

Paper Submitted for the Land and Poverty Conference

Title:

Comparative Analysis of National-Level Residential Planning Parameter Guidelines For Five Sub-Saharan African Countries

Author: HUANG, Chyi-Yun

Abstract

A comparative analysis of the urban planning parameters and guidelines is conducted for five Sub-Saharan African (SSA) countries – Ethiopia, Uganda, Tanzania, Kenya and Rwanda. The analysis focuses on the planning parameters for residential uses, and in particular, examines the density, plot size and site/plot coverage standards. The comparison is done between the national-level standards/guidelines. These usually exist as a compendium to the national-level Urban Planning Act (eg. as a subsidiary legislation, or in a manual, handbook or code form). The main objective of the study is to better understand the approach adopted in these SSA countries to guide residential urban development. This is particularly important in the context of SSA cities where informal settlement occupy high proportion of urban land, and where there are huge challenges in the ability to support affordable housing for a large urban poor population. It further attempts to reveal the strengths and weaknesses of the guidelines examined, as a first step to potentially improve them. Potential areas for future research are also identified. The study is one of the first attempts in this direction to fill a gap in current literature.

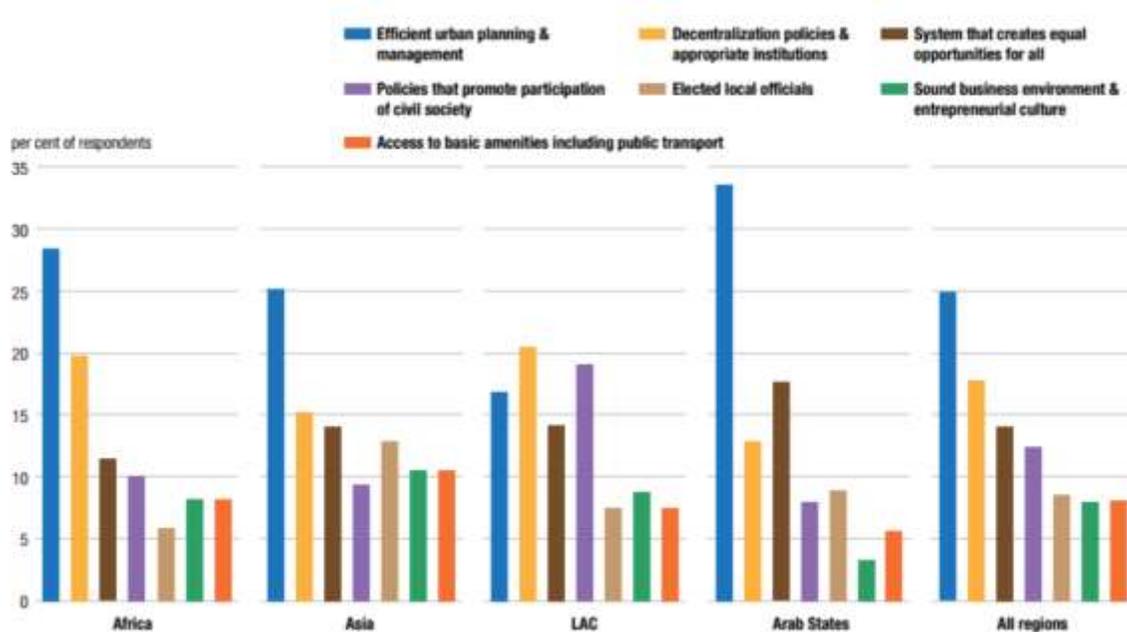
Key words

urban planning, regulations and guidelines, land development, informal settlement, institutional analysis, Sub-Saharan Africa

Introduction

There is broad understanding and agreement that urban planning, especially spatial planning, is fundamental in addressing urbanization challenges and enabling sustainable urban development in Sub-Saharan African cities. There is now a wide recognition that ‘planning is a much-needed integrative mechanism’ (Taylor, 2004) and a crucial tool for co-ordination. In a recent survey of local experts across the globe conducted by UN-Habitat, an overwhelmingly high number of respondents identified “efficient urban planning and management” as the top factor underlying urban prosperity (see Figure 1). Urban planning brings a wide range of value and functions, including the embodiment of long term vision, the creation of economic value through generating economic opportunities, balancing trade-offs for the common good, reducing negative externalities and enhancing livability.

Figure 1: Factors underlying urban prosperity as perceived by local experts



Source: UN-Habitat City Monitoring Branch, Policy Survey, 2011 from UN-Habitat (2013). State of World's Cities 2012/2013, Prosperity of Cities

Amongst these functions, the role of planning in coordinating the urban actors involved in shaping the urban form, providing infrastructure and services, safeguarding environmental services and enabling economic activities is arguably the most important especially in the context of African cities. ‘Spatial planning provides a way to engage with the flows of the city in pursuing the optimal sequencing, coordination and integration of infrastructure investments’ (Floater, Rode et al. 2014) as the very process of developing the spatial plans and its cross-sector nature demands the consultation of public, private and people, building consensus amongst these urban actors. If done effectively, planning will enable implementation and minimize conflicts during the implementation process.

Despite the perceived importance, the effects of urban planning in assisting to co-ordinate and manage urbanization and the spatial form of African cities are, at best, weak. The challenges and failures in urban planning are relatively well explored in current literature. Factors include the inherited legacy and inappropriate adoption of colonial and western-influenced planning models and regulatory codes (Balbo, 1993; Gandy, 2006; Kanyeihamba, 1980; Myers, 2003) which in part created mistrust and stigma to the

planning intentions and agenda. The divorce between plans and reality and inability to build in the implementation mechanisms (eg. considering finances, market dynamics and interests, various social and income groups etc.) when devising the plan and regulations results in impractical and thus ineffective plans and regulations. Further, the insufficient consideration or even intentional disregard for and actions against informality stalled necessary actions which could have been taken earlier. Constrained capacity and resources, in terms of financial and human is another factor leading to weak implementation and enforcement of the plans and regulations. On top of these, the institutional fragmentation (across sectors and levels) and failures, political interference and insufficient consideration of the political economy further distort planning intentions and eventual outcomes.

While cognizant of these various challenges facing urban planning in Sub-Saharan Africa countries, there merits a more in-depth understanding of the urban planning regulations themselves. Thus, the main objective of the study is to better understand the approach adopted in these SSA countries to guide residential urban development. It further attempts to reveal the strengths and weaknesses of the guidelines examined, as a first step to potentially improve them. The study is also one of the first attempts in this direction to fill a gap in current literature.

Methodology

The methodology adopted is largely a qualitative comparative analysis of the formal national-level urban planning standards/guidelines of five Sub-Saharan African countries – Ethiopia, Uganda, Tanzania, Kenya and Rwanda. The analysis focuses on the planning parameters for residential uses, and in particular, examined the density, plot size and site/plot coverage standards. The comparison is done between the national level standards/guidelines. These usually exist as a compendium to the national level Urban Planning Act (eg. as a subsidiary legislation, or in a manual, handbook or code form). Findings are also supplemented with limited field visits, interviews and other documents or data collected through desk research and literature review.

Comparative Analysis

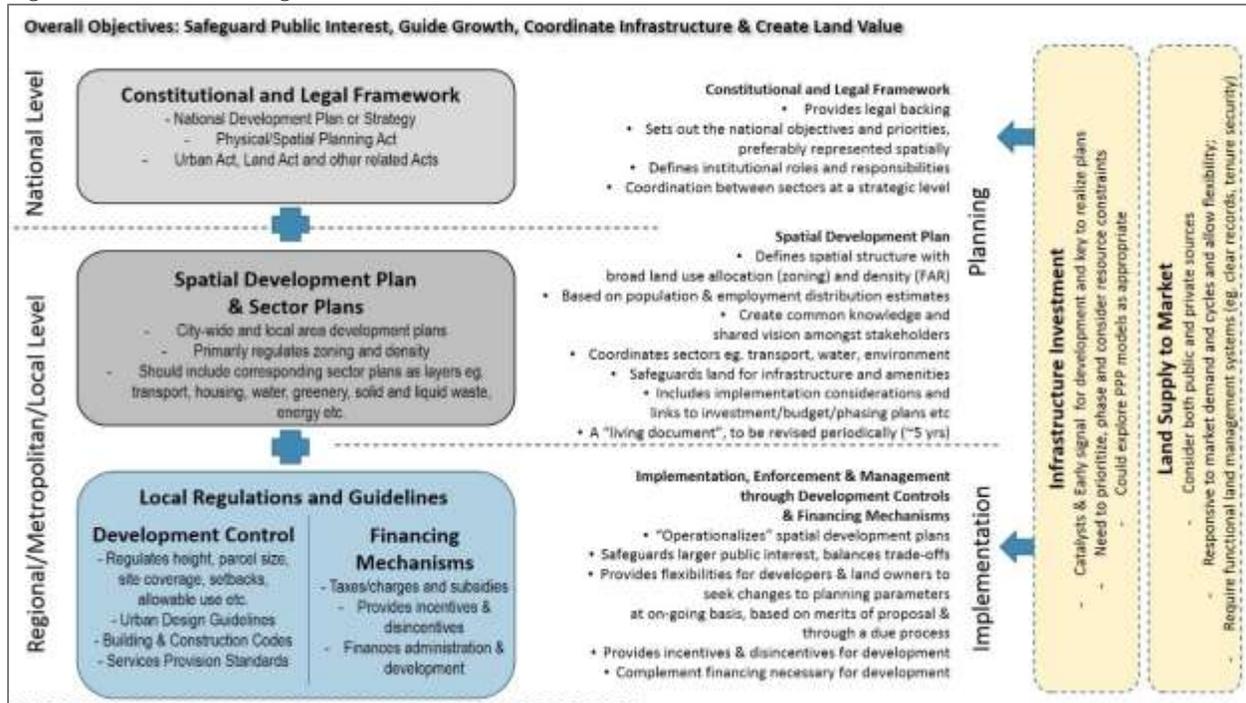
At the macro-level, the constitution or other national-level documents (typically national development plans or Land Acts or Planning Acts) provide the overall legal foundation and framework to guide urban development. These documents also define and empower the roles and responsibilities amongst different sectoral agencies and the relationships between the national to regional/district and local levels. Spatial representations in such national-level documents are desired although do not always occur.

In some cases, supplementary national-level guidelines, handbooks and compendiums are issued which go in-depth to regulate specific development control parameters (such as parcel size, density etc.). These serve the purpose of providing guidance and building local-level capacity. If sufficient flexibility is provided, these further empower the local governments to define their own detailed controls according to local conditions and context through local-level detailed plans and guidelines.

At the local level (or regional and metropolitan levels), urban planning and development regulations serve complementary functions. Plans can be thought of as the overall framework and could take the form as sets of agendas, policies, designs and strategies for physical development, encapsulated in a ‘two-dimensional layout of the physical form of the city’ (Neuman, 1998); urban development regulations (or development control) are binding rules concerning ‘what is built, where it is built, and when and how it is built’ (Kaiser

et al., 1995). Generally these take the form of land use regulations, zoning ordinances, building codes and other associated by-laws. Such regulations generally have the force of law, unlike master plans, which city councils consult but are not usually legally binding (Birch, 2008: 142). Figure 2 illustrates the relationship between the various urban planning instruments and tools, and how they work together from the national to local level.

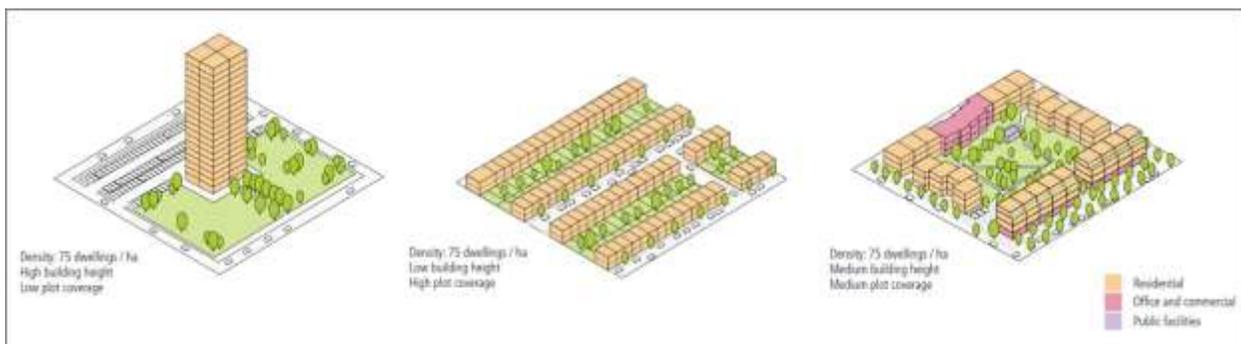
Figure 2: Urban Planning Instruments and Tools



Source: Author's illustration, 2016

Urban planning parameters, controls and standards such as type of uses, density, building height, plot size and plot coverage work together in a three-dimensional way and have a direct physical implication on the urban landscape. The following illustration reflects the relationship between these parameters and three scenarios where density is held constant, but with variations in other parameters. Further, this implies that an increase in density (most typically controlled by the FAR) could translate to multiple physical forms, depending on other planning controls.

Figure 3: Density Configurations on A One Hectare Plot



Source: Javier Mozas, Aurora Fernandez Per (2006), Density: New Collective Housing; UNHabitat 2013

In terms of national level strategies and policies specific to the urban realm, it is observed that many SSA countries are making commendable efforts in updating and enhancing related documents especially in the last two decades and moving away from colonial standards which may be inappropriate. Contrary to conventional belief, increasingly, more African countries have a national level development plan and even strategies and policies specific to the urban sector. Findings from “The State of Planning in Africa”, a study¹ of the SSA countries, showed that most have this national level strategic document to guide development in an integrated manner, considering social, economic and environmental factors. A 2013 assessment² of the enabling environment for well-functioning cities and local authorities in African countries found that one in three countries have a clear National Urban Policy and an additional five countries are undertaking national level thinking on urbanization.

A rapid survey of the urban planning laws and regulations in several SSA countries, also observed that a flourish of activities seems to be taking place since the 1990s to 2010s (eg. in Nigeria, South Africa, Ethiopia and in the last few years, Zambia, Uganda, Tanzania, Rwanda, Malawi, Kenya ec), with either new urban planning acts or policies passed, or old ones revised (see Table 1). During the same period of time, there is also a strong trend of decentralization - delegating the planning powers and functions from central to local governments. This is often solidified through a Local Government Act.

Table 1: Recent National Level Urban Planning Related Laws, Regulations & Guidelines in Ten SSA Countries

| Countries | | Recent National Level Urban Planning Related Laws, Regulations & Guidelines |
|-----------|----------|--|
| 1 | Ethiopia | <ul style="list-style-type: none"> • Urban Planning Proclamation (May 2008); • Several Manuals (Structure Plan, Local Development Plan, Integrated Planning Services and Infrastructure, Urban Planning and Implementation, Participation, Urban Transport Planning; mostly in 2006); • Building Proclamation (May 2009); • New Land Lease Proclamation (Nov 2011) |
| 2 | Ghana | <ul style="list-style-type: none"> • The National Development Planning (Systems) Act, 1994 (Act 480); • National Land Policy (1999); • Manual for the Preparation of Spatial Plans (November 2011); • National Urban Policy Action Plan (May 2012); • The Land Use and Spatial Planning Bill (draft 2012); • Ghana National Spatial Development Framework (2015-2035); |
| 3 | Kenya | <ul style="list-style-type: none"> • The Physical Planning Act (1996); • Physical Planning Handbook, June 2007 (Subsidiary legislation of the Physical Planning (PPA) Act Chapter 286); • Kenya Housing policy (2004); • Towns and Urban Areas Act (13 of 2011); • Kenya Physical Planning Act (2012); • Kenya Physical Planning Bill (2015); |
| 4 | Malawi | <ul style="list-style-type: none"> • The Town and Country Planning Act 1988, effective from 1991; • Malawi National Land Use Policy (2015); |
| 5 | Nigeria | <ul style="list-style-type: none"> • Land Use Act 1990; • Nigeria Urban and Regional Planning Act 1992; • National Physical Development Plan (being prepared); |
| 6 | Rwanda | <ul style="list-style-type: none"> • National Urban Housing Policy for Rwanda (Dec 2008); • National Human Settlement Policy in Rwanda (May 2009); • Law Governing Human Habitation in Rwanda (2011); |

¹ The State of Planning in Africa, UNHabitat, African Planning Association, February 2013.

² Assessing the Institutional Environment of Local Governments in Africa, United Cities and Local Governments of Africa (UCLGA) and Cities Alliance, September 2013.

| | | |
|----|--------------|--|
| | | <ul style="list-style-type: none"> • Urbanization and Rural Settlement Sector Strategic Plan 2012/13 - 17/18; • National Urbanisation Policy (NUP) (Dec 2015); • Rwanda Urban Planning Code (2015) |
| 7 | South Africa | <ul style="list-style-type: none"> • National Housing Code Technical and General Guidelines (2009); • Spatial Planning and Land Use Management Bill (2012); • Spatial Planning and Land Use Management Act (16 of 2013); • Draft Integrated Urban Development Framework (July 2014); • Spatial Development Framework Guidelines (September 2014); |
| 8 | Tanzania | <ul style="list-style-type: none"> • National Land Policy (1997); • Land Use Planning Act (2007); • National Land Use Plan (2008); • The Urban Planning and Space Standards Regulations (2011; 2015 draft) (Subsidiary Legislation to The Urban Planning Act) |
| 9 | Uganda | <ul style="list-style-type: none"> • National Physical Planning Act (2010); • National Physical Planning Standards & Guidelines (2011); • Uganda National Land Policy (Feb 2013); • Draft National Urban Policy (2013) |
| 10 | Zambia | <ul style="list-style-type: none"> • Town and Country Planning Act (1997); • Urban and Regional Planners Act (2011); • Urban and Regional Planning Act (2015) |

Source: Author's compilation, 2016.

A more in-depth study of the urban planning parameters and guidelines at the national-level was conducted for five countries – Ethiopia, Uganda, Tanzania, Kenya and Rwanda. The analysis focuses on the planning parameters for residential uses, and in particular examines the density, plot size and site/plot coverage standards. A characterization of the approach to drawing up the residential planning parameter guidelines of the five countries is summarized in Table 2:

Table 2: Residential Planning Parameter Guidelines Comparison of Five SSA Countries

| | | <i>Kenya</i> | <i>Tanzania</i> | | <i>Uganda</i> | <i>Ethiopia</i> | <i>Rwanda</i> |
|----------------------------------|--|--|--|--|---|--|--|
| Name of Official Document | | <i>Physical Planning Handbook (2007)</i> | <i>The Draft Urban Planning Regulations (2015 draft)</i> | <i>The Urban Planning and Space Standards Regulations (2011)</i> | <i>National Physical Planning Standards and Guidelines (2011)</i> | <i>Urban Planning and Implementation Manual (circa 2006)</i> | <i>Rwanda Urban Planning Code (2015)</i> |
| Standard or Guidance | | <i>Guidance</i> | <i>Standard</i> | <i>Standard</i> | <i>Guidance & Standard</i> | <i>Guidance</i> | <i>Guidance</i> |
| Classification Method | a) Housing Typology (eg. Detached/ Bungalow, Semi-Detached, Terraced/ Row House, Multi-Family, Multi-Storey) | Yes | Yes | Yes | Yes | Yes (but without detail) | No |
| | b) Density (eg. High, Medium, Low) | Yes | Yes | Yes | Yes | No | No (but minimum density) |

| | | | | | | | |
|--|-----|---------------|----|----|---------------|-----|--|
| | | | | | | | guidance given) |
| <i>c) Nature of Housing</i> (eg. slums and slum rehabilitation and upgrading, low cost housing, normal housing) | Yes | Yes (limited) | No | No | No | No | Yes (in terms of urban renewal or otherwise) |
| <i>d) Urban Hierarchy</i> (eg. urban core mixed use, urban sub-center residential and off-core residential or role of urban center) | No | Yes (limited) | No | No | Yes (limited) | Yes | |

Source: Author's analysis, 2016

There are pros and cons to the varying approaches taken by these five countries in guiding the residential developments. For example, the Ethiopia planning guidelines is the least specific of the five, and does not provide detailed numbers for plot size, density etc. It mainly states the principles – for example, “The average residential plot area depends on the respective regional state policy and the housing typology”. On one hand, this leaves more flexibility to the regional or local levels to define their own guidelines; on the other hand, the lack in guidance could result in vast variations across cities.

In the Kenyan case, the planning parameters are differentiated on three levels by: (i) the level of density (low, medium, high), (ii) the housing typology (bungalow, maisonette, multi-family, row housing, detached, semi-detached) and (iii) housing costs (slums and slum rehabilitation and upgrading, low cost housing, normal housing). (Although most plot ratio guides are not given.) Kenya’s regulation gives a good example of how the regulations are more realistic and customized - even addressing slum and low cost housing.

Rwanda presents yet another interesting approach - the planning parameters for residential uses are organized according to their relative positioning or urban hierarchy (ie. urban core mixed use, urban sub-center residential and off-core residential). While the maximum plot ratio (FAR) and plot coverage (PLC) guidance, amongst others, are given at the national level according to these land use sub-category, there are no specifications of plot sizes, which are likely to be specified by a Local Land Development Plan.

A country-by-country analysis of the urban planning guidelines/standards are presented in the next section.

Country Analysis

1) Ethiopia

Overall, the Ethiopia planning guidelines are not specific at the national level and does not provide specific numbers for plot size, density etc. Instead, detailed guidelines can be found at the more regional/local level plans. The Urban Planning and Implementation Manual prepared by the federal government is only intended to serve as a guideline, not as a standard or a specification. It mainly states the principles- for example, “The average residential plot area depends on the respective regional state policy and the housing

typology.” (See Figure 4.) Zones defined as residential generally allow for mixed-use (small business and manufacturing activities) as long as these do not cause nuisance to residents. A set of factors are given to guide the siting and development of residential areas. Plot area guidance was also given, and relates to housing typology (although no specific numeric figures given). As for site coverage, this should be related to the “role”, presumably the hierarchy, of the urban center.

Figure 4: Excerpt from the Urban Planning and Implementation Manual of Ethiopia

| |
|--|
| <p>2.1 Residential use</p> <p>Residential activities consist of pure and mixed activities. In the mixed use small business and manufacturing activities that do not cause nuisance to residents are located within a predominantly residential areas.</p> <p>Area determination factors:</p> <ul style="list-style-type: none">• Projected need for housing units (existing backlog and new housing needs);• Housing typology (apartments, row houses, villas, detached houses, duplex houses);• Number, type, and size of residential services and activities to be incorporated;• Educational, health, recreation, and other basic services to be located within residential areas;• Circulation access need (vehicular and pedestrian pathways);• Urban land policies and regulations at national and regional state level, respective to the urban center |
| <p>The average residential plot area depends on the respective regional state policy and the housing typology. The area coverage of residential activities can generally range from 40 to 60 percent of the total area of the built-up area of an urban center. However, the proportion varies following the role of the urban center.</p> |

Source: Urban Planning and Implementation Manual, Government of Ethiopia

The recent 2015 State of Ethiopian Cities survey found that cities follow different arrangements to define the maximum and minimum plot sizes, especially for residential use, even though they may not always comply with such plot sizes. In general, even though the majority of cities have adopted structure plans, there is no uniformity in the minimum and maximum size of residential plots allocated in the different urban centers. The lack of uniformity in plot sizes indicates that the size of plots allocated is not as per the standards set in the structure plan manual. Cities are expected to have discretion when determining such minimum plot sizes, however, depending upon their size, climatic condition and economic base as well as the availability of land.

The minimum residential plot size ranges from as low as 75 sqm for Harar to as high as 300 sqm for Semera town (one of the cities in the hot arid areas of Ethiopia, therefore, the relaxed minimum plot size for residential use might be to entertain the climatic situation of the area). A generally similar pattern is observed in four of the five cities from Tigray Region, where the reported minimum plot size is 100 sqm, with the exception of Adwa with 250 sqm. Nonetheless, this pattern is not repeated in other regions such as Amhara and Oromia where the minimum plot sizes adopted in the various cities is different.

Regarding the maximum residential plot size, Dilla leads all the urban centers with a maximum plot size of 800 sqm. Adigrat, Mekelle and Shire Endasselassie use a maximum plot size of 500 sqm.

Figure 5: Maximum and Minimum Plot Size for Residential Use for Cities

| S N | City/Town | Min plot | Max plot | S N | City/Town | Min plot | Max plot |
|-----|------------|----------|----------|-----|--------------------|----------|----------|
| 1 | Adama | 105 | 200 | 14 | Gonder | 150 | 200 |
| 2 | Adigrat | 100 | 500 | 15 | Harar | 75 | 500 |
| 3 | Adwa | 100 | 250 | 16 | Hawassa | 105 | 500 |
| 4 | Arba Minch | 200 | 500 | 17 | Hossana | 200 | 500 |
| 5 | Assosa | 200 | 500 | 18 | Jigjiga | 160 | 180 |
| 6 | Axum | 100 | 300 | 19 | Jimma | 140 | 500 |
| 7 | Bahir Dar | 105 | 500 | 20 | Kombolcha | 150 | 500 |
| 8 | Bishoftu | 105 | 500 | 21 | Mekelle | 100 | 500 |
| 9 | D/Markos | 110 | 500 | 22 | Nekemte | 160 | 200 |
| 10 | Dessie | 171 | 500 | 23 | Semera | 300 | 600 |
| 11 | Dilla | 200 | 800 | 24 | Shashamane | 140 | 500 |
| 12 | Dire Dawa | 160 | 500 | 25 | Shire Endaselassie | 100 | 500 |
| 13 | Gambela | 200 | 500 | 26 | Wollaita Sodo | 200 | |

Source: SECR Survey Analysis, 2015

2) Uganda

The Uganda standards given are differentiated by density while at the same time, linked with the housing typology – detached, semi-detached, terraced or multi-storey (Figure 6). In addition to plot area and maximum plot coverage, details were also provided for the configuration of the plots (minimum plot width and length) as well as minimum building lines (at the front, side, rear and even for Servants Quarters.). However, it is specified that the minimum plot size “should be given as a guidelines for designing residential layouts to make best use of urban land and infrastructure”. It is further stated that “there are no recommended plot sizes for housing estates” and such proposals will be “assessed on their individual merits”. A further guidance specified that “all plots should be rectangular in shape with the frontage shorter than the depth, citing minimization of infrastructure costs as the reason.

The Ugandan guidance given tend to be very prescriptive and potentially restrictive (such as specifying all plots to be rectangular), largely disregarding possible site conditions and contextual variations. The categorization could potentially be confusing too. Firstly, there are no specific definition of what constitutes low/medium/high density; and secondly, without corresponding height specifications, it is unclear if “high density detached” refers to low-rises or would also include “multi-storey” high-rises. These last two typologies are very different, and would merit different associated standards for the other parameters such as plot area and coverage. Specifications for plot ratio are also absent, thus not effective in guiding the actual form of buildings. The maximum plot coverage also seems low, only allowing up to 50% (especially for the “High Density Semi-Detached” category).

Further, the guidelines seem to be appropriate only for formal developments (and perhaps high-end ones, given specification related to “servants quarters”). No specific regulations are given for informal settlements. While typically, informal areas will be classified as “high-density”, in this case, it is not clear if “Detached” or “Semi-Detached” would apply as the typology of informal settlements are irregular. Another interpretation is that the guidelines simply do not give any recognition to informal settlement or low cost residential typologies.

Figure 6: Excerpt from the Uganda National Physical Planning Standards and Guidelines, 2011

Table 1: Site Standards for Residential Development

| | Low Density | Medium Density | High Density Detached | High Density Semi-Detached |
|----------------------------|---------------|----------------|-----------------------|----------------------------|
| Plot Area (Sq. M) | 1,000 - 2,000 | 600 - 1,000 | 300 - 600 | 200 - 300 |
| Minimum Plot Width (m) | 25 m | 20 m | 12 m | 12 m |
| Minimum Plot Length (m) | 40 m | 30 m | 25 m | 25 m |
| Maximum Plot coverage | 20% | 40% | 40% | 50% |
| Minimum Building Lines (m) | | | | |
| (a) Front | 8 m | 6 m | 3 m | 3 m |
| (b) Side | 3 m | 2 m | 2 m | 2 m |
| (c) Rear | 12 m | 8 m | 2 m | 2 m |
| (d) Servants Quarters | 3 m | 3 m | - | - |

Note: Developers who would express interest in purchasing bigger plots than those provided for by the standards are encouraged to consider plot amalgamation to meet their interests.

CHAPTER 2: RESIDENTIAL STANDARDS

The standards set out below refer to all types of residential developments categorised as below:

- Low density - detached
- Medium density - detached, terraced, or multi - storey flats
- High density semi - detached
- High density - detached

2.1 STATUTORY CONTROL

All residential developments are subject to physical planning regulations. In urban areas, the local authority should have building by - laws which govern the design and construction of permanent buildings.

2.2 PLOT SIZE AND SHAPE

The permissible ranges of plot sizes are given in table 1 and illustrated in figure 1.1. The minimum plot size should be taken as a guideline for designing residential layouts to make best use of urban land and infrastructure. There are no recommended plot sizes for housing estates. Proposals for these housing types will be assessed on their individual merits.

In order to minimize infrastructure costs per plot, all plots should be rectangular in shape with the frontage shorter than the depth of the plot. In certain circumstances, the depth should be about twice the frontage width.

Figure 1.1: Residential Standards

Source: Uganda National Physical Planning Standards and Guidelines, 2011

3) Tanzania

The current Urban Planning and Space Standards Regulations in effect is from 2011. In this version, with regards to formal housing, the standards given are differentiated by the housing typology – detached, terraced or multi-storey. For the detached house and multi-storey/block of flats typology, they are further differentiated by density (high, medium, low, super-low); but not so for the terraced house (Figure 7). For each, the minimum plot size, maximum coverage and maximum plot ratio are specified (minimum setback standards are only provided for detached housing). A fourth type – housing estate/apartments – is mentioned. However, the only associated standard is, presumably, plot size range of 5000 sqm to 10 hectares.

Overall, the standards given, if applied only to formal housing, seems technically reasonable. However, clearer definition (such as for density, and what constitutes each housing typology) will be desired. Consistency in the guidance given could also be improved.

Further, no specific recognition is given for informal settlements or low cost housing. While typically, informal areas will be deemed as “high-density”, in this case, it is not clear if category a) Detached House, or b) Terraced House, would be applicable as the typology of informal settlements are irregular.

It is recommended that: (i) regulations should be customized/provide for informal settlement/low-cost housing category; and (ii) the maximum plot ratio and maximum site coverage (for terraced house and for multi-storey/block of flats, especially that for high-density ones) could be relaxed to provide more flexibility and higher density developments, where appropriate.

Figure 7: Excerpt from The Urban Planning and Space Standards Regulations, 2011

| URBAN PLANNING AND SPACE STANDARDS | | | | | | | |
|--|-----------|---------------|----------------------|--------------------|----------------------------|------|------|
| 1. Space and Planning Standards for Residential Area:- | | | | | | | |
| <i>(a) Detached house</i> | | | | | | | |
| S/No. | Density | Plot Size (M) | Maximum Coverage (%) | Maximum Plot Ratio | Minimum setbacks in metres | | |
| | | | | | Front | Side | Rear |
| i | High | 300-600 | 40 | 0.4 | 3 | 1.5 | 1.5 |
| ii | Medium | 601-1200 | 30 | 0.3 | 3 | 3.0 | 3 |
| iii | Low | 1201-1600 | 25 | 0.25 | 5 | 4.0 | 5 |
| iv | Super low | 1601-2500 | 20 | 0.2 | 7 | 7.0 | 7 |

| <i>(b) Terraced House</i> | | | | | | | |
|---------------------------|----------------------------------|--|--|--|-------|--|--|
| S/No. | Description | | | | Value | | |
| i | Minimum Plot size M ² | | | | 150 | | |
| ii | Maximum Plot Ratio | | | | 0.5 | | |
| iii | Maximum site coverage | | | | 50% | | |

| <i>(c) Multi Storey/Block of Flats</i> | | | | | | | |
|--|----------------------------------|--------------|----------------|-------------|--|--|--|
| S/No. | Description | High Density | Medium Density | Low Density | | | |
| i | Minimum Plot size M ² | 400-600 | 1000 | 2500 | | | |
| ii | Maximum Plot Ratio | 1.5 | 1.0 | 0.5 | | | |
| iii | Maximum plot coverage | 70% | 50% | 25% | | | |

| <i>(d) Housing Estate /Apartments:-</i> | | | | | | | |
|---|--|--|--|--|--|--|--|
| 5000m ² to 10 hacters | | | | | | | |

Source: The Urban Planning and Space Standards Regulations, 2011 Subsidiary legislation of the Urban Planning Act, Cap. 355, Tanzania.

The Tanzania planning standards are currently being revised. In a **draft 2015 document**, the categorization has changed somewhat (Figure 8). The categorization is primarily by “residential areas” (presumably purely residential) versus “mix use areas”. However, it also associates housing typology (detached versus others

(further divided into various types of low, high-rise and skyscrapers) with the use types. This is unclear and potentially creates confusion.

Further the regulations now attempts to differentiate the urban hierarchy (peri-urban area), but does not do this in a consistent manner (no corresponding specifications for urban core or other areas). While this may provide flexibility for urban core, it may also create a loophole in terms of implementation and enforcement. It is recommended to have the corresponding standards for urban core areas (perhaps provided as “guidelines”) to enhance transparency and enforcement.

Other observations as compared to the 2011 version are:

1. The new standards does not seem to accommodate purely residential row/terraced houses, which is a common typology, and no associated standards are provided.
2. Setbacks for the front is very high across the board. This will result in very wide streets and lacks a human scale. Particularly for mixed uses, a close and continuous street frontage in appropriate locations should be encouraged to create lively and human-scale streetscapes.
3. The standards for plot size now included a statement: “*In special cases in unplanned settlement a Planning Authority may set to the minimum of 130sqm*”. This is encouraging as at least, the regulations has now begun to recognize unplanned settlement.
4. New standards are being proposed for Mixed Use and differentiated by low rise, high rise and skyscrapers. For these, the maximum plot ratio has been increased substantially which allows great flexibility for denser developments. However, the plot size for these are very large and seems to be directed at redevelopment (however, the intention is not clear). Further, there are new specifications on the maximum number of buildings. These may not be appropriate as the building form could vary greatly for these different types of developments. Lastly, the definition of Mixed Use need to be clarified (in terms of allowable percentage and allowable use types).

Figure 8: Excerpt from The Draft Urban Planning Regulations, 2015

| URBAN PLANNING SPACE STANDARDS | | | | | | | | | | |
|--|-------------------|------------------------------|--------------------|----------------------|----------------------|-----------------|-------------------|-------------------|-------|------|
| 1. General Standards | | | | | | | | | | |
| (a) Standards for Residential Areas - Detached house and Maisonettes | | | | | | | | | | |
| | Type | Plot Size in peri-urban area | Max. No. of family | Max. No. of Building | Max. Plot coverage % | Max. Plot ratio | Max. No. of story | Setbacks in Meter | | |
| | | | | | | | | Front M | Sides | Rear |
| i | High density | 301 – 600m ² | 1 | 2 | 60 | 1.3 | 2 | 5 | 1.5 | 3 |
| ii | Medium density | 601 – 800m ² | 1 | 2 | 55 | 1.0 | 2 | 7 | 2 | 4 |
| iii | Low density | 801 – 1200m ² | 1 | 2 | 50 | 0.7 | 2 | 10 | 2.5 | 5 |
| iv | Super Low density | 1201 – 2000m ² | 1 | 2 | 45 | 0.5 | 2 | 12 | 3 | 5.5 |

* In special cases in unplanned settlement a Planning Authority may set to the minimum of 130m.²

b) Specific Standards for mix use - Low Rise, High Rise and Skyscrapers.

| | Type | Plot Size | Use | Max. No. of Building | Max. Plot coverage % | Max. Plot ratio | Max. No. of story | Setbacks in Meter | | |
|-----|-----------------------------------|-------------------------------|-----------|----------------------|----------------------|-----------------|-------------------|-------------------|-------|------|
| | | | | | | | | Front | Sides | Rear |
| i | Low Rise (1-5 Storey) | 2001 – 4000m ² | mixed use | 1 | 60 | 2.5 | 5 | 10 | 3 | 5 |
| ii | High Rise type 1. (6-10 Storey) | 4001 – 8000m ² | mixed use | 2 | 55 | 5 | 10 | 15 | 3 | 5 |
| iii | High Rise type 2. (11-20 Storey). | 8001 – 20,00m ² | mixed use | 3 | 50 | 8 | 20 | 15 | 3.5 | 5 |
| v | High Rise type 3. (21-35 Storey). | 20,001 – 25,000m ² | mixed use | 4 | 45 | 12 | 35 | 20 | 5 | 7 |
| vi | Skyscrapers (36-50 Storey). | 25,001 – 30,000m ² | mixed use | 4 | 45 | 20 | 50 | 20 | 5 | 7 |

Source: The Draft Urban Planning Regulations, 2015 Subsidiary Legislations of the Urban Planning (Appeals) Regulations, 2015, Tanzania

4) Kenya

The planning parameters in Kenya are differentiated on three levels by: (i) the level of density (low, medium, high), (ii) the housing typology (bungalow, maisonette, multi-family, row housing, detached, semi-detached) and (iii) housing costs (slums and slum rehabilitation and upgrading, low cost housing, normal housing).

However, plot ratio guides are mostly not given; minimum plot size parameters are somewhat unclear and not all housing types have the associated guidance (Figure 9). These could either mean the regulations are

incomplete, or flexibility are deliberately allowed. However, the guidelines could be clearer on its position. It is also unclear why very specific numbers are given for the minimum plot size guidance (eg. 167.4 sqm for low cost row housing or 148.8 sqm for semi-detached slum rehabilitation and upgrading schemes); although it is stated that “these may be varied depending on the level and adequacy of the abovementioned factors and recommended plot coverage”.

Overall, Kenya’s regulation gives a good example of how the regulations are more realistic and customized; they even address slum and low cost housing specifically (Figure 10). Further, the regulation begin with defining the principle eg. “the minimum plot size should, generally, be determined by the *user, type of waste disposal, availability of water and level of building technology applied*”. The standards are also “recommended” and not a hard and fast rule.

Figure 9: Summary of Residential Guidelines from the Physical Planning Handbook, 2007

| | Minimum Land/ Plot Size (SqM) | Maximum Plot Coverage (%) | Plot Ratio |
|--|----------------------------------|------------------------------|------------|
| Normal Housing | | | |
| Low density | | | |
| Bungalow | 2000 | 50% | - |
| Maisonette | | 50% | 1:3 |
| Medium density | | | |
| Bungalow | 450 | | - |
| Maisonette | | 65% | 1:3 |
| Multi-family dwelling | | 65% | 1:4 - 1:6 |
| | | 65% | |
| High density | | | |
| Row housing | 300 | | - |
| Semi-detached | 232.5 | 70% | - |
| Detached | 309.7 | 70% | - |
| | 465 | 70% | - |
| Low Cost Housing | | | |
| Detached | 334.8 | 50% | - |
| Semi-detached | 223.2 | 60% | - |
| Row housing | 167.4 | 65% | - |
| Slums (slum rehabilitation upgrading) | | | |
| Detached | 223.2 | 50% | - |
| Semi-detached | 148.8 | 65% | - |
| Row housing | 111.6 | 65% | - |

Source: Adapted from Physical Planning Handbook, June 2007, Subsidiary legislation of the Physical Planning (PPA) Act Chapter 286 Laws of Kenya

Figure 10: Excerpt from the Physical Planning Handbook, 2007

(a) Plot Areas (Sizes)

The minimum plot size should, generally, be determined by the user, type of waste disposal, availability of water and the level of building technology applied. Another important factor of significance is the type of housing in the given scheme whether consisting of row housing detached or semi-detached units. As a guide Table 2.6 gives the recommended minimum plot sizes in the different cases of types of residential development. These may be varied depending of the level and adequacy of the above mentioned factors and recommended plot coverage.

TABLE 2.6: RECOMMENDED MINIMUM PLOT SIZES FOR DIFFERENT HOUSING SCHEMES

| TYPE OF HOUSING | MINIMUM PLOT SIZES IN SQUARE METERS | | |
|--|-------------------------------------|---------------|-------------|
| | DETACHED | SEMI DETACHED | ROW HOUSING |
| 1. Slum rehabilitation and upgrading schemes | 223.2 | 148.8 | 111.6 |
| 2. Low cost housing | 334.8 | 223.2 | 167.4 |
| 3. Normal housing development | 465 | 309.7 | 232.5 |

(b) Plot Coverage

Plot coverage as applied to a building means the portion of horizontal area of the site of the building permitted to be built. The essence of fixing plot coverage is to ensure a healthy environment and allow for expansion and improvement of infrastructural facilities and social amenities. The minimum plot coverage recommended are shown in Table 2.7

TABLE 2.7: MINIMUM PLOT COVERAGE RECOMMENDED

| TYPE OF RESIDENTIAL DEVELOPMENT | MAXIMUM PERCENTAGE PLOTS COVERAGE | | |
|----------------------------------|-----------------------------------|---------------|-------------|
| | DETACHED HOUSING | SEMI DETACHED | ROW HOUSING |
| 1. Slum rehabilitation upgrading | 50 | 65 | 65 |
| 2. Low cost housing | 50 | 60 | 65 |
| 3. Normal housing | 40 | 50 | 60 |

Source: Physical Planning Handbook, June 2007, Subsidiary legislation of the Physical Planning (PPA) Act Chapter 286 Laws of Kenya

5) Rwanda

In the Rwanda case, the planning parameters for residential uses are organized according to their relative positioning or urban hierarchy (ie. urban core mixed use, urban sub-center residential and off-core residential) (Figure 11). While the maximum density (FAR) and plot coverage (PLC) guidance, amongst others, are given at the national level according to these land use sub-category, there are no specifications of plot sizes, which are likely to be specified by a Local Land Development Plan.

It is recommended that the maximum plot coverage could be increased especially for urban core mixed use and sub-center residential. Especially in the city center, the higher coverage will allow more intimate urban spaces. The maximum FAR, particularly for urban core could be increased as well, to allow high-rise high density residential blocks. Further while specifying the minimum distance between detached buildings using a function of the building height could allow more light penetration and ventilation, this may result in “towers in the park” typologies especially for the urban core mixed use areas.

Figure 11: Excerpt from Rwanda Urban Planning Code. 2015

| Table 3: Zoning framework with plot development parameters per land use category | | | | | | |
|--|----------|----------|-----------------------|--------------------------------------|--------------------|---|
| Land use (sub-) category | Max. PLC | Max. FAR | Density min. units/ha | Min. distance b/w detached buildings | Setbacks | Other |
| URBAN RESIDENTIAL | | | | | | |
| Urban core mixed use | 0.6 | 2.4 | 70 | 0.4*Height | Front: Max. 6 m | Min. 20 % of units with non-residential use |
| Urban sub-center residential | 0.5 | 1.2 | 30 | 0.5*Height | | Min. 10 % of units with non-residential use |
| Off-core residential | 0.4 | 0.8 | 15 | 0.6*Height | | |

Source: Rwanda Urban Planning Code. 2015

Further, while no specific development parameters were given for informal settlements, a separate section on **urban renewal** stated the conditions for formalizing of existing buildings, including those developed informally:

- 1) Provisions from above article are fulfilled (minimum access to infrastructure and facilities, and that urban upgrading standards may deviate from standards for new development);
- 2) The building structure is in safe condition;
- 3) The land use is permissible in the area.

For **new land subdivision and re-plotting**, standard plot area for residential buildings are also specified:

- 1) For height of G: Plots with a plot area of up to 300 sqm
- 2) For height of G+1: Plots with a plot area larger than 300 sqm and up to 500 sqm
- 3) Development higher than G+1 shall follow the provisions of Plot Coverage, Floor Area Ratio and minimum densities on approved land subdivision independent of the provisions for standard plot sizes.

These development parameters are technically feasible and reasonable overall.

Key Findings

Overall, the key findings from the analysis are:

- Different approaches have been adopted by different countries when providing for urban planning parameters. Most tend to begin with a good appreciation of the principles, defining the parameters as guidelines and recommendations rather than standards and specifications with absolute limits. This allows flexibility and customization at the local level while still giving guidance to enhance harmonization across cities.

- Residential planning parameters are drawn with increasing appreciation and in response to different urban conditions, such as based on Housing Typology, Density, Nature of Housing and Urban Hierarchy. This is an encouraging trend allowing more granularity, appropriate regulations and guidelines to suit intended purposes.
- There are emerging recognition and move towards customizing planning regulations for informal settlements or low-cost housing (eg. Kenya, Ethiopia and most recently Tanzania), although it is still not a norm, and could be further improved.
- On the technical level, overall the guidelines and specifications are sensible. However, almost all the guidelines require much greater clarity and consistency. Technical improvements in specific areas could also be made.
- To further improve the guidelines, it is recommended that the various planning departments or national agencies perceive the urban space in a 3-D form when conceiving the guidelines. Conducting more simulation studies to understand the spatial impact of specific parameters is recommended. Continuous monitoring of on-the-ground conditions to determine the appropriateness of regulations drawn up would also better inform the guidelines. Where appropriate, guidelines should be revised or specific amendments issued periodically.

Future Research Direction

This paper offers one of the first attempts at a detailed comparative analysis of Sub-Saharan African cities' urban planning guidelines and approaches. Much more could be done to offer further insights. Some proposed future research direction include:

- Further comparative simulation of the existing residential guidelines could yield more in-depth view of the feasibility and appropriateness of these specific parameters. Further overlay and “testing” of such parameters to specific city context in each country would potentially provide more insights.
- Although not examined in detail in this analysis, most of the urban planning guiding documents also provided guidance related to other types of land uses (including commercial, industrial, public amenities eg. parks, schools, health facilities etc) as well as infrastructure provision considerations as related to different uses. These are potential areas for future research.
- While each country's regulations are highly contextual and should be examined in its own rights, comparing with similar guidelines of countries from other regions or “best practices” could potentially yield good references for policymakers.
- At the regional/district or the city-level, there are typically more detailed standards and guidelines (usually specified as part of a city master plan or local detailed plan). Further study and examination comparing the national level guidelines with local ones, or across different local level regulations could also be beneficial.

References

- Africa Research Institute (2013). Who will Plan Africa's Cities? Africa Research Institute Counter Points.
- Berrisford, S (2010a). Why it's difficult to change urban planning laws in Africa, African Centre for Cities Working Paper, University of Cape Town
- Berrisford, S for the African Centre for Cities (2010). Model course outline for Planning Law at an African planning School.
- Bertaud, Alain (2001). Metropolis: A Measure of the Spatial Organization of 7 Large Cities.
- Bertaud, Alain and Malpezzi, Stephen (2003). The Spatial Distribution of Populations in 48 World Cities: Implications for Economies in Transition.
- Carlos Nunes Silva et al. (2015). Urban Planning in Sub-Saharan Africa: Colonial and Post-Colonial Planning Cultures.
- Cartwright, Anton (2015). Better Growth, Better Cities: Rethinking and Redirecting Urbanisation in Africa, African Center for Cities
- Cities Alliance and United Cities and Local Governments of Africa (2013). Assessing the Institutional Environment of Local Governments in Africa.
- Department for International Development, African Centre for Cities (2015). Urban Infrastructure in Sub-Saharan Africa – Harnessing Land Values, Housing and Transport (and related project reports).
- Federal Democratic Republic of Ethiopia, Ministry of Urban Development, Housing and Construction and Ethiopian Civil Service University (2015). State of Ethiopian Cities Report. Addis Ababa June 2015.
- Magigi, Wakuru and Majani, B.B.K. (2005). Planning Standards for Urban Land Use Planning for Effective Land Management in Tanzania: An Analytical Framework for Its Adoptability in Infrastructure Provisioning in Informal Settlements. FIG Working Week 2005 and GSD-8, Cairo, Egypt April 2005.
- McAuslan, Patrick (2013). Land Law Reform in East Africa: Traditional or Transformative?, Routledge.
- Njoh, AJ (2006). "Planning Power: Town Planning and Social Control in Colonial Africa",
- Republic of Rwanda Ministry of Infrastructure (2008). National Urban Housing Policy for Rwanda.
- Republic of Rwanda Ministry of Infrastructure (2009). Updated Version of the National Human Settlement Policy in Rwanda, Kigali May 2009.
- Republic of Rwanda Ministry of Infrastructure (2013). Urbanization and Rural Settlement Sector Strategic Plan 2012/13-17/18.
- Republic of Rwanda (2011). Law Governing Human Habitation in Rwanda.
- Republic of Rwanda (2015). Urban Planning Code.
- Republic of Uganda (2011). Uganda National Physical Planning Standards and Guidelines, 2011
- The Republic of Kenya (2007). Physical Planning Handbook, June 2007, Subsidiary legislation of the Physical Planning (PPA) Act Chapter 286 Laws of Kenya.
- Turok, Ivan (2015). Turning the Tide? The Emergence of National Urban Policies in Africa.

UN-Habitat (2013). State of World's Cities 2012/2013, Prosperity of Cities, Nairobi Kenya

UN-Habitat (2013). Urban Planning for City Leaders.

UN-Habitat and African Planning Association (2013). The State of Planning in Africa.

UN-Habitat and Cities Alliance (2014). National Urban Policies, Nairobi Kenya.

UN-Habitat (2015). Planned City Extensions: analysis of historical examples

UN-Habitat (2015). Urban and Spatial Planning and Design. Habitat III Issue Papers

UN-Habitat and UNECA (2015) Towards An Africa Urban Agenda. UNHabitat, Nairobi

United Republic of Tanzania (2011).The Urban Planning and Space Standards Regulations, 2011 Subsidiary legislation of the Urban Planning Act, Cap. 355, Tanzania.

United Republic of Tanzania (2015). The Draft Urban Planning Regulations, 2015 Subsidiary Legislations of the Urban Planning (Appeals) Regulations, 2015, Tanzania

Whitehead, C, RLH Chiu, S Tsenkova and B Turner (2009) 'Land use regulation: transferring lessons from developed economies' in Lall, SV et al (2009) Urban Land Markets: improving land management for successful urbanization, Springer: New York

World Bank (2013). Planning, Connecting and Financing Cities - Now. Washington DC.

World Bank (2015). Stocktaking of the Housing Sector in Sub-Saharan Africa – Challenges and Opportunities, Washington DC.