

Land and connectivity: Domain report

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May 2024

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Acknowledgements

We would like to thank the following city researchers, whose background reports we draw on extensively in this report:

Accra: Samuel Biitir, Farouk Braimah

Bukavu: Jean-Louis Nzweve

Harare: Kudzai Chatiza

Kampala: Eria Serwajja, Doreen Kobusingye

Maiduguri: Abubakar Monguno **Mogadishu**: Surer Mohamed

Abstract

Urban land is a crucial economic, environmental and social resource in African cities. It also highly politicised, often becoming a source of conflict and a factor in growing urban inequalities. A burgeoning literature exists on urban land dynamics, much of which is focused on questions of land use planning and regulation, tenure regularisation and other aspects of land governance. In this ACRC domain, we instead sought to explore in depth how the nexus between land and connective infrastructure is shaping the way land is valued, used, transacted, fought over, managed and taxed in African cities. This report discusses findings from a six-city comparative study, spanning the cities of Accra (Ghana), Bukavu (DRC), Kampala (Uganda), Harare (Zimbabwe), Maiduguri (Nigeria) and Mogadishu (Somalia).

Following a discussion of some of the key recent debates in the literature on urban land in Africa, we provide an overview of the research project's design and methodology. We then draw extensively on the six city studies to explore emergent crosscutting themes. These include the complex multiple drivers of urban land values; the ways in which different societal actors (including various forms of brokers) capture the rising values of urban land; the dynamics of "growth without access" in urban peripheries; the diversity in property taxation systems and how this informs context-specific reform challenges; the "technopolitical" dimensions of land administration and the opportunities and obstacles this creates for reform; the role of digital connectivity in shaking up land management and land markets; and the varying ways in which land is politicised and made a source of conflict. We then offer a comparative analysis of the politics of urban land and connectivity, suggesting that different political settlement types are likely to condition the extent to which land politics are further complicated by what we term "territorial politics" and "institutional politics" in the domain. Finally, we conclude with a summary of key findings and a discussion of policy implications.

Keywords: Urban land, infrastructure, transport, digital connectivity, land value capture, land politics, land brokers, African cities

Cite this paper as:

Goodfellow, T, Tahir, A, Cirolia, LR and Acheampong, R (2024). "Land and connectivity: Domain report". ACRC Working Paper 2024-12. Manchester: African Cities Research Consortium, The University of Manchester. Available online: www.african-cities.org

ISBN: 978-1-915163-11-0

The African Cities Research Consortium is funded by UK International Development. The views expressed here do not necessarily reflect the UK government's official policies.



Executive summary

Context

Land is a notoriously challenging issue in African cities, given often dysfunctional and under-resourced systems of land administration that have to engage with highly inequitable colonial legacies, widespread speculation and forms of elite capture, placing huge pressures on the sector. A range of policies have been promoted to address issues related to urban land, from regularisation and titling programmes to experiments with different forms of land and property taxation, to community enumeration and mapping tools. Rather than duplicate the substantial and growing research and scholarship in this area, this domain focused primarily on the ways in which land challenges intersect with connectivity – in particular, with the development of transport and mobility infrastructures, and more tentatively with digital infrastructures that can change the way land is used, valued, exchanged and managed. We highlight key findings and engage with the ACRC conceptual framework as appropriate. Despite drawing some important insights from the cross-city comparison, we emphasise that the very diverse colonial legacies and postcolonial land reforms, as well as variation in the extent of ethnoreligious fractionalisation and experience of violent conflict, make drawing cross-case policy implications particularly challenging.

Focus cities

In this domain, our broader research team conducted research in six cities: Accra (Ghana), Bukavu (DRC), Kampala (Uganda), Harare (Zimbabwe), Maiduguri (Nigeria) and Mogadishu (Somalia). This selection includes cities that have experienced extreme, protracted violent conflict in the city or wider region (Bukavu, Maiduguri and Mogadishu) as well as relatively stable cases; secondary cities (Bukavu and Maiduguri) as well as capital cities; cities with varying relationships between the party in power nationally vs locally; and cities with legacies of very different forms of colonial spatial bifurcation and/or racial, ethnic or clan-based segregation. Despite these substantial differences, we present crosscutting findings followed by an indicative analysis linking particular land and connectivity challenges to broader patterns of politics, and to the ACRC political settlements framework.



Figure 1: Land and connectivity domain cities

Key findings

- 1. Land values are driven by multiple factors often not considered in conventional property development and value capture models, and these intersect in complex ways. The relationship between land value and connectivity is not as straightforward as often assumed; transport infrastructure sometimes causes substantial dips in land value in some areas, as well as increases in others, and speculation on potential future infrastructure can lead to new forms of land-based exclusion, even where the infrastructure does not materialise. A range of other factors, from security to deliberate misinformation on the part of brokers and other actors, can serve to inflate land values. These processes raise questions for the legitimacy and efficacy of land value capture instruments.
- 2. Many societal actors are involved in capturing the rising value of urban land, including various forms of brokers. Actors involved in capturing land value are diverse, from "traditional" authorities and families to youth gangs and militias. In some cases, these actors threaten insecurity, in order to commodify security provision on the land. Land brokers agents that connect buyers and sellers, often informally are playing a central role in land markets in many African cities. Though increasingly integral to land transactions, they can also

- be highly exploitative and can generate or exacerbate land-related insecurity. The ways in which brokers operate at different socioeconomic levels differ widely, with varying systems of profit distribution and information sharing and withholding.
- 3. Urban growth and residential development often proceed with particular rapidity in areas without connective infrastructure in contrast to planning assumptions that urban growth is stimulated by increased connectivity. Relatively weak state presence in many peripheral areas facilitates rapid development, because of lax formal regulation alongside a vibrant land market. Because of this limited state presence, there is limited connective infrastructure provision at the same time as greater opportunities for non-state actors to dominate the land and connectivity domain. This can feed into the cycle of non-state value capture by a range of actors alongside limited state resources and capacity.
- 4. Systems for property taxation vary massively in terms of what is included in the tax base, systems of valuation, and tax rates, making cross-city learning highly challenging. Moreover, property taxation is often weak, not just because of poor administration and valuation techniques but because of central–local and other inter-agency political tensions, "dual" systems of land valuation fuelled by speculation, the extent of non-state taxation/value capture (point 2 above), and the fact that the property development frontier is often highly underserviced by infrastructure (point 3 above).
- 5. Digital innovations are featuring heavily in land systems and can make a difference to "low-hanging fruit" in terms of land registration and taxation; but beyond this, the digitisation of records and processes faces many of the same issues that manual and paper-based systems faced. Innovations in the digital space can be progressive in terms of creating new opportunities for women and marginalised groups, but they also need to be better nuanced in terms of how they capture conflicting and overlapping rights, or there is a risk of further/continuing land injustices.
- 6. Three types of politics are evident within the domain, which we characterise as land politics, territorial politics and institutional politics. i) Land politics refers to situations where property in land is the focal point of contestation between individuals and groups, and where interests mobilise politically to defend property rights or try to augment their land holdings. ii) Territorial politics refers to contestations that are not about land-as-property so much as control over geographic space, who gets to access and use that space, and how land is connected to other parts of the city. In this respect, territorial politics is at the heart of the land—connectivity nexus, involving the organisation of interests around questions of how land is physically accessed and connected. iii) Institutional politics in the domain refers to how formal and informal governance systems relating to land and connectivity are arranged, and the ways in which this is contested (for example, between different tiers of government, or overlapping formal and informal systems of land tenure and land regulation).
- 7. These three different forms of politics are evident everywhere, but their relative weight differs, depending on the nature of the political settlement. Land politics is a dominant feature of all cities, albeit in varying forms (see point 8 below). But, in some cases, this is overlain with intense institutional politics or territorial politics that pose their own distinct challenges. In "broad dispersed"

- settlements that is, where the range of groups politically included in the settlement is wide, and state power diffused in ways that impede implementation capacity (such as Accra and, to some extent, Kampala), institutional politics is likely to be very challenging. Here the need to distribute land widely is strong, but conflict between government agencies impedes this. In "narrow concentrated" political settlements, where power is highly concentrated and the "social foundation" of the political settlement is narrow (such as Maiduguri and Bukavu), the opposite pertains: institutional conflict can be better managed but partly because there is less impetus to redistribute land widely. Meanwhile, territorial politics is especially significant in cases where the "social foundation" of the political settlement is narrow and state power is dispersed, meaning that the state has limited capability and incentive to provide connectivity infrastructure (such as Harare and Mogadishu). This situation generates privatised brokerage over access to and use of urban space, with non-state and state actors often competing for control over large areas. regardless of who owns the land.
- 8. Different forms of land politics coexist in our case study cities, but some dominate in particular cases. We identify three different ways in which land is politicised. First, land can be significant in terms of its political symbolism and role in legitimising discourses, for example when signifying alliances with particular ethnic constituencies, regardless of how it is actually distributed. Second, it can be politically significant in terms of patterns of distribution and redistribution, and the use of land either to exacerbate or redress patterns of colonial and postcolonial dispossession and inequality. Third, land is politically significant as an economic and speculative asset, making it a store of wealth and source of economic rents that provide resources for political influence and bargaining. These forms of land politics can and do coexist in specific cities, but some forms of land politics are stronger than others in a given case, for historically specific reasons.

Implications for urban reform

1. Reform approaches may need to work more on building government legitimacy versus state capacity, depending on which individuals and agencies are seen as the primary "land-grabbers". In some cases, where land politics is primarily based on patterns of historical dispossession by the state, state agencies are seen as particularly illegitimate in relation to land issues. Here non-state actors, such as traditional authorities, clan elders or religious leaders, have much greater legitimacy in distributing and managing land. This is evident in Accra or Mogadishu, despite their significant differences. Here the building of government *legitimacy* in the land sector and *trust* in state institutions to regulate and administer land may be more important than building greater capacity of specific government agencies, at least in the short to medium term. In other cases, private elites and politicians – rather than state agencies – are seen as the main perpetrators and beneficiaries of land-based exclusion (such as Kampala or Bukavu). Here the challenge is to build the capacity of the state to limit illicit elite land deals and deliver more equitable distributions of land and land value (for example, through land tenure and taxation reforms), while bringing together civil society stakeholders to keep check on any enhanced state capacity and build consensus around fair land policy.

- 2. The varied balance between land politics, territorial politics and institutional politics in the land and connectivity domain in different cities has implications for reform prospects. All cities face political challenges linked to weaknesses in systems of tenure and/or property taxation and land administration; but approaches to urban land reform need to be attuned to how reforms in these areas might be derailed by territorial or institutional politics. In political settlements where territorial politics may overwhelm land reform efforts (such as Harare or Mogadishu), attempting to address challenges of transport connectivity infrastructure (including through negotiation with actors who currently provide such connectivity) is advisable prior to major land reform initiatives. In "broad dispersed" settlements such as Accra, tackling institutional conflicts, agency overlaps and intergovernmental disputes will be a particularly important foundation for land reform.
- 3. Finding ways to engage with land brokers and other intermediaries will be crucial to reform efforts. This is particularly likely to be the case in settlements with dispersed state power and where urban land's role as an economic and speculative asset is central to land politics, such as Kampala. As brokers come in very different forms, depending on the position of their clients in the socioeconomic hierarchy, different kinds of engagement with different categories of brokers will be required, depending on whether policy initiatives involve reforming land registration, taxation or tenure systems themselves. As these actors increasingly work digitally, land reforms will also need to engage with questions of how digital space is regulated. The potential to generate greater transparency in land transactions, and relatedly land pricing, can also support building property valuation capacity for tax purposes, as well as the legitimacy of the tax.
- 4. Policymakers should maintain awareness that technical interventions can mask or even worsen existing political and institutional conflicts. However effective they might be at streamlining processes or reducing corruption, new technologies developed for the land domain should have broad buy-in across relevant government agencies if they are not to generate new forms of technopolitical resistance. Control and ownership of the data generated by such systems should be thoroughly scrutinised, as should the ease with which records can be changed, and where the legal authority rests to do this. The opinions of a wide range of stakeholders involved in the present *de facto* land regulation and registration processes should feed into this.

Policy implications linked to other ACRC domains and city systems

1. **Implications linked to the informal settlements domain.** The actors who are often involved in facilitating land transactions, subdivision and the *de facto* regulation of land are often also heavily involved in informal settlements, either as landowners, brokers or informal planners and developers. Land reforms that attempt to change how land is transacted and taxed could have knock-on effects for owners and renters in informal settlements. Major tenure reforms (such as changes to *mailo*¹ tenure in Kampala) could have substantial implications, given the correlation between this form of tenure and informal settlements. Large connectivity investments could also radically alter land values, leading to risks of eviction on present informal settlement land.

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¹ A form of freehold which dominates much of the city, especially in the periphery.

- 2. Implications linked to the neighbourhood and district economic development domain. Efforts to curtail non-state value capture on urban land could improve the prospects for other sectors of the economy, given the amount that is currently extracted in many cities by various forms of "land entrepreneurs". Enhanced property taxation holds the potential to improve connectivity infrastructure provided by the state, though connectivity could also redistribute economic opportunities around the city in unplanned ways, leading some areas to lose out, as well as generating the "flight" of value from one place to another, pricing businesses out of some areas. Planning any land reforms alongside reforms to other crucial city systems, such as transport, energy and telecommunications, could be important to avoid perverse consequences.
- 3. Implications linked to the safety and security domain. Many of the forms of non-state land regulation and value capture alluded to above are underpinned by violence, particularly involving young men, and related interpersonal and community insecurity. The normalisation of insecurity on urban land has fuelled livelihoods that depend on provision of commodified security in relation to land. Efforts to bolster state legitimacy and capacity to regulate and tax land will need to take into account the knock-on effects on the livelihoods of urban groups currently benefiting from weak state presence, as well as how they might affect the gender dimensions of land insecurity.

1. Introduction

Land is a notoriously challenging issue in African cities. Dysfunctional, slow and exploitative land administration systems, rapid speculation on rising land values, and skewed ownership patterns that reflect colonial and postcolonial processes of elite capture are among some of the issues that plague the domain. A wide range of policies and approaches have been promoted to address issues related to urban land, from titling programmes that have sought to maximise "dead capital" stored in informally occupied land, to taxation regimes that take punitive measures against unproductive land uses, to community enumeration and mapping tools (Acheampong et al., 2022). While these projects and programmes have sometimes been useful, land systems in African cities continue to underserve the needs of the poor and frequently contribute to social, political, ecological and spatial injustices.

In the urban context, the value and usability of land is not only linked to its intrinsic attributes, but also relational ones – for example, its connections with infrastructure networks and its spatial location in relationship to urban opportunities. For the purposes of this report, therefore, urban land is placed in conversation with connectivity. Connectivity is an equally challenging issue in African cities, though significantly less studied at the urban scale in Africa – at least beyond conventional transport planning approaches. Sprawling urban fabrics, out-of-date planning and land use regulation, parallel informal/traditional systems of land management, and ageing infrastructure networks commonly interact to cause significant urban disconnection, spatial fragmentation, isolation and inaccessibility. Improvements in land connectivity have taken the form of transport investments (for example, highways or Bus Rapid Transit), as well as efforts to use planning to support densification and land use alignments. At the same time, residents and neighbourhoods have rapidly become connected in new ways through digital connection and innovation, and the ways in which this is changing urban land dynamics have not yet been much explored.

The theme of land and connectivity forms one of the domains within a wider study of African cities as part of the African Cities Research Consortium. The African Cities Research Consortium (ACRC) is a multi-year programme aimed at the creation of systematic and impactful knowledge on African cities. The ACRC's holistic framework for analysing urban development in Africa has three integrated components – politics, systems and development domains. The politics component uses "political settlements" theory to model how power is configured at the national and city levels, and then analyses how these configurations of power shape (and are shaped by) urban development processes in the given city. The systems component analyses the functioning of the key systems (composed of physical infrastructure and people organised in various ways) that sustain and/or improve urban life in the city. The domains component looks at some of the distinct fields of discourse, policy and practice that have formed around complex, intersystemic development challenges in the city, and analyses how the actors (political, bureaucratic, professional and popular)

engaged in these fields collaborate and/or compete for authority. The diagram below gives an indication of how these three components come together.

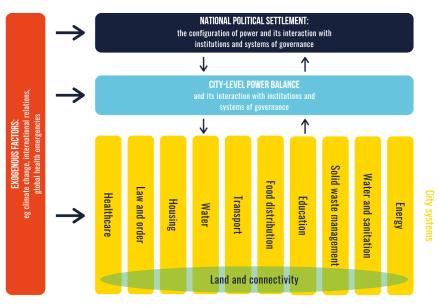


Figure 2: ACRC's conceptual framework

Urban development domain intersections

As part of phase 1 of this programme, the land and connectivity domain supported the development of six city-specific research studies focused on issues related to land and connectivity. This composite report reflects the deep research conducted by teams located in the six African cities selected for this domain: Accra (Ghana), Bukavu (DRC), Kampala (Uganda), Harare (Zimbabwe), Maiduguri (Nigeria) and Mogadishu (Somalia). The research in each of these cities covered a wide range of issues, arranged around three central themes:

- 1. Land tenure, administration, management and conflict.
- 2. Taxation, land value and value capture.
- 3. Infrastructures and networks related to transport, mobility and digital connectivity.

The reports explicitly sought to engage with the historical and political drivers on the contemporary dynamics in each city. The cities are, of course, very different. While Accra, Kampala, Harare and Mogadishu are large capital cities, Bukavu and Maiduguri are smaller regional centres. While some of the cities reflect relatively strong and centralised state systems, albeit with substantial fragmentation of central authority (for example, Harare and Kampala), others (such as Mogadishu), experience significant institutional multiplicity, with a wide range of non-state actors (such as clan elders and al-Shabaab) playing central roles. In Accra, there is more of a hybrid system, in the sense that traditional authorities have some significant recognition and roles within the

state system. A selection of the cities (particularly, Bukavu, Maiduguri and Mogadishu) are heavily impacted by conflict, fundamentally shaping their urban dynamics and land-related issues. For the most part, we did not aim to formally compare the cities, but take each city on its own terms in its national and regional context, and from this distil some crosscutting themes that resonate across cases. Table 1 briefly summarises some of the basic facts and challenges of these cities in relation to land and connectivity.

Table 1: Land and connectivity domain case study cities

City	Description	Governance structures	Key issues
Accra	Capital city of Ghana, located on the southern coast, an anchor of the West African coast.	The city's governance is fragmented among 29 local governments, whose creation is driven by patronage considerations. Yet mayors are appointed by president, which provides a degree of power concentration amid dispersion.	Hybrid land governance and role of traditional authorities. Extensive, localised land conflicts relating to overlapping systems and multiple sales. Rapid spatial expansion of the city.
Bukavu	Mining town located in the eastern DRC (along the border with Rwanda), capital of the South Kivu Province.	A provincial capital and border city, the urban area is divided into three municipalities: Kadutu, Ibanda and Bagira.	Impact of mining on urban economy and ecology, including through inflationary effects on land market. History of conflict (DRC/Rwanda). Impact of aid economy.
Harare	Capital city, and economic centre, of Zimbabwe, a landlocked country in Southern Africa.	The city is governed by the Harare City Council, which has limited powers compared to the Harare province and national authorities.	Economic instability (informal dollar economy) and substantial role of remittances in economy. Legacy of racially bifurcated land regime and fast-track land redistribution. Political tensions between local and national (opposition run city). Incapacity to extend beyond existing major infrastructure, limiting investment beyond corridors.
Kampala	Capital city of Uganda, and one of several economically important east African cities.	Governed through the Kampala Capital City Authority (KCCA) since KCCA Act of 2010, following years of struggle between central government and the previous city council. KCCA is an executive authority, answering directly to central government.	Prevalence of owner-tenant disputes on privately owned land (<i>mailo</i>). Struggle for political control between opposition-leaning city and centralised city authority. Concerns about selling off of government land to elites, often illicitly.

Maiduguri	State capital of Borno State in northeastern Nigeria.	The city straddles land between four Local Government Areas – Konduga, Jere, Maiduguri Metropolitan and Mafa.	Insecurity and violence (Boko Haram conflict). Growth of IDPs, both in camps and urban areas. Flooding and ecological management issues.
Mogadishu	The capital, largest city, and major port of Somalia, located in the horn of Africa.	City has unusual status as part of Benadiir Region, but not with its own state, hence directly governed by federal government. President appoints mayor and deputymayors from specific clans; mayor appoints DCs. Most DCs are beholden to mayor, though one or two have independent militias/power bases.	Limited state control, with key role for clan and religious, elders, al-Shabaab. Strong connections to horn cities (Addis/Nairobi). Impact of aid economy. Climate/conflict driven urbanisation. Growth of IDPs. Role of diaspora in land investment (facilitated by advanced telco sector).

The intersection between land, connectivity and African cities presents new and exciting avenues for considering urban change. While there is a substantial literature on land in Africa, questions related to urban land have been considerably less developed – though this has changed quite rapidly in recent years. How claims are staked, markets developed and attributes valued are in flux in the urban context, impacted by changing infrastructural landscapes, migration patterns and infrastructure transitions. Moreover, the relationships between land and connectivity – its spatial location as well as connections to key networks and opportunities, including through digital infrastructures – enabled a fresh set of insights to emerge from across the city studies.

To attend to these questions, this report is structured into six sections. In the following section, we consider some relevant existing areas of academic debate. This is far from being an exhaustive literature review, given the extensive literature on urban land and related areas. We focus instead particularly on the contributions of recent literature from the past five years or so, specifically on questions of urban land administration, land value, value capture and urban land conflict. This builds on our earlier concept note that discusses a wider range of literature on land and connectivity (Acheampong et al., 2022). Following this, we outline the methods and approach, including the work that went into data collection and analysis. Section 4 then turns to a number of key crosscutting findings. Certain issues - such as "last mile" provision of public transport were explored in some city reports but not others, so in this synthesis paper we focus only on issues covered in some depth in all or most of the city reports. We have also specifically highlighted findings that we believe push the debates on land and connectivity forward and slice into the existing body of work in new ways, or where the juxtaposition of different cities in our set sheds new light on more conventional topics, such as land administration or property taxation. After discussing seven key issues that emerge from our crosscutting analysis, Section 5 considers some of the ways in which urban land and connectivity sits within the political settlement, engaging specifically with the ACRC political settlement mapping and considering some of the implications for urban reform. In the conclusion, we reflect on the findings and their interlinkages, and on implications for future research priorities.

2. Recent debates on urban land in Africa

Land is a complex resource that embodies the histories, memories and values of people and societies. In Africa, where colonial exploitation has been overlaid with complex reforms and hybrid systems, land is characterised by struggle for recognition of claims, counterclaims, possession, dispossession and resistance (Kelly, 2021; Lombard and Rakodi, 2016; Verma, 2014). These conflicts reveal the deeper social, economic and political dynamics that make land not only a material resource, but also a social and symbolic one that shapes and is shaped by identity and belonging (Adam, 2020; Dadashpoor and Somayeh, 2019; McMichael, 2016). To address the mounting demands for efficient and just land systems in African cities, a clear and coherent understanding of its multiple dimensions and meanings is essential. So too is an understanding of the ways in which land's value has come to take shape, in a context of both local specificity and global circulations. These are some of the issues that recent research and scholarship has grappled with.

While the majority of work on land in Africa has not focused on the unique dimensions of *urban* land, there is considerable contemporary debate. In the remainder of this section, we provide a summary of recent literature on particular aspects of urban land relevant to the findings of this paper: namely the governance of urban land; land value; land value capture; and land conflict, particularly in urban peripheries, where it is increasingly concentrated. While these are only a subset of the themes in the current land debates, as we cannot consider the literature on urban land in Africa in full and have scoped a broader range of literature elsewhere (Acheampong et al., 2022), they reflect some of the most pressing land challenges faced by many African countries today.

2.1. Governing urban land

The governance of urban land in African cities involves a diverse array of actors, including national, regional, municipal and local government agencies (as well as metropolitan governance actors in some cases); business and private sector actors (including property developers, planning consultants and infrastructure firms); associations (including of property surveyors, valuers, and so on); traditional authorities; non-governmental organisations (NGOs) and community-based organisations (CBOs) focused on land rights; informal brokers and other forms of intermediaries; development finance institutions (DFIs); bilateral and multilateral development partners, and buyers and sellers of land themselves. There is a sizable literature on urban land management, and relatedly land tenure, in a set of African countries – particularly (within the Anglophone sphere) in relation to cities such as

Accra, Addis Ababa, Dar es Salaam, Kampala, Kigali and Nairobi (see Collord et al., 2021: 18-20, for an overview; and Home, 2021, for a more extensive exploration of urban land governance on the continent). Much of the urban literature has focused on issues of hybrid or conflicting tenure systems (Beall, 2006; Chitonge et al., 2017; Sim et al., 2018; van Overbeek and Tamás, 2020; Akaateba et al., 2018; Pieterse and Coggin, 2023), attempts at urban and peri-urban tenure regularisation (Kombe and Kreibich, 2000; Ali et al., 2014; Magina et al., 2020; Mbilinyi et al., 2023), and process of government land acquisition (Owoeye and Adedeji, 2015; Adam, 2019).

While most countries have experienced successive reform efforts related to urban land governance in the postcolonial period, in recent years there has been a growing realisation that the complex nature of urban land management requires innovative interventions and strategies. As a result, many African urban authorities have increased their use of technologies (of various sorts) and advanced technical instruments. These technologies, while often attempting to be efficient and objective, are imbued with political motivations and assumptions. The examination of the interface between land use management and technology is therefore a key arena of inquiry that explores how different actors interact and affect change in the city through political and technical processes (Antonio et al., 2021; Guma and Monstadt, 2021). Political processes underpin the establishment and implementation of policies, laws and institutions that regulate land rights, responsibilities and incentives (Barry, 2020; Bartley, 2019; Chitonge and Harvey, 2021; De Boeck, 2020). Technical processes are concerned with the generation and analysis of data, the design and assessment of alternatives, and the monitoring and evaluation of outcomes. Yet these processes are deeply interlinked (Bertrand, 2019; Fogelman and Bassett, 2017; Samuel and Ayeni, 2019). Thus, land governance is necessarily technopolitical, meaning that the technical instruments are necessarily shaped by power and have political consequences. By examining the technopolitical nature of urban land interventions, it is possible to deconstruct not only how they address challenges of urban land management, but also the significant ways in which they influence the formation, deformation and reformation of collective action and urban life (Karvonen, 2020; Lesutis, 2022).

One of the complexities in the management of urban land relates to the lack of transparent and coherent information. Despite the challenge of incommensurate data and conflicting rationalities, the importance of land information that is accurate, timely and affordable is the cornerstone of every land management reform. Technology, for example the deployment of digital systems, is seen as playing a vital role here, while also helping to make reforms more adaptable, scalable and participatory. Antonio et al. (2021) demonstrate how the Social Tenure Domain Model (STDM) tool, developed by UN-HABITAT's "Global Land Tool Network", can help achieve or enhance flexible and participatory land tenure security. The STDM aims to capture digitally the relationships between people and land, independent of the level of formality, legality and technical accuracy. This could have advantages, such as better collaboration and coordination, fewer land disputes and conflicts, more confidence and recognition of the community, lower risk of forced evictions, and improved relationship with authorities. Similarly,

Wassie et al. (2018) show how a free and open-source software can enable semi-automatic delineation of cadastral boundaries. In this context, land use planning is increasingly becoming techno-intensive. Meanwhile, banks and other lenders in contexts such as Tanzania are engaging in their own sociotechnical processes to try and make urban land titles more stable and workable as collateral, in an effort to develop institutions that can bolster the "property-credit nexus" (Manara and Pani, 2023a). All of these processes raise questions about the agency of the people who live and work on the land, the viability of the technology in terms of capturing their multiple (and often conflicting) forms of knowledge about land, and the capacity of the technology to adapt.

The ways in which technology can risk excluding or erasing other uses or meanings of land is epitomised by the technocentric planning associated with the idea of the "smart city", which is not a neutral or technical process, but a political and contested one that is influenced by local realities (Kobashi et al., 2020; Smith and Martín, 2021). Many African cities that aim to become a "world-class city" by adopting information and communication technology (ICT) find their enthusiasm slammed by local realities on the ground (Guma and Monstadt, 2021; Kobashi et al., 2020). This often results from a lack of proper understanding of how people's use of technology in their everyday lives and interaction with authorities might conform (or not) to the intended path.

Whether or not advanced technology is employed, one of the persistent challenges of land use planning in African cities (and many cities globally) is the exclusion of residents on low incomes from the decisionmaking processes. Those on low incomes are frequently left out of the planning agenda, or their needs and preferences are subordinated to those of the powerful and wealthy, particularly where strong normative agendas around commercialising land override the plural ways in which urban land is actually used and transacted (Pieterse and Coggin, 2023). To overcome this, Home (2021) calls for innovative approaches to land administration, such as participatory mapping and fit-for-purpose land tools in tandem with geospatial technology to bridge the gap between formal and informal land rights (to some extent echoing the aims of the STDM). However, implementing such a system would require institutional, legal and spatial adjustments (Williams-Wynn, 2021) that create an enabling environment for an adaptive and incremental planning which engages both state and non-state actors to provide different channels for transactions (Barry, 2020).

The governance of urban land is also shaped by everyday – and often informal – dynamics that shape city life, and the ways in which people themselves engage with technology and develop their own land-related technologies. In his recent work on "technicity", building on the notion of *people as infrastructure* (Simone, 2004), Simone (2021) emphasises how urban residents deploy highly advanced and calculative sensibilities, for example, in the navigation of urban land and housing markets and the development of properties. Various situations demonstrate a pragmatic attitude of assembling and reassembling diverse elements, making the best of what they have by, for instance, demonstrating a basic tolerance of diversity and difference, and how their

everyday practices of communication and exchange constitute a vital infrastructure for sustaining their territories, communities and identities. Indeed, research has shown how we cannot understand land governance and land markets in African cities without taking into account the everyday practices of the urban majority, living in margins and informal spaces, who are as central to real estate markets as anyone else (Napier et al., 2013). This reminds us of the dynamic and performative aspects of land as a critical resource of urban life, where human bodies occupy and transform spaces in relation to each other and to the material environment. But also it highlights how the dominant urban order – which seeks to control and exploit urban residents, through the use of technology and state power, to manipulate and extract value from their behaviours, inheritances and labour – is challenged (Simone, 2021).

2.2. Land value

Given the soaring land values in many African cities, scholars have drawn attention to concerns related to affordability for poor urban residents. The value of land in urban Africa is shaped by multiple forces, both external and internal, many of which are driving prices up far beyond the reach of the majority of the population.

Externally, for instance, global financial flows into the African urban infrastructures have a significant impact on African land values, opening up new areas (such as urban peripheries) for development. These investments also facilitate new possibilities for local capital accumulation, especially in the area of real estate development and speculation. This leads to the emergence of a class of urban rentiers who benefit from land ownership and property investment, and who influence urban politics and potentially fuel forms of urban conflict (Lawanson and Agunbiade, 2018; Steel et al., 2019; Goodfellow, 2022; Gillespie, 2020). These possibilities are sometimes the only possibilities for protecting savings and capital accumulation, where financial markets and banking systems are poorly developed.

Certain forms of development aid can exacerbate this problem in urban areas, especially if this results in the financialisation and commodification of land beyond in ways that challenge existing systems of land delivery and management in African cities, given their social and economic history (Antwi and Adams, 2003; Mawdsley, 2018; Steel et al., 2019; Carolini, 2020). For instance, the implication of wellintentioned aid, such as rent provision for internally displaced people (IDP) camps in post-conflict countries like Somalia, can unintentionally inflate land and property values, making housing unaffordable for locals not receiving aid, thereby worsening inequalities and possibly causing more displacement. In some parts of the continent, such as South Africa, financialisation of housing is also bringing in corporate landlords as well as more exposure to financial shocks and debt (Migozzi, 2020), generating land market dynamics that fuel forms of gentrification by forcing the original residents to leave. However, as new financial instruments are relatively recent developments in African cities, the broader effects of these are not yet well understood and may yield unexpected consequences, including for the practice of democratic politics (Mizes, 2023).

International financial inflows are not, of course, the only factors that inflate urban land values. Domestically, market demand, zoning regulations, infrastructure availability, environmental conditions and social preferences influence the price of urban land (Weldesilassie and Worku, 2022). In addition, there is the significant role of speculation, driven by both domestic and diasporic investment. Land speculation, which refers to the act of buying land and waiting for its price to increase, then selling it for profit, reduces the availability of land for current use and pushes urban development to the outskirts of the city, increasing the cost of social and economic transactions for those living in the peripheries out of necessity (Meth et al., 2021). An example of this is Shashemene City, Ethiopia, where land speculators made about USD230 per square metre per year from land appreciation, but caused about \$1,810 per square metre per vear of social costs for the society (Gemeda et al., 2021). Linked to speculation is also the diasporic investment where emigrants purchase urban property in their home countries. This has had an impact on African land and housing markets. An example of this is the new diaspora suburbs in Harare, where diasporic investment is more visible than ever before (McGregor, 2014), a phenomenon also observed in Addis Ababa (Goodfellow, 2017). This often leads to urban sprawl, or the spreading of cities into rural areas, not just because of a lack of availability of more central land but also because of its decreasing affordability.

Another crucial factor that shapes the value of land is the regulation of land use. For instance, land value may change when land is rezoned for commercial purposes, when high density is allowed, or when environmental protections are removed. It is, however, important to acknowledge that the regulation of land use only affects land value when there are land use regulations in place and they are implemented relatively consistently. This is rarely the case in African cities, where plans are often dated and regulations often unimplemented (Goodfellow, 2013) though there are exceptions, for example, cities in South Africa and Rwanda. For instance, stringent and often-changing land use regulations in Kigali, combined with targeted infrastructure investments underpinned by Rwanda's "Vision 2020" and Kigali Master Plan have had profound consequences on the value of land in different parts of the city. Very little of this has been recaptured for public investment, instead largely benefitting land and property owners, and promoting gentrification and displacement of low-income residents who cannot afford the rising rents or prices, especially where the state is centrally involved in expropriating and developing large areas of urban land (Goodfellow, 2014; 2022; Uwayezu and de Vries, 2019; Nikuze et al., 2020).

2.3. Land value capture and land-based financing

Land value capture (LVC) focuses on recouping a portion of the increased land value resulting from factors such as public infrastructure improvements or changes in zoning regulations/land use rights. The approach is based on the idea that when public actions enhance land value, the public sector should reclaim some of that increment. This idea has been of increasing interest with respect to Africa (Brown-Luthango, 2011; McGaffin and Napier, 2014; Goodfellow, 2017; Berrisford et al., 2018; Biitir, 2019). There is some

debate as to whether property tax should properly be considered a form of land value capture, given that it does not necessarily depend on a public investment driving value uplift, but it is nevertheless often considered an aspect of a broader category of "Landbased financing" (LBF) (Berrisford et al., 2018) and in many ways the ultimate way of translating land values into government revenue.

In the context of Africa cities, where there is mounting speculation and where local government are often undercapacitated, there is widespread concern about the ability of city authorities to capture value from rising value of land (Biitir, 2019; Gemeda et al., 2021). Land-based financing mechanisms can offer multiple benefits for infrastructure development, including raising local revenue, facilitating public-private partnerships, promoting economic growth and spatial transformation, improving municipal borrowing capacity and credit rating, and sharing property market risk with the private sector (Berrisford et al., 2018). There are various instruments of LBF, such as land sales, land leasing, betterment levies and development charges, as well as property taxes. However, LBF also requires careful planning and implementation, and in many cases depends on creating additional property values through public interventions - that is, to facilitate "land value capture", strictly defined (McGaffin et al., 2019). Although the capturing of land value can provide the state with resources for investment, it also risks fuelling the urban "growth machine" of commodified and overpriced land discussed previously, creating a continued upward spiral of asset appreciation that further pushes out the poor (Weber, 2021). In this sense, a recurrent property tax - though in many ways more challenging to implement – is a superior instrument of redistribution to other forms of land-based finance, funnelling urban wealth into public finance for redistribution without actively stimulating land value uplifts that can sometimes make the land unaffordable to all but the wealthy few. However, property tax is complicated by the fact that there are widely different models adopted, some of which only tax buildings without even taking into account land value (Zebong et al., 2017).

Thus far, the lack of reliable and accurate methods to assess the value of land and property is a major challenge for property taxation in African cities (Babawale, 2013; Monkam and Moore, 2015; Franzsen and McCluskey, 2017; Berrisford et al., 2018). This creates inefficiencies and inequities in the tax system and limits the revenue potential for municipal governments. Efforts to adopt advanced valuation methods to implement effective property taxation have widely failed in urban Africa. The causes of this failure differ in each context, but to a substantial extent they relate to political economy factors, elite resistance and how property tax interacts with other land policy/land reforms (Jibao and Prichard, 2015; Goodfellow, 2017). However, there are some relative success stories. Remarkably, the local government in Hargeisa, Somaliland, used satellite data and surveys to register properties and their occupants for taxation in 2005. This increased the number of taxable properties from 15,850 to 59,000 in eight months. Along with automated billing, this resulted in a 248% increase in revenue (Collier et al., 2018; Haas, 2017). Similarly, in Lagos, reforms to broaden the tax base and enforce collection since 1999 have enabled the state to raise its tax revenue from \$200 million to over \$1 billion in 2011 (Collier et al., 2018. Behind this

was the use of a private company to register properties in the city – leading to an increase from 45,000 enumerated properties in 2007 to 750,000 by 2010 – as well as a major civic education drive and new approaches to enforcement (Goodfellow and Owen, 2020). Donors have been instrumental in supporting property tax reform in Africa, often framed around "good governance" and urban decentralisation.

2.4. Land conflict in urban peripheries

Recent literature has developed a keen focus on African urban peripheries as spaces with specific land dynamics, as well as a propensity for land conflict (Mabin et al., 2013; Sawyer, 2014; Harris and Lehrer, 2018; Meth et al., 2021; Sawyer et al., 2021). Factors such as poverty, unemployment, conflicts and environmental degradation in rural areas drive many people to informal settlements around cities, where land is generally cheaper (Kombe, 2005; Follmann et al., 2021; Neimark et al., 2018; Adam, 2020; Neimark et al., 2018). There are also wealthy enclaves on urban peripheries, where new estates are formed for higher-income settlement – sometimes driven by private developers and at other times by states themselves (Meth et al., 2021). Irrespective of drivers, migration to the peripheries complicates urban land management for the authorities, as peripheral sites often lack basic infrastructure and services, such as schools, hospitals, sanitation and security. They are also often sites of overlapping authority between municipalities, or between metropolitan and city governments and neighbouring district or local councils with significantly less authority and resources. Sometimes falling between rural and urban land tenure regimes, there can be sites of blurred governance and "loopholes" in land policy, where regulatory regimes are especially lax (Kinfu et al., 2019; Meth et al., 2024).

Another significant way in which settlements in urban peripheries pose challenges is that they are a major source of tension and contestation over land, and often this plays out beyond city borders, where local governments are especially weak and underfunded (Mabin et al., 2013; Akaateba et al., 2018; Meth et al., 2021). In periurban areas, there are three primary categories of land conflicts. The first type relates to conflicting interests over land use. The second type involves power struggles between individuals, institutions, or both, over ownership of the land. The third type stems from discrepancies in legal and normative frameworks (Kombe, 2005; Dadashpoor and Somayeh, 2019). Such conflicts are often mediated through plural legal systems. A major drawback of this is that some of the actors use their flexible and negotiable authority over land to enrich themselves and gain power, while neglecting the needs of ordinary people (Barry and Danso, 2014; Chiweshe, 2021). Women are also negatively affected in many cases by the customary dispute resolutions (Bhatasara, 2021; Ngang, 2021). Taken together, the rapid and complex changes in peri-urban areas require land policies and institutions that are more adaptable and inclusive than current ones - but this needs to be weighed against the question of capacity to implement, which can be even more challenging for highly flexible policies.

To conclude, in this section we have given a brief summary of some key threads in the existing literature on urban land, focusing on four main topics: land governance; land

value; value capture and property taxation; and land conflict, particularly in urban peripheries. These issues form an important backdrop for the research undertaken by the ACRC land and connectivity domain. In the next section, we provide a brief overview of the methodology underpinning research in the domain, before discussing key themes that have emerged from the research conducted in six African cities: Accra, Bukavu, Harare, Kampala, Maiduguri and Mogadishu.

3. Methodology

This paper reflects the synthesis of several methodological processes, which we outline below.

3.1. Selective review of the literature on land in urban Africa

To begin this process, a literature review was undertaken to assess the state of the field and determine the key urban land debates (as discussed above). With a particular focus on African cities, we first developed an annotated bibliography related to questions of land administration, land value, property taxation, land conflict and connectivity infrastructure in urban areas. In doing this, we found that South Africa was over-represented in the academic scholarship on African cities. We also found considerable scholarly interest in the issues related to hybrid land governance and land tenure systems. The issues around land at the fringes of cities is particularly vibrant in academic debates at the present time, having shifted from a focus on the "peri-urban" as a space of transition from agricultural to urban land use towards a growing interest in how connective infrastructure produces and reconfigures the urban periphery. This literature review, coupled with early workshops with the wider team, assisted in creating the data collection framework of the city studies.

3.2. City studies in six African cities

In each city, a "mapping note" (which consisted of an assessment of existing knowledge in specific cities, based on existing literature and policy documents) was produced, followed by a longer city-level domain research report, which was based on primary data collection as well as documentary sources. The content and structure of the city mapping notes and reports was guided by the domain concept note, which set out the following broad areas to be explored: i) land tenure, administration, management and associated conflicts; ii) drivers of land value, value capture and property taxation; and iii) infrastructures and networks related to transport, mobility and digital connectivity. Unlike some other ACRC domains, the city studies were focused primarily at the city (rather than, for example, neighbourhood or settlement) scale. This is because we believed that to focus solely on particular areas might provide in-depth data on particular forms of land tenure and dynamics in specific places, but miss the citywide dynamics, overlaps, governance conflicts and wider connectivity issues we seek to explore.

The majority of the insights in this cross-city domain report have been drawn from the six city-level studies. Each study was led by an expert with a long track record of work in the specific city. Generally the studies included a team of researchers working together to collect and analyse the data. Each report covered the following issues: current arrangements in the land and connectivity domain, including the main actors involved in governing land and connectivity; key challenges that the city faces in terms of land and connectivity, and how these "problems" are both understood and addressed by different actors; the history of land and connectivity, and how past processes have shaped the current dynamics; and the future trends for the domain, such as projects on the horizon or processes that are shaping the direction of the sector.

We also asked each city team to provide certain elements in the report for the explicit purpose of comparison across cases. These included case studies of specific neighbourhoods that have seen rapid value change, and an analysis of the drivers of this change; a table setting out which government agencies were responsible for different aspects of land governance in the city; and a table detailing the nature of the property tax system, responsible agencies for different aspects of taxation, and other key aspects, such as the scope of the tax base and basis for property valuation. The reports also included first drafts of suggested priority complex problems for potential further development in the next phase of ACRC.

The six city studies were largely qualitative, drawing on secondary sources (such as policies, government documents, reports, existing studies, and so on), interviews with key stakeholders (such as officials, land brokers, community representatives and developers), and the authors' extensive experience and observations in the sectors. In the remainder of this cross-city domain synthesis report, we refer to the six city studies as follows: Accra (Biitir and Farouk, 2023); Harare (Chatiza et al., 2023); Mogadishu (Mohamed, 2022); Maiduguri (Monguno et al., 2022); Bukavu (Nzweve, 2023); and Kampala (Serwajja et al., 2023).

3.3. Workshops (online and in person) to understand insights across cities

A series of cross-city workshops were conducted which brought together city domain researchers, and the core team, to co-develop the framework and co-integrate the findings. This includes two Zoom meetings and two in-person meetings (linked to wider ACRC workshops held in Nairobi in 2022 and Dar es Salam in 2023). Further discussions took place at the interim and final city workshops in each of the six cities. The cross-city meetings were used to discuss the interim findings, adjust the research framework and sharpen the comparative analysis by placing emerging findings from different cities side by side. They allowed for the research process to be collaborative, iterating between the ACRC-wide templates, the domain approach, and each city's findings. The core land and connectivity domain team have also presented draft findings from the report at conferences and seminars in the UK and South Africa, enabling feedback to be fed into the final draft.

4. Crosscutting findings

The six city studies generated a rich array of insights. Some of these were highly city-specific, and are best considered in relation to the findings emerging from other ACRC domains, city-of-systems and political settlements studies in that specific city. In the following subsections, we focus instead on crosscutting issues that emerged as being significant across all or several of our city studies, with the potential to generate wider learning about dynamics of urban land and connectivity beyond any single case.

4.1. Urban land value and drivers of land value change

As noted above, one of the key issues we set out to examine was urban land value and its relationship to connectivity infrastructure. While the nature of this relationship is often considered obvious, it is subject to a range of assumptions that are rooted in experiences of urban growth and development in the global North. These assumptions also infuse the literature on land value capture (LVC). We therefore believed it to be important to unpack how land value is created, manipulated, understood and extracted in the cities under study here, and the role that connectivity plays within this. In this section, we highlight some of the main factors driving increases in land value across our cases.

4.1.1. Public connective infrastructure

Assumptions in the existing LVC literature include the idea that public infrastructure is one of the primary (usually *the* primary) determinant of land value "uplift", along with changes to formal zoning/land use rights, and that value gains from such public investment and zoning change are quite easy to identify and publicly capture for reinvestment. Hence the claim is often made in LVC discourses that land in itself has no inherent value, and its value comes from public investments in infrastructure and changes in regulatory status (Crook and Whitehead, 2019; Silva, 2023). The general dynamism caused by urban expansion and economic growth is also sometimes considered a factor contributing to land value that can subsequently be recaptured (Kresse et al., 2023). In our cases, however, we find a range of other determinants of value that impact the prices paid for (and profits made from) urban land. These have important implications, not only for value capture but also for the transparency and accessibility of information about land values, and the ability of city governments to exert regulatory control over urban land.

As would be expected, we do often see a strong relationship between the provision of connectivity infrastructure and rising land values. In Maiduguri, for example, the new road and bridge over River Ngada contributed to the price of some plots more than trebling between 2018 and 2022 (Monguno et al., 2022: 24). In Kampala, too, evidence of major uplift in land values after roads are upgraded to tarmac is plentiful (Serwajja et al., 2023). Prices for five-bedroom properties in Bukavu are as much as ten times higher where plots are located close to major arterial roads as compared to areas of the city that are poorly connected, and the price differential for undeveloped land is

often even higher (Nzweve et al., 2023). However, it is not clear that roads necessarily always have this effect, and sometimes they can even do the opposite. In many cases it is the presence of other kinds of infrastructure and investment, which may not be connective in nature, that contributes to the desirability and rising value in an area. For example, in the Dawhenya area of Accra, it is the purchase of large plots of land by real estate developers, rapid housing development, the construction of an industrial enclave and planned new airport that have contributed to major land value increases rather than a good road network (Biitir and Farouk, 2023: 17; see also Section 4.2 below on growth without access). More generally, "business prospects" - which were considered to be rooted in a range of factors, from roads, to flood risk level, to whether the plot is hidden from view behind other plots – were considered by brokers to be central to land values in Kampala (Serwajja et al., 2023).² It is also clear that in some areas of our other cities, such as the Fori area of Maiduquri or Wabeeri in Mogadishu, tarred roads are not necessary for major land value rises to happen (Monguno et al., 2022: 24; Mohamed, 2022: 21). In cases such as Maiduguri, the provision of drainage is as important as roads in determining land value, especially since roads without drainage can exacerbate flooding (Monguno et al., 2022).

Our cases also suggest a need to nuance understandings of the relationship between roads and land value by taking into account the extent to which roads are actually used, and what might inhibit this. In another part of Maiduguri, we see roads such as the Pompomari Bypass constructed in 1989, around which newly connected land remained cheap and the road use low, partly due to regular robberies on the road. Only with active efforts to increase security, through features such as street lighting and the relocation of an army base nearby, did the road become more secure and land values start to rise (Monguno et al., 2022: 25). Ironically, these developments led to a scramble for land in the area that ultimately led to new forms of conflict and insecurity. In some cases where a major bypass/expressway cuts off areas of the city from access to other areas, land values can even seriously decline – as seen most clearly in the case of the Kampala–Entebbe Expressway (Serwajja et al., 2023; see also Goodfellow and Huang, 2021). In cases such as this, *speculation* in relation to anticipated roads may lead to a rush for land that inflates values in certain areas, while the actual arrival of the road has impacts that push the value back down.

4.1.2. Private infrastructure

When thinking about the principles embedded in land value capture, which usually involve the public recapture of gains from public investment, it is also important to note that in some cases much of the infrastructure (including roads) that bolsters land values is *privately* provided. This is most obviously the case in parts of Mogadishu, where areas such as Darusalaam Village involve a suite of privately provided "wrap-

^{2 &}quot;The brokers in downtown Kampala [Kisenyi area] deployed the metaphor, 'plot ensava', to equate land to steak that has a perfect blend of 'meat, bone and fat'. In essence, 'plot ensava' is suitable for any nature/type of business and brings maximum returns, and for that reason, it is snapped up by any buyer as soon as it is available on the market" (Serwajja et al., 2023: 40).

around services", such as schools, hospitals and green areas, but also private provision of roads, including the commuter road towards the city (Mohamed, 2022: 21-22). The relationship between public and private actors and how this shapes land value is always important, but manifests in interesting ways in a number of our cases. For example, in parts of Accra where public infrastructure in the Airport Residential Area initially boosted land prices, this was followed by a price decline of around one-third, from US \$3m to \$2m per acre from 2018 to 2022. This was not a decline in the land's inherent *value*: prices did not decline because of a reduction in the desirability or demand for the land, but due to arrangements between landlords and private developers, whereby landowners agree to reduce the price of the land in exchange for a stake in the developments on the land (Biitir and Farouk, 2023: 15).

Such arrangements remind us of the need to distinguish between value and price, and that surface-level information on land transactions and prices may not reveal underlying land values. Yet where sale prices affect the *perception* of the value of land in an area, they can affect demand and therefore have an effect on actual land values, inflating or deflating the market accordingly.

4.1.3. Politically motivated overpricing

We see this distortion of the relationship between price and value in a different way in Kampala, where the government has actively inflated the land market in some areas by purchasing land at prices above market value from the Buganda Kingdom, as part of its strategy to weaken the power of the Kingdom (Serwajja et al., 2023). This can have an inflationary effect on land values in the city, illustrating that there can be political drivers to increases in urban land values, as well as economic or regulatory ones.

4.1.4. Information asymmetries

The above examples relating to the multiple, often unanticipated drivers of land pricing are also linked to a broader challenge of information asymmetries and the effects that these can have on land value, as well as on government valuation processes for the purposes of property taxation. In contexts where land transactions take place overwhelmingly in informal spaces, information available about previous sale prices can be limited or inaccurate. When this lack of information is combined with money laundering or other practices whereby land and property are used as a "bank", and some people pay substantially over market value, the principles by which land value would normally be determined are thrown into disarray. This is often exacerbated by land brokers, who in Kampala are able to make enormous profits by charging as much as twice the amount to the buyer as they actually pay to the seller, keeping this disparity concealed (see Section 4.3 for a fuller discussion). Our Kampala team's research found that "the role of the land seller, buyer and government valuers in the determination of land values in Kampala city seem to be progressively decreasing while that of brokers/dealers is gradually increasing", with the withholding of information between buyer and seller deliberately used to increase their own profits (Serwajja et

al., 2023: 44). Brokers also play crucial roles in setting land prices in Mogadishu (Mohamed, 2022: 34).

A lack of transparency in land transactions can be exacerbated by multiple simultaneous sales of the same plot, often by different family members, as is common in Accra (Biitir and Farouk, 2023: 21; see also Asafo, 2022), which can generate confusion about land values in a given area. Thus, while the value of land will still of course be shaped by forces of supply and demand, that supply and demand is influenced by prices paid for other properties and the nature of available information about these. Moreover, if government valuations for tax purposes depend on registered market values to determine taxable value, these distortions in price can result in substantially under- or overvalued properties – usually the former – for tax purposes. In many cities, a sale document with "fake" prices is often signed for the purposes of taxation, along with the "real" document – but inaccuracies in registered market value can also unfold in less intentional ways.

4.1.5. Money laundering

As noted above, money laundering can often produce huge inflation in land prices – for example in Kampala, where one respondent said that "some land buyers ask landowners with land of interest to name their price. For instance, land that was worth 100 million shillings was bought at 300,000USD [equivalent to 1 billion shillings]" (quoted in Serwajja, 2023: 43). This may or may not impact wider urban land values, depending on the extent of laundering and how it affects broader demand for plots. This is an especially significant problem in Bukavu, where the boom in coltan, gold and other minerals meant that "Entrepreneurs who have accumulated funds in the mining sector rushed to urban land"; since these people "were ready for anything, at any cost" and significant in number, there have been broader inflationary effects on land values in the city, making it the second most expensive in the whole country (Nzweve et al., 2023: 22).

4.1.6. Security

Another factor that contributes significantly to land value, alluded to above in relation to roads in Maiduguri, relates to security. It is clear in the most conflict-affected cities in our set, such as Maiduguri, Mogadishu and Bukavu, that the security of a given area can have major effects on land value – potentially more than the presence of infrastructure. Sometimes presence of security in an otherwise highly insecure city is provided by public agencies, as is the case in the Waaberi area close to Mogadishu's international airport (Mohamed, 2022: 21). Yet it can also be private, commodified security that bolsters value – as in the case of Mogadishu's emerging gated communities (ibid: 22), or the role of actors such as "landguards" in Accra, discussed below in the section on non-state value capture. Meanwhile in Bukavu, it is insecurity in surrounding areas that drives up the value of urban land, regardless of specific efforts to securitise urban land itself (Nzweve et al., 2023). In Mogadishu, the perception of security by elites plays a key role in urban land value (Mohamed, 2022: 32), and a

further interesting dynamic has also evolved, whereby the inclusivity/diversity in clan terms within a given area seems to bolster land value, partly as these areas are seen as less vulnerable to attack (Mohamed, 2022: 31-32).

4.1.7. Geographical constraints to growth

These have played a role in rising values in some of our cities, in the sense that hard boundaries, such as mountains, lakes or otherwise undevelopable land, limit the capacity for the city to expand and thus are a contributing factor to the pace of land value rise. This is most obvious in the case of Bukavu, where the increase in population from 500,000 to 1,700,000 in the last three decades has largely had to be accommodated within physical limits of 60km², intensifying land value increases in the city (Nzweve et al., 2023).

4.1.8. Digital connectivity

A final factor that our research highlights as having potential impacts on land value relates to digital connectivity – especially in cities where this may not yet be evenly distributed within a city, or where its unequal distribution means that certain areas become hotspots of economic activity. There can be public and private elements to the provision of this, but for the most part it takes place within the private realm. More generally, the role of digital connectivity in relation to urban land is examined in the "digital connectivity" section below.

In conclusion, while further research is needed on the dynamics of land value in cities such as those in our set, it is important to recognise this diverse range of factors that feed into land value and that play a role in shaping supply and demand – and that factors such as security, money laundering, private infrastructure and information asymmetry may play a major role, alongside improvements in public infrastructure, regulatory change and population growth. These factors can make the values of urban land somewhat "anarchic", in the sense of not conforming to the conventionally accepted structural drivers and orders usually associated with the determination of land value.

Since all of the above issues take place in all our case study cities against a backdrop of rapid population growth, we now explore a particular aspect of this that has emerged as significant in some of our cases: the relationship between growth and connective infrastructure in urban peripheries.

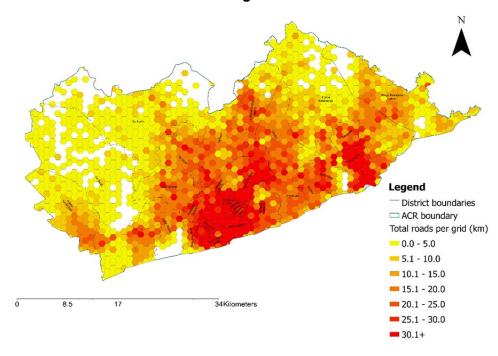
4.2. Growth without access in urban peripheries: How land tenure dynamics shape and inhibit connectivity

As Africa has urbanised rapidly, the continent's major cities have expanded in physical size to accommodate the rapid population growth and associated activities. Access and connectivity infrastructure are key determinants of urban growth. Geographical access provided by trunk road infrastructure, for example, opens up hitherto peri-urban land for development, drives widespread land speculation and provides linkages between

urban core and peripheral locations (Webster and Muller, 2009; Simon et al., 2012). However, beyond trunk roads – which tend to be regional, connecting several settlements – we find spatial differentials in the distribution of basic road infrastructure which provides critical connectivity and access within Africa's rapidly growing conurbations. Across the six cities studied in this domain, unfettered and unplanned sprawl is a prominent feature of their physical growth. Consequently, emergent physical developments, mostly residential areas in peri-urban locations, have limited connectivity and poor access to opportunities that are largely concentrated in the established historical core areas of their respective conurbations. Overall, public transport coverage and accessibility are poorer for the rapidly growing suburban and peri-urban residents (see, for example, Sietchiping et al., 2012; Bryceson et al., 2003; Campbell et al., 2019; Melbye et al., 2015).

This phenomenon of urban "growth without access", whereby large areas have developed without the basic access and connectivity infrastructure (roads) and adequate public transport services, can partly be explained by the interplay of land tenure and land market processes. Road infrastructure coverage and connectivity in Accra, for example, are unequal. Instead, a broad pattern can be observed in Figure 3, whereby road network length per km² is highest in the more central locations but sparse in the peripheral locations. Average road length per km² was found to be highest (25-30km) in the more central locations but sparse in the peripheral locations (below 10km/1km²). Regarding the surface condition, of the estimated 20,452.42 km of roads in the wider conurbation, less than 30%, located mostly in the historical core and more affluent coastal suburban neighbourhoods of Accra, are paved.

Figure 3: Road length index map of ACR showing the distribution of roads at 1km x 1km grid resolution



There appears to be a strong overlap between the prevailing land tenure system and the observed distribution of road infrastructure within the Accra conurbation. Specifically, we find that areas within the historical core and with origins of growth that fall within the state-owned land tenure sector have better coverage of roads and connectivity as compared to the peripheral locations where customary land ownership dominates. Accra's core, developed on state-owned (expropriated) land benefited from colonial and early postcolonial period of city planning and infrastructure investment. However, as the city has expanded rapidly in recent years (see Asabere et al., 2020), local authorities have struggled to supply the needed infrastructure, including roads. Roads are seen as public goods that private markets will either not supply or undersupply, depending on interests and motivations. Therefore, the provision of roads is largely seen as a responsibility of the government - even though in cases such as Mogadishu, many roads are privately provided in practice. One of the main reasons cited for poor public provision across many of our cities is that local authorities do not have adequate revenue to invest in infrastructure, especially in the growing peri-urban areas.

This relative lack of state infrastructure provision also complicates the idea and practice of land value capture, because while land value is often rapidly increasing in these areas, this is often for reasons other than state investment, as noted in the previous section. Within the customary land sector, informal land market processes and practices mean that the local governments do not capture the value accruing from land transactions. Land transactions in the customary sector create value that is either mostly or entirely captured by traditional authorities as custodians of land, landowners (individuals and families) and informal land market intermediaries, such as land brokers (Biitir and Farouk, 2023; Chatiza et al., 2023), as discussed further below. Across all the cities covered in this domain, the activities of informal land brokers of one kind or another are pronounced, driving land transactions and shaping and capturing much of the value that accrues from such transactions. In the context of weak land governance regimes, customary landowners and private informal actors extract and benefit from much of the value from land, at the expense of city authorities that are expected to provide infrastructure and services.

The dominance of these customary tenure and informal actors in peripheral land markets does not just correlate with limited connectivity infrastructure; it is also part of the reason *why* physical development occurs without basic infrastructure in place. Ideally, land should be planned and serviced with basic infrastructure before physical development can occur; but there is limited incentive for government to install basic infrastructure at an early stage in areas where it will struggle to recapture any value uplift, partly because actors in the customary land sector (that is. traditional authorities, and individual/family landowners) are better positioned to capture this value. Indeed, governments in most African cities have not yet developed mechanisms to capture value that accrues to land in this way, especially because value increments are driven by many other things as well. One would expect customary actors, especially traditional authorities, to provide the basic access and connectivity infrastructure themselves if

they are capturing value uplift, but despite benefiting directly from the sale of land and any additional windfall value that is subsequently created, they see infrastructure provisioning as the responsibility of the government. For its part, government sees little reason to invest heavily in these areas, so the phenomenon of "growth without access" persists. Partly because there are rising land values anyway, driven by many different factors, as discussed in the previous section, informal actors are able to profit from these rising values and nobody feels an urgent need to provide basic infrastructure, despite its absence. We thus see a cyclical relationship between dominant de facto tenure regimes that privilege informal actors, the absence of state infrastructure, and the capture of value increments (whatever the driver of these) by non-state actors, cementing their position and limiting the state's capacity and incentive to service this land and make it accessible.

The situation in Kampala reflects how specific tenure systems constrain access in a rather different way. Here, rather than value necessarily being captured by traditional authorities demanding routine payments, the colonially rooted institution of *mailo* land – a form of freehold which dominates much of the city, especially in the periphery – poses significant costs for government compulsory acquisition. Thus the prevalence of *mailo* tenure in many of the least well-connected parts of the city makes the provision of transport connectivity infrastructure especially costly (Serwajja et al., 2023). This too perpetuates "growth without access" on the urban fringe.

Harare presents a unique case, whereby the city's rapid expansion and the emergence of areas of growth without access and connectivity are the direct result of informal conversion of state-owned peri-urban land for urban development, mainly managed through cooperatives and other housing social groups that were highly politicised (Chatiza et al., 2023). Despite the state involvement at the initial stages, land was then sold or allocated without services though co-operatives and "land barons" loyal to ZANU-PF, and much of the resulting rapid development has occurred without the basic infrastructure and services, including roads, water and sanitation. This has had longer-term implications in terms of how housing development is perceived on the periphery of Harare; it is seen as normal for housing development to occur without approved land-use plans, cadastral surveys and basic infrastructure (Chatiza et al., 2023). This problem is further compounded by the rapid growth of small towns around Harare – peri-urban and semi-urban settlements on the city edge in areas administered by other councils (Mbiba, 2017).

In conclusion, prevailing land tenure regimes and associated land market processes lead to traditional and other informal non-state actors establishing authority over land, capturing any value increments in the process. Consequently, city authorities are both disincentivised and unable to raise the needed revenue to provide connectivity infrastructure, especially at the initial stages of urban development. Even if the state attempts to enter these areas later on, this historical legacy creates challenges. At later stages of the urban development process, hitherto absent city authorities may use the provision of roads and other infrastructure as a way of establishing their presence, with

the goal of capturing value from land and property in these now more established areas. However, the existing dominance of non-state actors in these areas – including with regard to the capture of land values explored further below, makes the introduction of state land value capture instruments even more challenging than it would have been at the outset. Thus, when growth without access begins to transition to growth with access, the process is hampered by the capture of windfall gains by non-state actors, while the state struggles to mobilise further resources. Serious improvement in infrastructure is thus only achievable with a major increase in the state's territorial dominance of these areas, which may be unaffordable, politically risky, or both.

4.3. Non-state land value capture

A range of actors across our cities are engaged in extraction and capture of urban land value. Sometimes this is value that they have played a role in creating – including through connective infrastructure or other service provision – while elsewhere the extraction of value occurs without any clear contribution by these actors to value uplift. In others still, the uplift in land value in certain parts of the city is generated by issues relating to security provision, and it is extracted by the very same actors who threaten insecurity on the land. In this sense, security on a given plot of land becomes a commodity that requires repeated payments to violent or potentially violent entrepreneurs who position themselves as security providers on that land.

One case in which the regularised extraction of land value by non-state actors in relation to security is Accra, which can involve quite different actors from the traditional authorities whose role in land markets was discussed above. Insecurity on urban and peri-urban land in Accra is perpetuated by the widespread phenomenon of multiple concurrent sales of the same plot of land, often by the same landowning family (Biitir and Farouk, 2023). Although recent moves by the state have seen large-scale government acquisition of customary land, amounting to around 23% of the total land in Greater Accra, around 90% of land acquisition that occurs for urban development in Ghana relies on the customary land sector (Biitir and Farouk, 2023: 2). In the context of the increased commodification of urban land, and rising demand for it in the urban peripheries, the tendency for landowning families to allow multiple sales of the same plot (whether intentionally or due to family feuds) has fuelled the rise of "landguardism" (Asafo, 2020). This involves the employment of people (usually young men) by those who have purchased land but are not yet occupying (or constantly occupying) it, in an effort to ward off encroachment and construction by other people who have a rival claim to that land.

There are three main categories of "land guards", with varying degrees of legitimacy within the community. *Community land guards* are seen as emerging from within a community to offer some safeguarding against the sale of communal lands to "strangers", particularly given the risk of multiple sales. *Amateur land guards* are groups of young people associated more with exploitation and extortion of purchasers of land, demanding levies (such as "digging fees") before the land can be developed. *Asafo land guards* are directly affiliated to traditional authorities that oversee the sale

and purchase of land, who again then claim fees for digging and development of the land (Biitir and Farouk, 2023: 2-3). Although in fact "landguardism" of all kinds was outlawed by the Lands Act 2020, and in theory can result in imprisonment (ibid: 3), these activities continue and are central to the way the land market functions, especially in urban peripheries. In this respect, they are very different from the legally recognised roles of traditional authorities in collecting revenues from "stool lands" and sharing these between traditional authorities and the state (Biitir and Farouk, 2023: 11).

Landquardism has echoes, albeit with some differences, elsewhere in urban West Africa, including in Lagos. Here, groups collectively known as omo onile – which roughly translates as "sons of the soil" - claim longstanding ancestral links and traditional authority over the land, and therefore the right to extract levies of various kinds for the development of land by the current official landowners (Agboola et al., 2017). While subcategories of omo onile are not as clearly demarcated as those of land guards in Accra, there are highly varying degrees of perceived historical legitimacy of these claims, with some groups asserting that they are the "true" omo onile, while others are just considered thugs (Goodfellow and Owen, 2020). In neighbouring Ogun state, these groups are rather tellingly just referred to as ajagungbales ("land grabbers"), while in Benin City they have appropriated the title Community Development Associations (or CDAs) (Ezeanah, 2018). Curiously, these phenomena do not seem to be present in some other parts of Nigeria outside of the southwest. In Maiduguri, there is little evidence of these informal extortions on land; in some cases, "unlicensed vendors" demand a 10% cut when selling untitled land (something common across many of our cases), but beyond this there are not organised groups consistently extracting levies (Monguno et al., 2022: 33).

In other cases, actors working at very different scales of organisation, or in more ostensibly formal ways, are at work extracting value from urban land. In Mogadishu, this happens through two distinct arenas. The first involves al-Shabaab. While this organisation's role in relation to land is most often associated with alternative dispute resolution and justice provision (discussed in Section 4.5), they also get involved in extracting forms of "taxation" from commercial landowners and businesses. In a sense similar to Ghana, they have sometimes also demanded payment of levies from landowners on the import of construction materials, furniture and other materials needed in property development, though this tends to be focused on larger commercial operations. Second, and very different, is the growing role of a class of semi-formal land administrators, often setting themselves up as formal companies (sometimes termed "suitcase businessmen") who assist people in registering their land and extract value in the process. Meanwhile, the role of formal state actors in extracting value informally is very clear in Bukavu, where public officials routinely charge informal commission on major real estate transactions that come to their attention. According to one source, "The governor's advisers are on the lookout for major real estate transactions downtown. For all sales of plots and houses in the city centre, they demand their share before the establishment of the new real estate title to be signed by the governor" (quoted in Nzweve et al., 2023). Moreover, these actors also often

perpetuate the problem of information asymmetry and inaccurate land records by recording the sale price as being much lower than it actually was, to reduce tax liability. These differentials can be enormous: in one case a major property purchase by a politically connected company that was believed to have paid US \$7m was registered at just US\$2m (Nzweve et al., 2023).

Some of the most significant players involved in the extraction of land value in many contexts are those generally termed "brokers" – understood here as actors who work primarily informally (as opposed to the more formally constituted roles of estate agents/real estate agents) to connect buyers and sellers of land. These are not to be confused with actors sometimes referred to as land "dealers" (or developers) who themselves purchase large plots of land to subdivide and then sell on. In the case of Kampala, all of the informants interviewed for this domain research affirmed that the role of brokers was central (Serwajja et al., 2023). In many ways, these actors are viewed positively, for example in terms of the key role they play in connecting buyers to sellers, reducing the cost and time spent searching for land, providing buyers with real options and – in some cases – verifying ownership of the land. Yet they are also often seen as predatory, engaging in multiple and fraudulent land sales, and even responsible for homicides relating to land transactions (ibid).

Brokers in Kampala come in different categories and scales. On the one hand, there are "elite/high-end" brokers, who are mainly men working with elite land buyers. In these cases, concealment of information from the seller and prospective buyer is rare, and the brokers are themselves closely connected to the elite. Transactions are generally in cash, and often associated with money laundering (Serwajja et al., 2023). In such cases, even if they just take the standard 10%, brokers can make substantial profits because land prices are often massively inflated (see Section 4.1), with buyers seeking to offload cash and often not even bothering to negotiate over the price. In many cases, however, they are able to manipulate the situation in order to find a buyer willing to pay more than the seller has asked for, and on this basis negotiate to take a much higher percentage of the sale value, sometimes even bringing in lawyers to bolster their position. Land sellers, who are often not themselves elites, are therefore commonly the people who lose out in this process.

Below these high-end brokers are "middle class brokers", whose transactions are smaller and tend to go through banks. In these cases, it is common for brokers to charge the buyer more than has been agreed with the seller, after settling a former agreement with the latter, thereby creaming off substantial profits above the usual 10% fee (Serwajja et al., 2023). Sometimes, however, multiple brokers are involved in a single transaction, each taking a smaller cut. Finally there are "low-class"/village-based brokers, who are the most common in Kampala. These actors will often settle for a cut lower than 10%, and as with some of the middle-class brokers they often work in large, intimately connected networks of tens of brokers who all take a small cut, thus distributing the extracted value from the land quite widely (which in some ways echoes the situation with land guards and *omo onile* in parts of West Africa). Some such

brokers end up being excluded and sidelined as they lack the power and elite connections of the previous categories of brokers (Serwajja et al., 2023).

Brokers play a significant role in many of our cities, albeit to varying extents and in different ways. There is a continuum between formal real estate agents and informal brokers, with varying legal status, and given the growing significance of these actors in many cities there is a need for further research on this issue to unpack these distinctions and their significance. Our research suggests that cases where significant amounts of land value are claimed by other actors (such as traditional authorities, "land guards" or public officials abusing their position) there is less space for private actors who connect buyers and sellers to take such a large cut. Brokers also operate in the lease market, for example in Bukavu where instead of one-off payment brokers negotiate a monthly instalment of up to 10%, paid jointly by both lessor and tenant. These rates are all highly informal and negotiable, although in Bukavu brokers are in the process of becoming formalised into an urban union that it is increasingly necessary to affiliate to, in order to operate. This comes alongside moves to professionalise the practice to reduce the extent of illegal, unregistered and erratic capture of land values (Nzweve et al., 2023). Ultimately, however, brokerage remains an unscrupulous and often brutal business in many cases; as a broker in Kampala admitted, "we brokers are here to make money, we are not sympathetic. All we care about is making a commission" (Serwajja et al., 2023: 41).

To conclude, this section has explored the extent to which the capture of land value across our cities is to a significant extent a non-state affair. Yet, contrary to the widespread assumption on the part of policymakers (again often rooted in Northern assumptions) that the failure of the state to capture land value is due to powerful *landowners* holding on to this value, we show that there are actually a wide range of other actors involved in extracting land values. Meanwhile, the state itself usually struggles to turn urban land into a major revenue stream, and it is to this that we now turn.

4.4. Land and property taxation

Forms of land value capture (strictly defined) are minimal to non-existent in our case study cities, but a range of forms of state revenue do accrue from urban land in all of our case studies. The tendency, however, is for multiple instruments that collect relatively small amounts of revenue, rather than a smaller number of robust forms of taxation. This multiplicity of instruments often reflects the complexity of tenure forms, each of which tends to come with different obligatory payments, often to different state agencies (in addition to informal payments of the kind discussed above). All cities have some proportion of state-owned land and, in many cases, this is leased out and generates quite substantial revenue in the form of ground rent and/or leasehold payments. However, with commodified private property being of increasing significance in most urban areas – including on former state lands that have been sold off, and in peripheral zones that may have previously been dominated by forms of customary ownership – effective taxes on private property become crucially important. Property

taxation is notoriously challenging, as discussed in the existing literature reviewed above, and these challenges come to the fore in different ways across our cases. Notably, as can be seen in Table 2 (below), comparing property tax across cities is also a challenge, as cities deploy different methods for property tax collection, data collection and publication is inconsistent, and currency fluctuations compromise comparability. We also only have this kind of data for four of our six cities.

Table 2: Property tax overview in four cities

	Kampala	Maiduguri	Mogadishu	Accra
Overview	Property tax is a percentage of the actual (or estimated) annual rental value or business income value. It is only collected from property owners that generate income from their property. Residential owner- occupied properties currently are exempted from attracting property rates.	Land is taxed annually by Borno State Geographic Information Service (BOGIS) in Maiduguri. Taxes are paid centrally to Borno State Internal Revenue Service and later remits to local government councils. Property tax in Maiduguri is based on surface area. Ground rent charge is paid annually according how much area is held /square metre. In cases where properties are rental, tenement rate is charged.	The BRA collects surface-area-based taxation. This is a tax on the area of constructed buildings, multiplied by the number of stories a building has. Where buildings have yet to be constructed, the tax is on the area of the plot of unconstructed land. The Ministry of Finance taxes the income from rent accrued through property.	The local authorities (MMDAs) that make up the city of Accra collect property tax. The system used is market-based (depreciated replacement cost), based on building and improvement only. In addition to the revenue collected in urban areas, these local authorities are entitled to a 55% share of the revenue from customary lands within their jurisdictions (collected by Office of the Administrator of Stool Lands [OASL]).
Tax rate	Property rates for properties located within the city and with a rateable value of over of 5 million shillings are computed at a rate of 6% of the rateable value of the property.	Ground rent is calculated by property type. For residential, it is also calculated by the density of areas. For example: N1/m3 (high density); N2/m3 (medium density); N3/m3 (low density). Commercial and industrial pay a higher rate, at N12/m3 and N25/m3, respectively.	The BRA taxes buildings at a rate of USD .50/m2 annually.	Rates differ among MMDAs. Different rates apply to residential, commercial and industrial, based on land use classification. For example, the Accra Metropolitan Assembly set the following tax rate for the year 2020: first class residential – 0.0035; second class residential – 0.00327; third class residential – 0.00327; commercial – 0.002233; industrial – 0.01165.

In Accra – the largest metropolis in our case study set – the problems span Kelly's (2000) four key "ratios" for effective taxation: the coverage ratio (what is or is not covered in the tax base), the valuation ratio (the listed value of properties relative to their actual market value), the tax ratio (the level and which the tax rate is set), and the collection ratio (the proportion of property tax owed that is actually collected in practice). Taxes in Accra are collected and administered by the city's constituent MMDAs (Metropolitan, Municipal and District Assemblies), rather than at the metropolitan scale. However, across all MMDAs the property tax levied is on buildings only, thus excluding the market value of the land itself. Valuation rolls are out of date, exacerbated by the fact that the present valuation system is cumbersome and very expensive (Biitir and Farouk, 2023: 4-5).

While tax rates can in theory be changed quite easily, and new valuation procedures adopted (for example, based on the model recently rolled out in Freetown (Grieco et al., 2019), there are also major problems with respect to collection and enforcement. The collection side of tax is crucially important to address; without doing so, simply improving valuations or raising the tax rate is likely to meet resistance and result in even weaker enforcement. In Accra, currently much collection is done by local firms, commonly selected on political grounds rather than effectiveness (Biitir and Farouk, 2023: 46). Moreover, reforms that might help with collection, such as a street naming and GPS street addressing schemes, have had limited success in many of Accra's MMDAs. There are a wide range of reasons for this, including limited funding, leadership and buy-in, and challenges and failures of institutional coordination. The politics of MMDAs, for example, means that centrally appointed chief executives are often keen either to jettison existing reform initiatives in order to develop their own, or are attempting to stand for political office and thus unwilling to enforce tax collection (Biitir and Farouk, 2023: 35). Meanwhile, the central government's determination to centralise control over digitising addresses and associated tax collection software has undermined efforts at the MMDA level (ibid). This can be seen as an example of a sort of "competitive technopolitics", whereby the adoption of one particular technology would "bake in" ongoing benefits for either the central government or the MMDA,

depending on which technology prevails. As a result of these political obstacles, the amount of revenue captured from taxation of private properties in Accra is relatively insignificant, averaging around \$1.5m annually between 2016 and 2019 across seven MMDAs (Biitir and Farouk, 2023: 6).

Elements of these problems appear in our other cities, though the exact nature of challenges to property taxation depends on the city's size, governance structures and national significance, as well as state capacity and prevalence of institutional conflict. In Harare, another of the capital cities within our set, property taxation accounts for 30% of city government revenues and is the second most significant revenue source. This sounds quite healthy until one considers that an estimated 60-80% of properties are not even on the valuation roll, and the Number One most significant revenue source comprises water and sewerage charges, which are not even taxes but rather user fees for a specific service (Chatiza et al., 2023: 9). The very poor coverage ratio in Harare reflects a wider problem of inadequate land information systems, with an estimated 30-40% of land in the city not even being registered (ibid: iii).

In Maiduguri, a conflict-affected secondary city, the basis for property taxation is more or less the opposite of Accra, in the sense that a tax is levied on land but not on buildings/improvements themselves. The land tax (termed "ground rent", due to the nominal state ownership of land under Nigeria's 1978 Land Use Act) is based on surface area, with different rates per square metre based on the density of the area, and higher rates for commercial and industrial land uses. The introduction of a new agency in 2019 – the Borno State Geographic Information Service (BOGIS) – succeeded in streamlining land administration and digitising land records (Monguno et al., 2022: 43), which made a very significant difference to the collection of ground rent and other land-related charges, such as stamp duty and registration fees. In consequence, annual revenue from these combined rose from 68m to 1.045 bn Naira (around \$2.5m at 2021 exchange rates) between 2019 and 2021 (Monguno et al., 2022: 32-33). Built properties themselves entirely escape the tax net, however. In cases where someone is living in a rented property, they are supposed to pay "tenement rates" to the local council (rather than state government) but this has not been enforced (ibid: 34).

Mogadishu takes a different approach again to the tax base. Here the Banaadir Regional Administration – the agency responsible for all aspects of property taxation – adopts an area-based approach to taxing property, but in cases of built plots it taxes the area of buildings only (surface area multiplied by number of storeys), while for undeveloped land it taxes the full area of the plot (Mohamed, 2022: 23). The tax is a flat rate, with buildings taxed at US \$0.5 per square metre annually. The amount of property tax collected through this system was not available, though it is unlikely to be generating large amounts of revenue, given the wider challenges to state authority, contestation over legitimate land ownership and widespread non-compliance, even for those properties that make it onto the rolls (ibid).

This brief review of some of our cases shows the challenges to effective property taxation to be diverse, with even major cities such as Accra affiliated by multiple weaknesses in the system – though it also shows the potential for dramatic improvements in collection in a short time (political environmental permitting), as in the case of Maiduguri. In none of the cities was there a system of valuation in place that is likely to reflect the market value of urban properties (the closest probable being Kampala, notwithstanding the challenges of the way in which "market value" is calculated, alluded to in Section 4.1). However, the more serious and intractable problems relate to the limited coverage of existing properties on the valuation rolls – and even very limited formal registration of land itself in cases such as Mogadishu – as well as weaknesses in collection and enforcement. In relation to the latter, the situation regarding formal property tax collection cannot be fully understood without taking into account the range of non-state actors involved in capturing land and property values, as discussed in Section 4.3, before the tax system even gets a chance.

Systems for registering and valuing properties, as well as for managing disputes over valuation and enforcing payment, are constantly evolving with the introduction of new technologies. Yet these do not exist in a political vacuum, and political struggles over technologies and what they deliver can be a further hindrance to effective taxation, as well as affecting multiple other aspects of land administration. In the next section, we consider the technopolitical dimensions of urban land management.

4.5. The technopolitics of land administration and land conflict resolution

Questions of land and connectivity are inherently political, as power asymmetries and negotiations strike to the core of the domain. In this specific project, we have been interested not just in how land relates to the political settlement (explored below) but in "techno-politics" (Von Schnitzler, 2017; Swyngedouw and Boelens, 2017) and their implications. In other words, we wanted to partly shift the focus away from the political drivers and outcomes of particular land regimes (for example, in terms of overt political exclusion of particular groups, or forms of market-based inclusion and exclusion) and towards the politics that are embedded and encoded in the technical instruments and institutional forms that are core to land systems. Together with the data collected in the cities, we explore how land administration – often seen to be mundane, administrative and perfunctory – is also infused with politics at multiple levels and scales.

The cadastre, and related official records of land ownership, is a key site whereby the question of technical administration and political claim-making is exposed. As all the cases show, land ownership has been highly contested in African cities. Diverse registers and archives have created the conditions for overlapping and often conflicted claims – these conflicts often come from a history of legislative overlap, which creates significant grey areas in terms of how ownership and land rights can and should be ascribed. The process of identifying and documenting property boundaries, followed by the ascribing of rights to these parcels, is largely seen to be an inherited practice (part of the lineage of colonial land administration). For example, as pointed out in the report on Maiduguri, in Borno State, the 1962 Land Tenure Law No 25 was used as the main

instrument of land administration until 1978 when the Land Use Act came into effect (later Land Use Act Cap 202 LFN 2004) (Monguno et al., 2022). This law recognised customary tenure administered by local traditional leadership (a system which predated colonialism), side by side with statutory tenure controlled by the government. In Kampala, while forms of freehold are much more significant, it is equally the case that the postcolonial governments have tinkered with and in some ways exacerbated the problems introduced by colonial land administration, rather than overcome them. As Serwajja et al. (2023) point out,

"post-independence land tenure reforms did not address the distortions that were occasioned by the colonial government. Instead, post-independence governments served to complicate the land question through the introduction of overlapping and competing land tenure regimes ... The multiple, competing, and overlapping tenure rights [in Kampala] ... brought forth land tenure confusion and insecurity" (Serwajja, 2023: 1; 5).

This has partly been about trying to garner support among *mailo* landlords and their tenants at the same time.

While efforts to localise and streamline land ownership were attempted in postcolonial periods (for example, in Maiduguri, the promulgation of the Land Use Act Cap 202 LFN 2004 [LUAC] harmonised land administration throughout Nigeria), many of these processes have generated additional issues. Not only did they often struggle to contend with traditional leadership (as we discuss below), but confusion in transition processes created space for land grabbing – whereby (usually public) land is illegally sold. This echoes findings elsewhere, such as in Dar es Salaam, where recent research has shown that "interim property titles" tended to be ineffective in protecting people's property rights (Manara and Pani, 2023b). In the absence of stable land titles and effective safeguards for state-owned land, in Maiduguri (Monguno et al., 2022), land is sold by syndicates colluding with public officials, often to the benefit of elites, while in Mogadishu it is noted that "much public land has been privatised through outright land grabbing, sometimes by powerful individuals connected to the machinery of the state" (Mohamed, 2022: 11).

At the same time, many efforts have been undertaken to try to address skewed land ownership patterns, often with their own deeply political motives and logics. In the case of Harare, for example, national efforts have been made to position housing cooperatives as the appropriate institutional form for the purchase of peri-urban plots (Chatiza et al., 2023). Yet the design and implementation of these programmes have been shaped by what McGregor and Chatiza (2019) refer to as "clientelist statecraft", with cooperatives forming a new political technology to bolster ZANU-PF dominance in the urban periphery (as discussed further in Section 4.7). In many African cities (Accra being an important example), the use of traditional authorities in peri-urban areas has created hybrid systems of land administration (Biitir and Farouk, 2023), in an attempt to merge colonial and traditional practices related to land. Equally, in cities like Mogadishu, where the state's ability to track land claims and codify them in law has

been very low, alternative systems of land ownership and transfer – as well as parallel systems of justice and dispute resolution in relation to land, led by al-Shabaab – have developed and are often seen as more credible (Mohamed, 2023). These questions of institutional multiplicity in the context of overlapping ownership claims remind us of the deeply political nature of any system that attempts to codify land ownership, and the associated adjudication between competing claims, through new institutions or technical instruments.

Dispute management and conflict resolution are shaped by these conflicts over demarcation and ownership in all our cases, so the question of which technologies are deployed to affirm boundaries and validate ownership becomes central. It is, of course, difficult to manage disputes when the existing archives are very patchy and inconsistent, requiring difficult choices to be made, many of which are not only technical but inevitably political. In many African cities, land disputes - in part owing to these complexities in overlapping rights – are frequent and protracted. In the case of Harare, for example, the report shows the scale and substance of land disputes – ranging from small encroachments on property boundaries to state-led evictions from private property that has been settled (sometimes for many years) by low-income urban dwellers (Chatiza et al., 2023). In the case of Accra, where traditional leaders are responsible for land, traditional courts have also been established as a means of addressing the regular and pervasive conflict that has emerged, particularly as the urban area has expanded into the peri-urban areas of traditional leadership (Biitir and Farouk, 2023). Additionally, in the case of Mogadishu, there are several options for managing land disputes; commonly, claimants will use the al-Shabaab's courts, rather than Somalia's "official" judicial process (Banadir regional court) (Mohamed, 2022). The choice is linked in part to speed, as well as to the enforceability of the verdict and the perception that the assessment is less encumbered than the formal channels. The Somalia case is clearly an extreme example, but nevertheless illustrative of the broader technopolitics of dispute resolution: while al-Shabaab's system is believed to be relatively free of clan-based discrimination, and in this sense more politically neutral than that offered by the state, the brutal technologies of enforcement that are central to its success are clearly part of a political project to displace the state and ensure al-Shabaab's own political dominance.

Land use management and regulations are another area where a highly technical set of instruments in fact reflect very particular political imaginaries for urban development. At the same time, the actual and existing processes of enforcement of these regulations becomes a site through which the relationship between the state (at various levels) and land users is trialled and substantiated (Tahir et al. forthcoming). As many of the reports note, land use management in many African cities often reflects very colonial and bureaucratic ideas about how space should be planned and governed (Chatiza et al., 2023). In many of the cities, new strategic plans have been developed, but these the older master plans still hold weight (ibid). Plans that specify appropriate land uses (for example, where commercial activities should take place or what areas

should be ecological conservation sites) are often out of date and difficult to enforce; however, they are referenced regularly by policymakers and donors.

The difficulty of enforcement is not only because they reflect modernist ideas about spatial and social order that are very far from the current reality (several of the cases mention the vast divide from the expressed plan and the current development situation). Additionally, within the state there is insufficient capacity and will. This is particularly true in the case of Mogadishu, where other institutions have taken over the roles of the state (Mohamed, 2022). This capacity extends to the delivery of services, which is often a precondition for convincing landowners to comply with regulation. As pointed out in the Accra case, the slogan "No road, no vote" is used to articulate the tight connection between state legitimacy and infrastructure delivery (Biitir and Farouk, 2023). In the Accra case, it is further pointed out that elites have played a hand in forcing land use changes in favour of their own economic gains (ibid). The result of these various weaknesses, as is indicated in many of the cases, is ad hoc and highly political choices about when and how to implement land use regulations. This not only creates ample space for petty corruption, eviction and elite capture of planning processes – it also shifts attention away from the task of creating more meaningful and pro-poor regulations and tools, which cities desperately need.

These issues cannot be addressed with primarily technical interventions outside of a consideration of the politics of reform, particularly since such technical tools are actually inherently political, including in the ways that they embed politics in land systems and shape political processes through their implementation (see Serwajja et al., 2022). Any efforts to harmonise and streamline land administration - including building the cadastre, verifying ownership, valuing properties, resolving land disputes, and so on - must contend with the prioritisation and erasures that will accompany new institutions and technologies (Mohamed, 2022). In other words, there will be winners and losers in attempts to unify overlaying and conflicted systems through new technical systems. This is not necessarily a bad thing; it is an opportunity to inscribe into technical processes a clear normative and political agenda. In this sense, a technopolitical lens brings to the fore not only the ways in which power is entrenched in the land system by political and economic elites, but also the possibility to imbue these technical devices with a more progressive politics. Notably, any sort of idealised view of how land administration might become more pro-poor, will need to contend – first and foremost – with both the historical legacies (Chatiza et al., 2023) which underpin these systems as well as the current vested interests (including both elite and state interest) that benefit either from the status quo or from the lack of clarity itself.

4.6. ICTs and digital connectivity and their role in land markets, access and conflict

In the past, connectivity was largely considered in relationship to the physical movement of people and things around cities: in other words, questions of connectivity focused on the ways in which the fabric of urban areas allowed for or constrained movement, with a major focus on mobility infrastructures, such as roads or public

transport. Today, the rise of digital infrastructure across Africa has expanded the connectivity debates (Steel, 2021; Friederici et al., 2017). Digital technologies are increasingly being used to overcome the connectivity fissures in African cities, create new sites of connectivity and engagement, and reshape traditional infrastructures (such as those related to land) through digitisation and the advent of platforms and algorithms. Digitalisation³ is increasingly seen as one of the greatest transformative opportunities of our time (World Bank, 2023) – but this is far from guaranteed. Like all technologies, digital technologies have the potential to reinforce existing inequities, rather than address them. In this section, we are specifically interested in the ways in which ICT, digital connectivity and digitalisation are shaping processes related to land management and markets, introducing new actors – and by extension new power arrangements – into an already crowded space. This, we argue, is one of the frontiers of land and connectivity debates.

In terms of the intersections between digital connectivity and land, the digitisation (such as digital documentation) of land systems and services is one of the first and most important areas where we are seeing rapid change in Africa. The existing largely paper-based systems for land administration have presented a range of issues: they are seen to be slow to manage, require considerable human labour (Biitir and Farouk, 2023), and are prone to interventions and corruption (Chatiza et al., 2023). These paper-based systems have been slowly undergoing a process of hybridisation, with components being brought onto digital platforms, while others remain analogue (Datta and Muthama, 2024; Serwajja et al., 2023). As such, most of the major funders and donors have pushed for rapid digitisation of cadastres, land records and transaction processes in the interests of developing integrated and transparent systems. In Maiduguri, for example, the BOGIS has sought to develop a "systematic land registration" that would enable digitisation of existing land and property (Monguno et al., 2022). In this case, existing land ownership will be geocoded. In other cities, such as Harare, there are also efforts underway to digitise land records (Biitir and Farouk, 2023). In Accra, the government of Ghana and the German Development Agency, GIZ, started the process to reform local authorities' revenue mobilisation. Through this project, the GIZ developed software known as dIREV (district-level revenue) that uses GIS features (ibid). This reflects a radical departure from the existing systems and, once complete, could significantly reduce the potential for land grabbing, clientelist land distribution and land-related conflicts in future. However, it is important to note that – as discussed in the preceding section on technopolitics - these systems do not come without either overt political struggles or less explicit political agendas. For example, in Accra, efforts to implement the GIZ-developed dLRev software have run into to trouble because the Ministry of Finance and Local Government has established a company to set up a different, rival and more centralised local revenue collection system (Biitir and Farouk, 2023: 35).

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^{3 &}quot;Digitisation" is generally used to refer to the conversion of analogue/physical information into digital formats, while "digitalisation" refers to the increased use of digital technologies in a particular sector or activity. We use both terms, as appropriate.

While formal government processes relating to land management are increasingly being digitised, in order to enhance revenues and minimise corruption, the role of digital connectivity has proceeded even more rapidly in the sphere of informal land transactions. Digital platforms are reshaping urban land markets in cities such as Kampala, where they are being used by land brokers to connect buyers and sellers in ways that have radically increased the pace of transactions and also created more opportunities for women to engage in the land market (Serwajja et al., 2023). In this respect, there is clearly a democratising and equalising aspect to the digitisation of land market, with an increased circulation of land information (including pricing, locational attributes and images) but also the emergence new forms of fraud and fake land sales as these technologies come to be manipulated (ibid).

Because of the close connection between telecommunications and finance in Mogadishu, digital connectivity and the land domain are critically interlinked (Mohamed, 2022). This is due to the increasing interconnectivity of money services provided by large service operators – connecting remittances, mobile money usage and banking into streamlined, interoperable systems. These interlinked ecosystems of banking, mobile money, and remittance services are increasingly used for managing land transactions. The role of the Somali diaspora is central to this land/connectivity dynamic. Additionally, Hormuud Telecom and other telecommunications businesses have turned to land and real estate development as a site of commerce and source of profit. Here, large telecommunications firms purchase land and construct buildings outright, turning arms of their businesses into in-house real estate companies (Mohamed, 2022). The cumulative impact is the increase of land values overall, and the concentration and control of the land sector in the hands of telecommunications companies.

In cities such as Mogadishu and Kampala, where (in different ways) physical mobility and transport connectivity are highly constrained, digital connectivity is increasingly considered a desirable attribute of land itself (Mohamed, 2022; Serwajja, 2023). It remains to be seen whether this will shape land value and whether digital connectivity becomes more ubiquitous, though our workshop discussions in Kampala suggest that strong and consistent digital connectivity is one of the appealing qualities of locating in certain areas, such as Bugoloobi. There is, however, likely to be a mutually reinforcing relationship between telecommunications companies following demand into areas where there are sufficient clientele, as well as residents increasingly clustering in areas where telecommunications are relatively well developed.

The expansion of digital connectivity in cities is also shaping the way in which cities connect to one another and their hinterlands. For example, in the case of Mogadishu, digital connectivity (overlaid on a range of historical and material patterns) results in many urban dwellers feeling more connected to other cities in the Horn and East Africa than to the rest of Somalia (Mohamed, 2022). While these transnational intercity connections are longstanding and in some ways a familiar feature of networking between large urban nodes, the ability to connect digitally across space (despite the

challenges of intra-Africa connectivity) to facilitate new forms of trade, finance and political activism suggests a thickening of these urban transnational linkages. As these forms of digital exchange increasingly encompass regional and international land markets, urban land is likely to become central to regional economies of investment, laundering and speculation.

While this was not fully explored in our reports, the impact of digital connectivity on mobility infrastructures is reshaping both space and economies in African cities. The platforming of mobility, both for commuting and logistics, has had a huge impact on urban economies and the flow of goods and people around cities (Cirolia et al., 2023). For example, the largely home-grown motorcycle-taxi ride-hailing platform, SafeBoda, in Kampala is an example of these interconnections and innovations that are transforming urban economies (see Serwajja et al., 2023). Notably, SafeBoda has been significantly more successful than other, more global platforms such as *Uber boda* and *Lyft*, largely due to the local expertise embedded in the company and its context sensitivity (see Goodfellow and Mukwaya, 2021). The digitalisation of access to mobility holds the potential to generate new forms of data – on journey times, levels of demand in different places at different times of day, and challenges of accessibility to certain areas – that could further feed into land value and land use change.

In the final subsection on crosscutting findings, we turn to an analysis of the different kinds of land politics evident in our case study cities. This draws across some of the above issues, including the nature of economic accumulation in land and the technopolitical dimensions of land management, but also considers some of the ways in which land is explicitly politicised in public discourse and policy.

4.7. The variable character of land politics: Symbolism, distribution and accumulation

It is stating the obvious to say that the allocation and use of urban land, as well as the extraction of value from it, are highly political. We have already explored some of the ways in which this is the case. Yet there are significant differences between cities with respect to "land politics" – which we define as situations where property in the form of land is the focal point of contestation between individuals and groups, and where interests mobilise politically to defend property rights or try to augment their land holdings. We distinguish this from two other distinct, albeit overlapping, forms of politics that we term "territorial politics" and "institutional politics". We define these in the following section and consider them in relation to the ACRC political settlements framework. In the present subsection, we confine our focus to the nature of *land politics* in each case.

In all cities, inevitably, there are accusations of illicit land deals and the politicised allocation of land; but beyond this broad similarity there are significant differences. In Accra, a city where "traditional authorities" have very significant roles in urban governance, even at the formal level, the continuing authority of these actors is strongly bound to their control over land. Their influence and, importantly, legitimacy in relation

to traditional claims to land is bolstered by the perceived illegitimacy of colonial and early postcolonial state acquisition of land, usually with non-existent or inadequate compensation to existing landholders (Abdulai, 2023: 42). The continuing sense that communities such as the Ga-Dangme have been alienated and excluded from their own (previously collectively held) lands creates both an enduring sense of land-related grievance, and a power base for those who can claim some historically rooted custodianship over land. Some of the political conflicts in Accra that are ostensibly related to issues of religion (and related nocturnal noise from places of worship) are ultimately related to land-based grievances and historical dispossession (ibid: 43).

In Kampala, land is equally political – but not so much in terms of a historical legacy of state dispossession. An unusually large proportion of land in Kampala is privately owned, much of it under mailo tenure, which has existed since the colonial Buganda Agreement of 1900, and remained one of the dominant tenure types since independence. In Kampala there is a dual politics of land: on the one hand, the areas under mailo are subject to struggles between the Buganda Kingdom and central government, including legal wrangles about the rights of tenants (who are often migrants from other regions) versus those of Baganda landlords. This has fuelled a long-standing government discourse about the need to abolish mailo (Serwajja et al., 2023). Meanwhile, in other parts of the city where land is (or was) state-owned, much of it has been gradually privatised, in a context where a governing regime that lacks substantial legitimacy in the city has deployed the privatisation and deregulation of land as a central source of political patronage. There is thus a clear contrast with Accra: rather than the postcolonial state taking people's land, "political elites" are often seen as taking both land and power away from state agencies. Indeed, the president and his allies are frequently seen as "hijacking" the power of government agencies officially mandated with land management functions. Land is so central to elite-level bargaining in the city that one government official noted that "politicians are always involved in high value land ... the chances of them not being involved [in land deals] is zero" (Bukenya and Mtisiko, 2023: 10). In this regard, the politics of land in Kampala is often about the erosion of the public sphere – the appropriation of public land for private purposes, rather than the state's appropriation of land that was formerly under nonstate, collective control.

In Harare, while there are some parallels, important differences also pertain. As a city that had relatively high proportions of publicly owned land, albeit split between city- and national-level agencies, the appropriation of this land by political elites is not just for private gain and to keep other elites onside (though this is widespread), but also involves allocating large proportions of the urban periphery to cooperatives for resettlement and housing development – bolstering ZANU-PF support in the process. This capacity to allocate land en masse in the urban peripheries is unusual, and partly explains why, despite having long been an opposition-leaning city, there are actually very substantial pockets of ZANU-PF support in some peripheral areas. Political settlements research in Harare has shown that "Resettlement schemes have led to assembling settlers in certain areas with insecure tenure, whose presence on the land

relies on ZANU-PF's backing" (Lewanika, 2023: 28; see also McGregor and Chatiza, 2019). At the same time, a city-level power configuration that has depended on allocating peripheral land in this way, before the state has capacity to plan or service such areas, has fuelled the problem of "growth without access" discussed above. Consequently, revenues from land often accrue to various types of informal "space barons" rather than to the city government (Lewanika, 2023; Chatiza et al., 2023). Some similar dynamics pertain in Maiduguri, though here there is a greater concentration of power and the collusion of more cohesive "syndicates" with public officials.

To summarise the various political dynamics in urban land, we can identify three different ways in which land is politicised across our cases. First, land can be significant in terms of its political symbolism and role in legitimising discourses - for example, when signifying alliances with particular ethnic or clan constituencies regardless of how it is actually distributed. Second, it can be politically significant in terms of patterns of distribution and redistribution, as in the use of land either to exacerbate or redress patterns of colonial and postcolonial dispossession, and the conflicts associated with such redistribution. Third, land is politically significant in terms of economic accumulation and as a speculative asset, often forming a store of wealth, a source of economic rents that provide resources for political influence and bargaining, or a promise of future reward. These forms of land politics exist in all our cities, but have a different character in each. In Table 3, we summarise these different forms of land politics across our cases. Clearly the three categories of land politics we set out below are interconnected, with patterns of redistribution and conflict often connected to land's political symbolism, while certain patterns of accumulation can also fuel existing grievances that make land an even more potent symbolic issue (for example, in election campaigns) in some cases.

Table 3: Land politics in six case study cities – some key features

City	Political symbolism of land	Patterns of (re)distribution and land conflict	Accumulation and speculation
Accra	Authority of traditional leaders closely related to land, and specifically the redressing of past colonial and postcolonial wrongs.	Redistribution takes place in large part through traditional authorities, alongside highly commodified land market and associated conflicts at all levels of society, often related to multiple conflicting sales of plots.	Land market shaped by wide range of actors, including formal real estate developers, traditional landowners, state agencies and customary authorities involved in planning activities.
Bukavu	Owning urban buildings often serves political functions above economic ones, signifying land ownership and authority.	Land redistribution, often involving elite private land grabs of state or communal land, is a major source of displacement and conflict. Land conflicts within the city are often a response to wider conflict in the region and the intense pressure	Speculation and subdivision are central parts of the urban political economy, fuelled by other key lucrative sectors (such as mining, the humanitarian sector and politics itself).

		this places on land, especially in better serviced areas.	State actors central to capturing land but through unofficial, non-state channels for private gain.
Harare	Land is highly politicised and associated with ZANU-PF historical struggle. ZANU-PF symbols are used to legitimise land transfers and influence electoral outcomes.	There is a legacy of major state redistribution under the fast-track land reform since 2000, which is central to government legitimation but exacerbates administrative challenges. Land in the urban peripheries redistributed through politicised cooperatives linked to attempts to build/bolster urban support for ZANU-PF, but outside of state control.	State's incapacity to register land and track land values leads to a highly opaque land market. Very limited infrastructure provision in the peripheries also limits the use of land as an economic asset (relative to some of our other cases).
Kampala	Land has deep symbolism for Buganda Kingdom and Baganda ethnic group in terms of their rights and powers vs NRM government.	Redistribution of land is often seen in terms of private elites stripping the state (especially at city level) of land resources. Land conflicts particularly rife between tenants and owners on private (<i>mailo</i>) land.	Land is central to political deal- making in the city, often through the selling off of former state land. Brokers play key role in heating land market and inflating land values.
Maiduguri	Land Use Act of 1978 a foundational moment of state appropriation of land, to which much contemporary land politics responds. Land linked to local/regional identity within federal system, and in context of large numbers of IDPs.	Rise in sales of land by customary leaders with informal titles, leading to conflict, as well as land sold by private syndicates colluding with public officials. Insecurity relating to Boko Haram conflict played key role in reshaping access to land, including through proliferation of fake documents. Large numbers of IDPs and camps create distinctive dynamics in the periphery.	Security provision is key to the relative value of land as an asset in different areas, but this can change suddenly. Relatively little extortion by intermediaries such as brokers compared to some cases. Drainage and other environmental infrastructures are often as important to land value as roads.
Mogadishu	Symbolism of land strongly linked to clan identity. If in the "appropriate" clan area, (or a metropolitan, mixed area), land seen as an important form of future security.	Land transactions and associated disputes largely characterised by non-state forms of adjudication. Dispute resolution largely the remit of clan elders and religious leaders. Resort to al-Shabaab for severe cases, building of its authority and legitimacy vs that of the state, whose role is largely confined to documenting outcomes.	Land is highly commodified and a store of wealth, especially in context of diaspora investments. Land as economic asset used by political elites to fund election campaigns. Limited and privatised infrastructure and security provision leads to major differences in land value by area.

5. Land and connectivity in relation to the political settlement

Having overviewed the nature of land politics in our cases, in this section we situate this in relation to broader political dynamics, including through the comparative analytical frame developed by ACRC. First, it is worth considering in general terms how urban land in a given city relates to the national political settlement. The extent to which urban land is central to political settlements can vary substantially, in part depending on how significant the city in general is to the national political settlement. This significance is often heightened for capital cities, though it can also vary according to historical and sociological factors as well as city size.⁴

Secondary cities can also be very significant politically where they are in strategic locations and/or have particular economic significance, as is the case with Bukavu. Bukavu is positioned with ACRC political settlements analysis as a "narrow-concentrated" political settlement, in which there is high concentration of power alongside little impetus for delivering services to a wide social base. It is also strategically significant for the national elite, in part due to its relative isolation from Kinshasa. These dynamics are evident to some extent in relation to land. For example, when then former President Joseph Kabila acquired a very large plot of land north of Bukavu, this involved the eviction of 2,500 occupants, including the destruction of a hospital centre and many homes. Yet when evictees formed a protest movement to dispute the apparent illegality of this land transfer, the entire local elite rallied around the president, indicating a high concentration of power that aligns with the national ruling elite (Nzweve et al., 2023).

But the relationship between land and the political settlement (and city-level power configurations)⁵ also depends on how symbolically significant land is as a political resource in a given city, and the extent to which it is bound up with the legitimacy of the ruling coalition. This in turn can depend on factors as varied as colonial histories and the historic relationship between agriculture and pastoralism (Goodfellow, 2022). In some contexts, land is more emotive than in others, which shapes its role in the ideologies underpinning political settlements. The significance of land-as-property may also have different weight relative to land-as-territory, or land as an arena for institution-building and governance.

To explore this further, we here deploy the ACRC political settlements framework to analyse the relative balance of *land politics* as compared to the other forms of politics we identify in the domain – here termed "territorial politics" and "institutional politics". *Territorial politics* refers to contestations that are not about land-as-property so much as control over geographic space, who gets to access and use that space, and how land is connected to other parts of the city. In this respect, territorial politics is at the

.

⁴ See the discussion of urban "dominance geographies" in Chapter 9 of Goodfellow and Jackman (2023).

⁵ While in the ACRC framework, the "political settlement" refers to the national level, embedded within which there is a "city-level power configuration" – rather than a separate or independent political settlement at the city level (Kelsall et al., 2021).

heart of the land–connectivity nexus, referring to the organisation of interests around questions of how land is physically accessed and connected. *Institutional politics* in the domain refers to how formal and informal governance systems relating to land and connectivity are arranged, and the ways in which this is contested (for example, between different tiers of government, or overlapping formal and informal systems of land tenure and land regulation).

We consider here the relative dominance of different kinds of politics in the domain within our different case study cities, as they have been categorised through the ACRC political settlements typology. While land politics is rife in a city like Bukavu (a "narrow-concentrated" political settlement), there is relatively less of what we term territorial and institutional politics. The situation is quite different in "narrow dispersed" cases, such as Harare or Mogadishu, where – despite their significant differences – aspects of territoriality relating to connectivity and access to space are arguably as important politically as land ownership itself. This may have some causal relationship with the structure of the political settlement, as well as to historically constituted, place-specific aspects of the domain.

For example, while land in Mogadishu is an important means of building political alliances and funding electoral campaigns in the context of a highly commodified land market (Hagmann et al., 2022), Somalia's pastoralist history and clan-based organisation mean that individual or local community land tenure do not have the same kind of symbolism in political conflicts as in some other cases. However, given the fractured governance and fragmentary infrastructure in the city (linked to the narrowdispersed political settlement), questions of territorial politics – which are less about land ownership than about how connectivity and access are managed – are very politically salient. Given that the state does not exert the kind of relative infrastructural dominance that it does in some other cases, like Kampala or Maiduguri, the relationship between state agencies and the private sector takes on particular significance. The political settlement in Mogadishu involves a significant role for the business community, not least in terms of financing infrastructure in the context of a public sector that is weak in capacity and widely distrusted. This was bolstered under the mayoralty of Madaale, who introduced initiatives to bring both private businesses and residents into infrastructure development (Muhumed and Elmi, 2023). At one point, the business community pledged to support 50% of the cost of a road construction and upgrading programme, but the agreement was scrapped when the funds were misappropriated and the city administration was seen as reneging on its half of the deal (Muhumed and Elmi, 2023: 22). More generally, the government agencies (including the city administration) are widely seen as corrupt, untrustworthy and illegitimate, playing a very limited role in bolstering connectivity within the city.

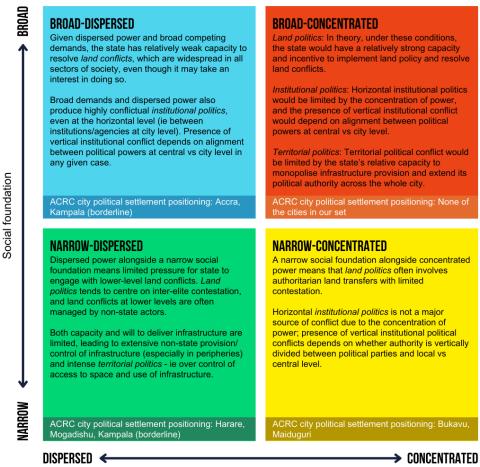
Yet while the state may not provide much connectivity, the *restriction* of connectivity is often deployed by government as a tool of political control within the city, in the sense that roads into government-controlled areas are often temporarily closed, and enclaves of political elite dwelling are sometimes permanently sealed off. The manipulation of

(in)accessibility and (un)connectivity for political ends has important consequences for security: less socioeconomically mixed areas are seen as being less secure (Mohamed, 2022), and insecurity is even described as being "more rampant" in areas that are under full governmental control (Muhumed and Elmi, 2023). The effort to create securitised and politically controlled territory within the city may benefit some elites, but it also ultimately perpetuates patterns of division and exclusion that produce mistrust towards the state – while at the same time limiting the prospects for mobility within the city. The dispersal of power between state agencies, and between state and non-state actors, alongside a limited need to serve a wide social base to maintain power, generates territorial contestation.

In Harare, questions of access to territory are also highly significant, especially given the significant role that "space barons" play in infrastructurally "stitching" together a highly fractured and informationally fragmented land system. State agencies have all but given up on extending infrastructure beyond trunk roads and existing corridors, consolidating its presence in these limited spaces. Correspondingly, the state also lacks even basic regulatory control over much of the land within its boundary, not least due to poor intergovernmental relations and disputed spheres of authority. In this context, as in others such as Accra or Kampala, where power is quite widely dispersed, land politics is thus accompanied by particularly intense institutional politics, given the often extreme fragmentation of authority among institutions. Institutional political conflict can occur at the horizontal level (that is, between agencies and institutions in a given city) as well as between national and local government. The latter is strongly conditioned by whether the political party in power is the same at national and city level; in Harare and Kampala, cities are opposition dominated, so vertical institutional conflict is particularly severe in these cases. However, horizontal institutional conflict is more about dispersed power at the city level and a lack of overarching authority. In a city such as Maiduguri, where power is relatively concentrated at city level, this is less of a problem than in cities like Accra or Harare, where it is not.

Thus, land politics, territorial politics and institutional politics have varying weight across our six case study cities, and we can make some tentative links between this and the nature of the political settlement – that is, the relative breadth of the social foundation, and the degree of concentration or dispersal of political power. In Figure 4, we engage with the ACRC analytical framework to consider some features of these three kinds of politics across different types of political settlement. The category of "broad concentrated" political settlements, in the top right-hand corner of the diagram, represents the type of settlement that according to the ACRC framework would be most conducive to successful urban reform. None of our case studies fall into this category, according to the ACRC political settlements mapping, but we have indicated what our analysis suggests would be likely features of the land and connectivity domain in such political settlements.

Figure 4: Land politics, territorial politics and institutional politics by political settlement type



Power concentration

In terms of what this analysis means for urban reform, the varied balance between land politics, territorial politics and institutional politics in different cities has implications for reform prospects. As is clear from this report, all cities face political challenges linked to weaknesses in systems of tenure and/or property taxation and land administration; but approaches to urban land reform need to be attuned to how reforms in these areas might be derailed by territorial or institutional politics. In settlements where institutional or territorial politics are likely to overwhelm land reform efforts, it is worth attempting to address these institutional or territorial/connectivity issues prior to pursuing major land reform initiatives. Thus, in "narrow dispersed" settlements like Harare and Mogadishu, the question of land reform is inseparable from that of who controls physical access to land and provides it with connectivity, necessitating engagement with actors who currently benefit from connectivity provision in discussions around land reform. In "broad dispersed" settlements such as Accra, tackling institutional conflicts, agency overlaps and intergovernmental disputes will be a particularly important foundation for land reform.

6. Conclusions and policy implications

This paper has examined the findings of our six city studies in the land and connectivity domain, against the backdrop of current and recent debates on urban land and infrastructure in African cities. While the literature on urban land in Africa is substantial, the extent of academic debate on how it relates to broader political and developmental processes has been limited, particularly when compared to discourses on rural land and its relationship to agrarian change and economic transformation. Much of the literature on urban land has until recently been focused on questions of tenurial multiplicity and conflict, land use regulation and the capacity to implement development controls, particularly with respect to what these mean for urban planning, environmental protection and managing sprawl and peripheral growth. We have here tried to build on the existing literature by situating urban land firmly in relation to questions of connectivity. While connectivity is central to how urban land gets its value, this relationship is deeply embedded in technological and sociopolitical dynamics, complicating any simple relationship between connective infrastructure and enhanced land use and land value. We have thus explored what a focus on the nexus between land and connective infrastructure on the ground in different African cities can reveal about the realities of land value creation, extraction and capture, as well as the technopolitical dynamics of land administration and how these are changing in the context of increased digitalisation.

Crosscutting findings

This report is only the beginning of such an exploration. Both in the broader literature on urban infrastructure that has exploded in recent years, and within the range of interconnected challenges explored within the African Cities Research Consortium itself, there is ample scope for cross-fertilisation and analytical deepening. In seeking to chart an agenda for further research at the nexus of urban land and connectivity, this paper seeks to draw particular attention to the following issues emerging from the research in this domain – all of which are interconnected.

The *first* finding, discussed in Section 4.1, relates to the multiple drivers of urban land value, which intersect in complex ways. In addition to public connective infrastructure, we highlight the role of private infrastructure provision; politically motivated land price inflation; information asymmetries; money laundering; security; physical geographical constraints and digital connectivity as factors that feed into land values. In contrast to parts of the global North, these may be more significant than regulatory factors in determining urban land values. Land value is central to how urban land functions as a tool of political patronage, a speculative asset for the rich, a potential concrete asset and source of collateral for lower-income groups, and a basis for value capture and infrastructure finance. Consequently, it is crucially important that we understand how land values are created and destroyed in practice, without taking as gospel the assumptions based on theory.

A second finding (discussed in Section 4.2) is that urban growth and residential development patterns often proceed without connective infrastructure to provide adequate access to newly developed areas – in direct contrast to assumptions in the world of urban planning that urban growth is *stimulated* by increased connectivity. While major developments such as new trunk roads do stimulate some growth and sprawl, much of urban growth takes place without road investments and, by unfolding within an economy of non-state value capture, can undermine the state's capacity to provide that connectivity. This can perpetuate a cycle of private value capture and limited connectivity.

Third, and strongly connected to both of the above, is the point (discussed in Section 4.3) that value is extracted from land by multiple societal actors, sometimes entirely independently of the state and sometimes in collusion with it – though the forms of non-state value capture that dominate differ substantially from city to city. As well as forming an important component of the urban economy, these practices of value extraction are central to the social security of some urban groups but also the physical insecurity of many urban residents. In addition, these practices of non-state value capture limit the resources available for state-provided connective infrastructure and the capacity for the state to acquire and effectively utilise urban land.

These dynamics also links to the *fourth* set of findings, discussed in Section 4.4, which is about the limits of property taxation and how this is rooted both in the vested interests associated with land value and speculation (point 1 above), the limited accessibility and connectivity in many areas (point 2), which heightens people's reluctance to pay tax, and the extent of property value that is already extracted by other actors before the state can attempt to tax it (point 3), which limits their capacity to do so. These aspects of the property tax problematic help to explain why, even in the face of improved valuation and administrative techniques, gains in revenue can be limited or short-lived.

Figure 5 illustrates some of the ways in which the issues discussed above connect to one another. It also highlights some of the ways in which the power configuration at city level impacts who is able to hold and withhold land information and capture land values in a given case, as well as some of the more obvious city systems that are affected by these intersecting dynamics.

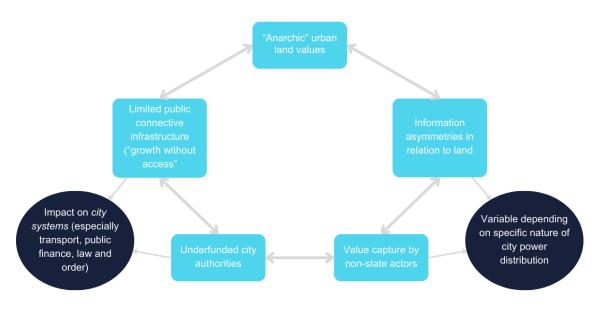


Figure 5: Intersecting challenges in the land and connectivity domain

A *fifth* key theme of this report (discussed in Section 4.5) relates to how technologies that may be brought in to try and streamline processes, such as property, registration, taxation and land dispute resolution, have their own politics. Technologies are rarely "neutral", since they are designed, developed and deployed by particular institutions or organisations. Part of the lure of the digital is that it seems to offer a level of impartiality, transparency and rigour that could help to eliminate political bias and corruption. Yet this assumption can obscure the politics of new technologies, meaning that we need to pay all the more attention to the basis on which data is collected, owned and used when such technologies are adopted – and to the erasures of competing claims that can occur when digital systems are adopted, and their political consequences. While part of the appeal of digital systems is that they are difficult to falsify, the weight given to digital records created at a particular point in time could also result in certain epistemological and power inequalities being set in stone, or new forms of technological sabotage (Ameyaw and De Vries, 2021). Technologies in themselves thus do not remove politics but merely alter the terms on which it is conducted.

This speaks to the *sixth* key issue emerging from the domain, which relates to the ways in which digital connectivity and digital technologies are transforming it – though the outcomes of this are still difficult to predict. New technologies for land registration, boundary mapping and valuation do seem to have made a real difference (for example, to property tax revenue) in some of our cases. Yet we also need to be attuned to the effects of digital technology on land markets and transactions *outside* the sphere of the state, and how forms of digital brokerage, remittance and speculation can potentially overheat land values and stimulate new digital forms of land "scams", even as they enhance access and in some respects open up the land market to previously marginalised groups, including women. The digitalisation of land can thus be seen as proceeding along two frontiers – one led by the state and focused on regularising and

rendering land legible and taxable, and one led by societal actors, with the aim of smoothing land transactions and facilitating new forms of financing development. How these two trends intersect, how they impact the way power is distributed, and what this means for equitable urban development, should be key areas for further research.

The remaining findings of the paper speak to the nature of politics within the domain, and the ways in which broader politics shape the domain. We make a distinction between i) *land politics*, where property in land is the focal point of contestation between individuals and groups, and where interests mobilise politically to defend property rights or try to augment their land holdings; ii) *territorial politics*, which are not about land-as-property so much as control over geographic space, who gets to access and use that space, and how land is connected to other parts of the city; and iii) *institutional politics*, which refers to how formal and informal governance systems relating to land and connectivity are arranged, and the ways in which this is contested. In Section 4.7, we explored the variable nature of land politics specifically, with attention to the political symbolism of land, patterns of distribution and the conflicts arising from this, and the political significance of land as a means of economic accumulation and speculation.

Comparative analysis and policy implications

In considering our cases comparatively, we make some tentative suggestions about how the nature of the political settlement affects the land-related political conflict in a given city and, relatedly, the prospects of reform. Land as (individual or collective) property is clearly of great political significance in all our cases; but this is often further complicated where significant territorial and/or institutional politics come into play. Institutional politics is likely to be more of a challenge where power is dispersed. especially if there is a relatively broad "social foundation", as in cases like Accra and, to some extent, Kampala. Here efforts to govern land for the benefit of a wide urban constituency are frustrated by the lack of coordination and mutually supportive authority across agencies and institutions. In situations with dispersed power and a narrow social foundation, there is reason to believe that territorial dynamics are of particular significance. For example, while Harare and Mogadishu are cities with very dissimilar historical legacies, they share some challenges that can plausibly be linked to a narrow social foundation – including the limited motivation as well as capacity of government to provide state infrastructure and security presence outside core areas, and the strength with which other actors thus claim territorial control. These cities face particularly acute challenges of transport infrastructure connectivity, beyond trunk routes.

Political settlements analysis can capture important dimensions of current power distribution, state capacity and likely commitment to reform; but in the land and connectivity domain, deep historical legacies that have shaped land institutions and the ways in which land is politicised cannot be fully captured by political settlement type. Meanwhile, firm policy recommendations for the land and connectivity domain that can be generalised across countries are not only very challenging to specify, but also potentially damaging, given differences in both legacies of land institutions and current

political settlements. The many problems faced across the globe by attempts to promote land tenure regularisation and conventional titling, and sometimes deleterious consequences of such efforts, are testament to this. Among the differences between cities that should be taken into account in reform efforts is the extent to which land transactions perceived as illegitimate, and associated discourses of "land grabbing", implicate state agencies (that is, compulsorily acquiring land for development on questionable grounds) relative to private elites (including politicians and their networks) appropriating public land. In the former situation, the question of building state legitimacy to govern the land domain may be more important than that of state capacity; whereas in the latter cases, the opposite may pertain. In reality, many cities may have a mix of both, but this question of relative legitimacy and capacity in the land and connectivity domain should feature in any pre-reform analysis, to avoid either reforms that are rejected as being part of a nefarious state agenda, or are simply unimplementable.

Reforms to tenure in particular must be city-specific, and have the potential to become highly politicised and potentially sources of violent conflict. For this reason, while major tenure reforms are often discussed among policymakers nationally and internationally, they rarely come to pass – and efforts towards them must be negotiated locally, over time. Situations such as those in Maiduguri, where ACRC-supported work around streamlining some forms of customary titles is going ahead, this is facilitated by a relative concentration of power and the prior resolution of certain institutional challenges through the creation of a new agency, BOGIS. The conditions for this kind of tenure reform do not pertain in many other cities. Meanwhile, territorial dynamics, whereby the state effectively lacks presence and authority in relation to infrastructural rollout and land use in particular areas, involve challenges of state legitimacy and capacity that transcend this domain. Efforts to expand the state's authority across whole urban territories needs again to take place incrementally, through small reforms that increase the legitimacy of state institutions in these areas over time, particularly with respect to land management and adjudication of land disputes.

The kinds of reforms that might fruitfully be pursued in all cities, and where cross-country learning can be productive, are therefore ones that speak more narrowly to questions of land administration, management and taxation, which over time could build the capacity to bolster territorial reach and even promote tenure reforms. We highlight here four areas in which it is likely to be fruitful to pursue reforms. A first step is to attempt to resolve interagency disputes of who governs which aspect of urban land, which is challenging enough in itself, particularly in large metropolitan areas. Related to this is the question of how to bring various kinds of intermediaries and non-state market and regulatory actors in the domain – including brokers, traditional authorities and religious elders (depending on context) – into discussion with government agencies about land reform needs. These wider platforms of discussion across state, communities and private sector are unlikely to reach successful conclusions without a coherent and coordinated approach on the part of the state.

A second, related area of reform that should be relevant in all cities relates to the need to maintain awareness that technical interventions can mask or even worsen existing political and institutional conflicts. However effective they might be at streamlining processes or reducing corruption, new technologies developed for the land domain should have broad buy-in across relevant government agencies if they are not to generate new forms of technopolitical resistance. Control and ownership of the data generated by such systems should be thoroughly scrutinised, as should the ease with which records can be changed, and where the legal authority rests to do this. The opinions of a wide range of stakeholders involved in the present de facto land regulation and registration processes should feed into this.

Third, although the reasons for ineffective property taxation are complex and vary to some extent by case, addressing this challenge is essential if city authorities are to achieve greater autonomy and capacity. It is also important for bolstering the urban social contract between citizens and states in contexts where property relations are so central to a city's political economy. Reform efforts could involve a focus on gradual improvements through enhanced and more regular property valuation procedures including through simplified hybrid valuation processes of the kind adopted in Sierra Leone (Grieco et al., 2019), as well as building public understandings of the functions and legitimacy of the tax, and improving enforcement mechanisms - building on experiences in Lagos, among other places (Goodfellow and Owen, 2020; Adekoya, 2023). Given that institutional conflicts are one of the things that often hamper property tax reforms, the latter are likely to be more successful in contexts where the political settlement involves relatively concentrated power among state agencies. Efforts towards enhanced property taxation could also be twinned with attempts to bring brokers into discussions about the benefits of formalising their activities in ways that could promote greater transparency in land pricing and valuation.

Finally, given that problems of overlapping and conflicting tenure will endure, there will be a need to gradually work towards reform in this area through experiments in bottom-up, socially legitimate but legally recognised means of establishing and contesting different forms of rights over urban land. This could build on work such as the Social Tenure Domain Model, recognising that experiments with interim/quasi-formal titling have value, even though they too also often encounter institutional dynamics that limit their efficacy (Manara and Pani, 2023b). This is difficult, long-term work that cannot be established with a "big bang", and is likely to be more successful in contexts where the political settlement has a broad social foundation, bolstering the commitment of the state to this process over time.

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Appendix A

Checklist of questions for land policy reform coalitions to answer at the city scale

Below are some questions that those interested in land reform should try to answer in any given city before attempting reform, with a view to understanding the potential distributional outcomes of different reform approaches and the likelihood of success.

- What role is the state playing in regulating urban land, and registering land transactions and land values, relative to non-state actors – especially in the urban peripheries? To what extent do these actors work with state agencies (formally or informally), or in conflict with them?
- What kinds of actors are seen as the primary "land-grabbers" in the city, and has this changed over time? To what extent are they seen as national or local actors? Do ideas of "land-grabbing" relate to specific forms of tenure, a general sense of a lack of state control, or a collapse of trust in the state itself?
- Which urban social groups (for example, ethnic, racial, religious, livelihood-based) have the strongest sense of grievance regarding land dispossession under colonialism, and under previous postcolonial regimes? What is their political relationship to the current governing coalition, and how might this privilege or disadvantage them in land reform efforts?
- What is the nature of land brokers in the urban land market, and to what extent is this formalised? How do brokers organise themselves? How might reform efforts impinge on the interests of land brokers, and what might be some ways of engaging them in discussions about reform initiatives?
- How coordinated or conflictual are the relationships between state agencies involved in governing land in the city (for example, vertical relations between city, division/district, state/province and national; horizontal between agencies at city level)? Are institutional conflicts primarily related to division of power between different political parties, between political and bureaucratic actors/logics, or more general tensions around overlapping authority? If in the latter category, how can these be addressed prior to land reform efforts?
- How legitimate are state agencies perceived to be with respect to their roles in land management, regulation and taxation? To what extent does this perceived legitimacy vary by urban social group and by area? What could be done to bolster state legitimacy to manage land?
- Who is providing connective infrastructure in peripheral areas where the state is relatively absent, and what is the relationship of these connectivity providers to the owners and de facto regulators of land?
- How significant are digital systems for land registration, tenure regularisation and property taxation, and which state agencies and political actors are pushing or resisting reform in this area? What are the processes for resolving competing claims to facilitate digitisation, and to what extent are these bolstering digital systems relative to parallel forms of documentation in relation to land claims?

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