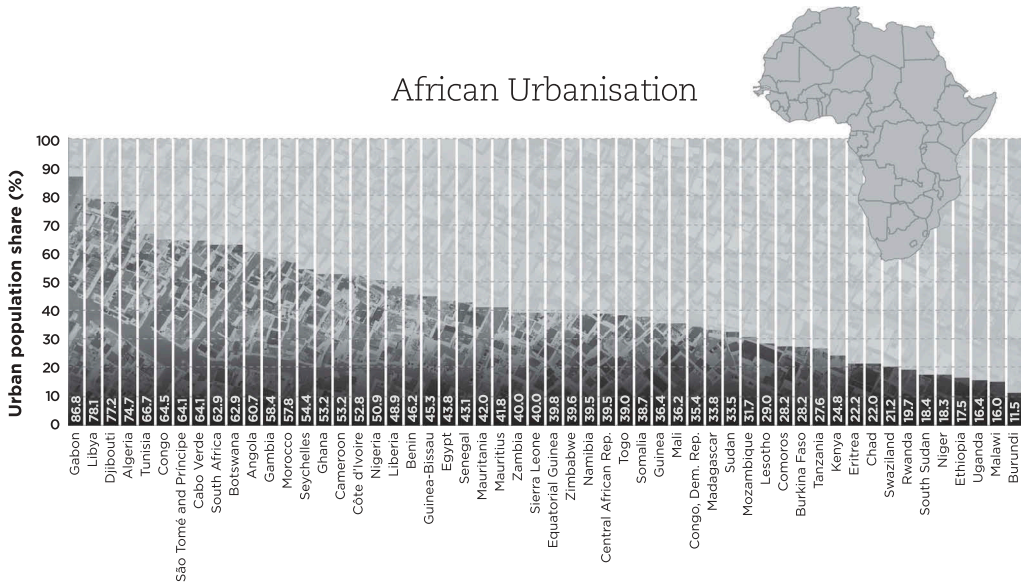


Figure 1. Percentage urban population by country.
 Source: United Nations, Department of Economic and Social Affairs (UN DESA) (2014).

Table 1. Urban population across African regions (%).

Region	Percentage urbanized 2014	Net urban population	Percentage of the African urban population
East Africa	25%	96,610,000	21.2%
Middle Africa	44%	60,685,000	13.3%
North Africa	51%	109,727,000	24.1%
Southern Africa	61%	37,328,000	8.2%
West Africa	44%	151,084,000	33.2%
Africa	40%	455,345,000	100%

Source: United Nations, Department of Economic and Social Affairs (UN DESA) (2014).

history of formal local government invariably set the management regimes of these settlements apart from those of old colonial towns. Most sub-Saharan African countries are characterized by a lopsided urban system, making the issue of urban reform a difficult and complex task that must deal explicitly with issues of scale and context and not proffer a one-size-fits-all solution. Making the need for flexibility clear in a global urban policy formulation process is never simple. One way of highlighting the variation is to focus on settlement size.

The traditional colonial city tends to be very large and dominant in the national political and space economy, followed by much smaller cities and a large array of town-like urban areas (sometimes called peri-urban settlements). It is this latter non-metropolitan context, where often there is no local government (Palmer, Moodley, & Parnell, 2017), that is least well

Net urban population



Figure 2. African urban population distribution by settlement size.

Source: United Nations, Department of Economic and Social Affairs (UN DESA) (2014).

understood from an infrastructure and service provision perspective, a problem given their numerical dominance. UN data suggest that in 2015, 9.2% of the urban population resided in megacities with populations exceeding 10 million, in contrast to 5.3% in 5–10 million population cities; 22.5% in 1–5 million cities; 8.4% in 0.5–1 million cities; 7.3% in 300,000–500,000 cities; and, most significantly, 47.3% in cities with fewer than 300,000 inhabitants. In light of this, the African region argued that it was prudent to prioritize research and policy that gives a better handle on the functioning of the overall urban system (the links between town and country, between small and large cities, and the insertion of African cities into global economic and resource networks). While greater clarity on how to manage cities with 1–5 million people was seen as important, even more crucially, the Africans argued that understanding how to address the majority urban condition of Africa – towns with fewer than 300,000 people would be the litmus test of the New Urban Agenda. [Figure 2](#) illustrates the distribution of settlements population by size.

INFRASTRUCTURAL DEFICITS

Economic growth in Africa has shown promising signs over the past decade, even after the global economy went into recession after the 2008 financial crisis (Africa Progress Panel,

2012; Dunford et al., 2016). However, most economists point out that the extremely limited infrastructural footprint presents a binding constraint to continued and high growth (OECD, 2016). Most acute is the energy deficit, but this is reinforced by shortfalls in mobility infrastructures, water systems, information and communication technology (ICT) cabling etc. (Africa Progress Panel, 2015). Again, comparative data demonstrate that, even when calibrated for low- or middle-income status, the degree of infrastructure deficit is exceptional in Africa relative to other regions (Figure 3).

What sets Africa apart is the relatively small size of national economies, the restricted middle class and a limited tax base. This thin economic base and weak associated fiscal and land-regulatory regimes make its cities a generally less attractive proposition for international infrastructure investors. This is compounded by the fact that the infrastructure-financing opportunities and absorptive capacity in other world regions are much larger than Africa's (African Development Bank (AfDB), 2013; Pieterse & Hyman, 2014). In other words, infrastructure capital has options for where to invest, especially since mature OECD markets are now in need of massive infrastructure replacements and retrofits to replace ageing investments and to meet more stringent environmental standards.

The general deficit in infrastructure capacity, combined with acute financing challenges, creates a situation in which there is tremendous pressure on the existing infrastructure investment budgets in terms of who and what it will prioritize and service. Private-sector players, increasingly international actors who can promise major economic investments (e.g., ports, airports, trunk roads, office blocks) access the ear of political decision-makers and tend to get to the front of the development approval queue. These ad-hoc, often physically and institutionally ring-fenced forms of development, generally impact negatively on the availability of redistributive resources to address large-scale slum-living conditions. As the urban population of Africa grows, the need and financing gaps for public infrastructures including not only roads but also markets, schools and waste treatment services for the poor get ever larger. It is against these trends that a sobering conclusion of World Bank research on affordability should be considered:

Most African households live on very modest budgets and spend more than half of their resources on food. The average African household has a budget of no more than \$180 per month; urban households are only about \$100 per month better off than rural households. (Banerjee et al., 2009, pp. 4–5)

Note, too, that as urbanites typically have to pay cash for all their basic needs, including food, disposable income for services is much lower than average incomes suggest (Smith & Abrahams, 2016).

Supporting the poor by lowering household costs through improved infrastructure may seem an obvious strategy. Not only is there insufficient investment in infrastructure to sustain economic productive capacity and growth, but also even if the available pot were equitably shared between middle-class imperatives and ensuring access to basic services for the poor, there is little prospect of funds going to the latter due to very low rates of economic return and overall lack of capacity to pay. As long as we see GDP per capita levels below US \$2000, coupled with high-income inequality, we can be sure that the vast majority of urban African people cannot be serviced through conventional infrastructure investment approaches. Most African countries will have to figure out a different approach to ensure that the basic needs of their citizens are met, whilst simultaneously creating the infrastructural platforms for growth.

Comparative infrastructure index

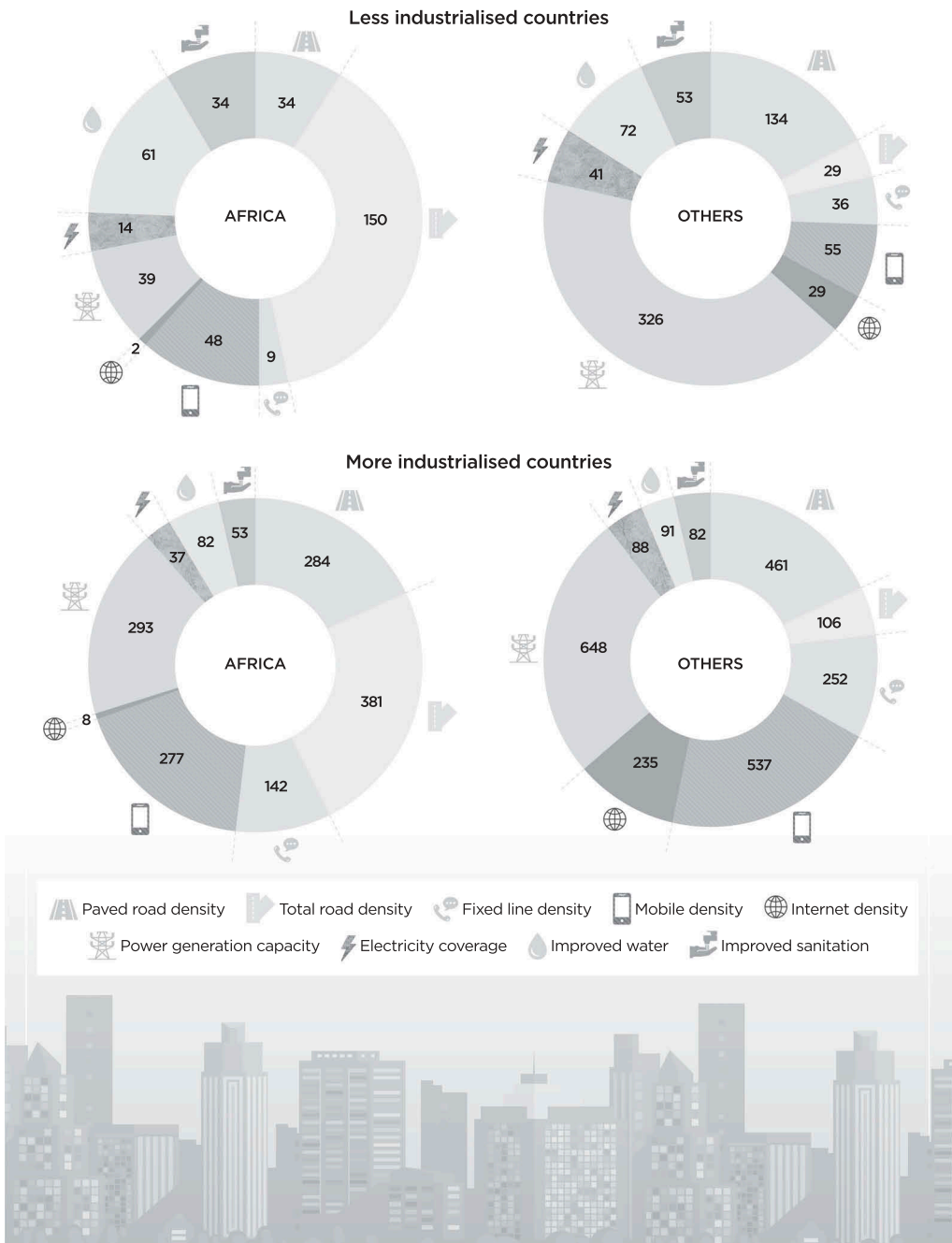


Figure 3. Infrastructure endowments for African Low Income Countries (LICs)/Middle Income Countries (MICs) compared with other global regions.

Note: Road density is measured in kilometres per 100 km² of arable land; telephone density is in lines per thousand population; generation capacity is in megawatts (MW) per million population; electricity, water and sanitation coverage are as a percentage of the population.

Source: African Development Bank (AfDB) (2013).

THE AFFORDABILITY OF INFRASTRUCTURE IN AFRICAN CITIES

The issue of infrastructure affordability is one that is set to grow exponentially, along with the bulge in the urban population. Africa's population will continue to grow until the end of this century, whereas Asia will peak in about 50 years' time and most other world regions have already plateaued. In fact, according to the African Development Bank (AfDB), 50% of Africa's population is younger than 19 years of age (AfDB, 2011). Forecasts that the continent will experience a demographic dividend over the next 40 years assume that basic needs, such as infrastructure and services, will be met for the majority. Africa's infrastructure gap is 'around \$93 billion a year and amounts to 15% of African GDP each year, double the current spending level' (Turok, 2016, p. 39). Meeting future urban infrastructure expectations is not simply an engineering challenge but also one of jobs.

One distinctive feature of Africa is that the vast majority of the labour force (population aged between 15 and 64) is trapped in vulnerable employment (defined by the International Labour Organization (ILO) as subsistence farming, informal, self-employment and work for family members that is characterized by low or erratic income. Only 28% of the African labour force are in stable wage-earning jobs and 63% are classified as being in vulnerable occupations. The McKinsey Global Institute points out that between 2000 and 2010, when Africa experienced exceptionally robust GDP growth rates, the proportion of the labour force in vulnerable employment dropped by only 2%, suggesting a worrying disconnect between economic growth and formal employment creation (McKinsey Global Institute, 2010). The 2016 version of the McKinsey *Lions on the Move* report notes the decline in economic growth but does not offer insights into the changes in vulnerable employment (McKinsey Global Institute, 2016).

Africa's labour force will treble between 2000 and 2050, rising from 400 million to 1.2 billion (AfDB, 2011). New entrants into the labour market are unlikely to be absorbed into stable jobs if the current economic growth path is not radically altered. Put differently, the AU's Agenda 2063 goal of inclusive growth, where the potential of young people is unleashed and they have greater disposable income for things such as services, will not be realized if vulnerable employment continues to be the norm in the African city. And cities with high unemployment struggle to fund costly infrastructure of any kind.

From an infrastructure affordability perspective, the problem of large-scale vulnerable employment is closely linked to the scale of income poverty in Africa. Figure 4 provides clear evidence of the levels of inequality across Africa. It reflects that 81.7% of Africans live on less than US\$4 per day, with 60.8% falling below the US\$2 per day mark. For residents of cities, where even the most basic needs such as water and shelter must be paid for in cash, income poverty is a major concern. High costs of informal service provision and the absence of social safety nets expose low-income urban households to particular risk. Given that infrastructure in urban areas in Africa comes at a significantly higher cost to other regions, this highlights the challenge in responding to the ambitions of Agenda 2063 and also questioning financing models for traditional infrastructure and service delivery. The likelihood of the infrastructure being ring fenced in elite enclaves – due to affordability concerns – become evident when these income disparities by population segments are considered (Figure 4).

Without stable or decent income for a significant proportion of the urban population, it is impossible to enjoy formal household or neighbourhood services because the routine reproductive costs associated with (sub)urban living, such as water or power, become unaffordable. In light of the scale of vulnerable employment and income poverty, it is not that surprising that the majority of urban Africans live in slums: 61.7% according to UN Habitat. This is much higher than the second highest incidence of slum prevalence, which is South Asia at 45%.

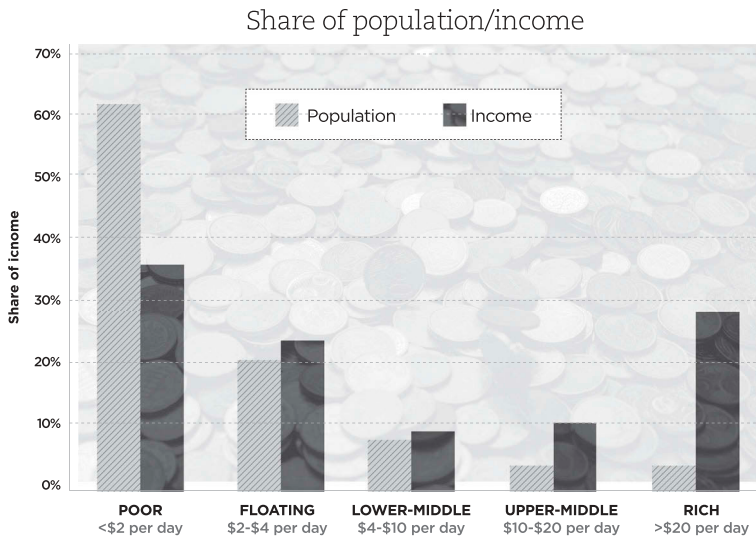


Figure 4. Income distribution across class lines in Africa.

Source: African Development Bank (AfDB) 2011.

There is a vicious circle between poor living conditions, limited access to education and lack of decent health, obtaining decent work and surviving on the margins of society. This cycle is compounded by entrenched and intergenerational deficits, transferred to Africa's youth. One example of such a deficit is the handicap imposed by under-nutrition in urban areas, particularly in the first 1000 days, potentially imposing a permanent development limitation on a child through their entire life (Leroy, Ruel, Habicht, & Frongillo, 2014). Unless the proposed paradigm shift argued for in the AU's Common African Position on the Post-2015 Development Agenda is substantially advanced, it is likely that the visionary goals of Agenda 2063 and Habitat III will not come to pass and the African urban dystopia will prevail.

INFRASTRUCTURE, SUB-NATIONAL GOVERNANCE AND RISK

Intensifying informalization, slum living and divided cities constitute a recipe for social conflict, especially as members of the increasingly youthful population mediate their expectations through globalized consumer cultures and social media (UNICEF, 2014). Most African urban areas are lacking in effective and democratic urban governance and management. One of the drivers of this, which manifests in infrastructure shortages, is the limited implementation of national decentralization programmes and the associated ambiguity in the urban responsibilities of central and local governments (Pieterse & Smit, 2014). The gap in accountability in settlement management is further complicated by hybrid and overlapping governance systems, reflected most acutely in land-use and tenure arrangements (Berrisford, 2014; Turok, 2016). Put differently, in the absence of cadastres that can render land-use transparent and predictable, a plurality of informal power dynamics has emerged in African cities that determine how land is used, serviced (or not), rented out, profited from, and made available for coherent and systematic planning and regulation. Informal land and service-based power dynamics knit together elected politicians in loose coalitions with local 'strong men', who rely either on force, traditional authority status or the dominance of political parties to exert authority in ways that

are not always legible or predictable. In the absence of strong local democratic associations, it is almost impossible to break the power of these de facto property and commodity mafias who, as infrastructure is rolled out, also become service provision barons.

Since urban land use in particular has been subjected to dynamics of elite control over decades, it is very difficult to unravel and reform these practices. Vested interests that operate beyond democratic requirements for accountability and transparency can become institutionally embedded over time and are difficult to dislodge. Governance reform is lagging far behind the ideals of democratic decentralization as codified in the Habitat Agenda of 1996, the African Charter on the Values and Principles of Decentralisation, Local Governance and Local Development (c.2014), or the aspirations of Agenda 2063 noted above. Linkages between corrupted and unregulated land regulation and formal tax collection capacity also erode opportunities for public interest value capture and can preclude the generation of local capital to address the urban problems already identified (Berrisford, 2014). A number of recent studies underscore the fact that there is tremendous potential to use well-crafted regulations to connect land-value appreciation and infrastructure investment to generate new revenue sources to finance urban investments (Smolka, 2013; Suzuki, Murakami, Hong, & Beth, 2015; United Cities and Local Government (UCLG), 2010).

The flipside of weak governance is typically a disempowered civil society. Most African cities are endowed with dense social systems, especially since most households need to insert themselves into multiple networks and social settings to gain strategic information to stay in the 'game' of survival and expansion of livelihood options (Myers, 2011). Yet, these institutions tend to stand apart from formal political institutions or overt political mobilization because of the potential costs involved. Practically, this means that the incredibly rich seam of social capital does not get mobilized for effective democratic urban governance and management.

CONCLUSIONS: INTEGRATING SCHOLARLY AND POLICY DEBATES AROUND AFRICA'S URBAN DREAMS

The general intellectual direction of those in the academy concerned with infrastructure in African cities may be separated from, but not entirely at odds with, the global policy machine assembled to formulate a 2030 urban agenda, though the latter is more overtly utopian and forward looking. Clear lines of confluence can be detected around issues such as: the imperative of a universal urban agenda (one that has legitimacy in all cities everywhere); the importance of city-scale developmental action and sub-national governance regimes (noting a critical role for local government); a shift away from the binary of formal and informal concepts in favour of the multi-nodal governance and power regimes of cities; and the synthesis of social, economic and ecological values in the normative position on what an African metropolis might aspire to.

The core problem with African cities, including the provision of infrastructure, is typically depicted as lying with the legacy of colonial and modern planning and donor-driven development. The dominant narrative is about how those in control in the early and mid-20th century used power to do all the wrong things, creating enduring problems for today's cities and urban residents, especially the poor. There is much to be said for this line of thought. Infrastructural manifestations of the colonial and Western imprint abound: in the distorted distribution of bulk services, a massive undersupply of expensive public infrastructure such as waste water treatment, ports, under serviced neighbourhoods in areas of key household infrastructure such as energy, and the existence of unrealistic and/or unenforceable formal infrastructure standards. This is further underpinned by generally unattainable infrastructure

aspirations of most city residents. But, as recent infrastructure work has shown, overcoming the colonial past also necessitates an engagement with more recent political, technical and institutional dynamics at the city level. Recent post-structural writing on the African metropolis has been as concerned with identifying new workable modes of service consumption, of describing alternative and innovative mechanisms for reaching the dark service shadow lands of the slums and of breaking the power regimes that have corrupted efforts at extending urban provision and creating universal affordable service coverage. Although not an explicit informant to the new global policy discourses of the post-2015 development agenda, there is much that this new infrastructure material brings to the wider deliberations following Habitat III and the formulation of an explicit urban SDG goal. But it needs to be scaled up and reframed less as critique and more as proposition.

Africa's preparatory engagement with the UN Habitat process took the city-scale engagement seriously, as a legitimate alternative to past largely pro-rural development trajectories. In the preparatory process, fundamental dilemmas of infrastructure shortages, service affordability and the almost total absence of legitimate or effective fiscal and land-use governance were highlighted. Crucially, the continent has embraced rather than negated the 2030 commitment to improving the management of all urban spaces as the pathway to global sustainability, suggesting the emergence of strong political and intellectual commitment to a new urban agenda from Africa. How the 2030 Agenda deals with infrastructure challenges in the African metropolis will provide a litmus test of how workable the wider global ambitions and dreams of sustainable urban development actually are.

This paper can be read in two parts. Firstly, it highlights, with a measure of optimism, the emergence of an African urban position and the unique moment in which Africa, and particularly urban Africa, finds itself. The urban position adopted by Africa in the Habitat III and SDG processes and the outcomes embodied in the New Urban Agenda all point to an appreciation for Africa's urban potential. Secondly, it laid bare the current infrastructural and governance deficits, the inherited legacies, and the economic, demographic and wider urban developmental realities. This bifurcated approach was deliberate. There is a real risk that the optimism (even euphoria) of the African urban position that emerged in the SDG and Habitat processes does not move forward into action. This concern raises both academic/research and normative policy/governance questions.

Formulating the actual 'nuts and bolts' required for the implementation of the New Urban Agenda and the realization of the SDGs means that academics have to engage governance actors and the citizenry in very different ways. African academics can no longer defer to established Eurocentric or Western theories, norms and perspectives, particularly in the planning and economic disciplines, as best practice. African academics need to work out what the future African urban governance domain looks like. Regional and even national contexts inform the outcomes of such enquiries, adding rich and textured pathways to the realization of the African dream embodied in the title of this paper. This presents unprecedented opportunities for local research and scholarship. Reflection is required on existing knowledge hierarchies and wisdom to incorporate Africa's varied knowledge domains. Co-production, with both society and governance actors, is also required. At the city scale, the potential for such co-produced knowledge is perhaps more evident than at the national scale.

The scalar question does require far greater engagement, particularly in terms of Africa's urban governance challenges and futures. This is not a question of the city replacing the national. This cannot be the case in the emerging African urban project. A key project of African urban research is to understand how these scales intersect, both conceptually and normatively. Seeing the city and national scales operating in conjunction with one another necessitates functioning multi-nodal urban governance and power regimes, structures and processes that are poorly understood in the African context.

Academics have a key role to play in taking forward the work done in the pre-preparatory and negotiation stages of both the SDGs and the New Urban Agenda. The opportunities lie in engaging in current realities, seeing these African realities as the starting point and working from there. The risk is that researchers and governance actors see Northern (and possibly even other BRICS – Brazil, Russia, India, China and South Africa – and regional Southern groupings) trajectories and approaches as the goal and work towards these.

Unlike the North, in Africa (and the Global South more broadly), the state does not exist in ways required to deliver on the SDGs and the New Urban Agenda. And so the expectation of a national urban policy (as an outcome of the New Urban Agenda) is that states need to articulate what they are going to do institutionally in order to be able achieve the SDGs. Cities, the New Urban Agenda and national urban plans are essential to the process of building a capable state – a state that can deliver the SDGs, supported by productive and effectively governed cities.

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