Policy Brief

February 2019

Jonathan Bower

Density, connectivity and liveability

Linking the Kigali Master Plan to economic development

In brief:

- The 2013 Kigali Master Plan has contributed to Kigali becoming one of the most liveable and green cities on the continent. However, it has been criticised for being disconnected from economic planning, by being overly rigid, unevenly regulated and unaffordable for households and businesses to implement.
- Whilst the Kigali 2018 Master Plan Review is on course to do much to address these problems, this policy brief recommends a continued focus on appropriate zoning and renewed concentration on arrangements for implementation and financing. Three areas are particularly important:
    - First, for urban planning to help deliver higher per capita incomes and poverty reduction, it should be flexible enough to facilitate appropriate urban densities according to the needs of the market, and should respond to market conditions and public and private sector consultation.
    - Second, the Master Plan should enable connectivity between households and firms by zoning for sufficient infrastructure including roads and public transport, and the resourcing and financial model should be carefully considered, especially for the proposed Bus Rapid Transit which will be a central element in Kigali's transport system.
    - Third, the Master Plan should work with other policies to promote liveability and prevent overcrowding by allowing for low income formal housing, and by encouraging incremental building. Existing zoning for public green space, hitherto largely ignored, should be implemented.

This project was funded by IGC Rwanda

Background

The 2007 Kigali Conceptual Master Plan took the National Strategic Plan of Vision 2020 as a starting point, and developed a long term plan for Kigali that would guide the infrastructure and systems required for Kigali's growth. The 2013 Kigali Master Plan added planning and land use strategies and zoning regulations for the three districts. The result was an inspiring and ambitious document that has contributed to Kigali becoming one of the most liveable and green cities on the continent. However, the 2013 Master Plan has been criticised for being disconnected from economic planning, due in part to zoning regulations that are inflexible, inflexibly implemented and too expensive for many households and firms to afford.

The 2018-2019 Kigali Master Plan Review process, conducted by Surbana Jurong began with a number of consultations and focus groups to identify issues in the zoning and the 2013 Master Plan. It also includes studies of the housing market and commercial real estate market involving surveys and key informant interviews, which are commissioned by Surbana Jurong, conducted by IPAR and supported in part by International Growth Centre with resources and expertise from Professor Robert Buckley.

Whilst we are fairly confident at the time of writing that the Kigali 2018 Master Plan Review will address this, we would urge continued focus on appropriate zoning and renewed focus on arrangements for how it is then implemented and financed.

Urban planning is inseparably linked to economic development

Urbanisation is identified as one of the six "future drivers of growth" in the recently released World Bank study of the same name, and the National Urbanisation Policy (2015) recognises this in its four policy pillars of coordination, densification, conviviality and economic growth. Research has shown that spatial concentration of people, investment and economic activity, is critical for faster economic development. Lower transport times and costs resulting from proximity enable economic scale and specialisation. Richer or "thicker" markets for labour, supporting services, and the proximity of forward and backward linkages to industry make doing business easier. Cities also accelerate learning between workers and between firms by facilitating knowledge spill over.

However, to deliver higher per capita incomes and poverty reduction, cities must be well planned; urban planning that is badly executed or absent, combined with high growth of an urban population, can have high costs. These costs are often termed the 'demons of density', and include congestion, often caused by infrastructure bottlenecks; overcrowding and poor living conditions; pollution, caused by traffic and industrialisation; and crime.

To unlock the benefits of urbanisation, government needs to maximise the benefits of expanding cities whilst minimising its associated costs. A range of factors are important, including well-functioning land markets, efficiently administrated land and property taxes set at an appropriate level, and institutional capacity, but here we focus on the following three policy elements which are particularly relevant to the Kigali Master Plan:

1. Facilitate appropriate urban densities around the central business district, other key business areas, and along main transport routes.
2. Enable connectivity between households and firms by providing appropriate infrastructure.
3. Prevent overcrowding and improve liveability by enabling the housing market to deliver serviced formal housing that is affordable to as many households as possible, by encouraging incremental building, and by providing public green space

In the following sections we expand on these three themes.

1. Facilitate appropriate urban densities

Rwanda's cities need 'Goldilocks' density (World Bank 2018) – not too low to bring economic benefits, but not forced too high that tall buildings become too expensive for the market to afford. While government can incentivise density by providing amenities such as infrastructure and public green space, the land market reflects demand and thus the market price of land and are the best guide to achieving the density that is conducive for economic development, implying the need for well-functioning land markets unencumbered by inflexible zoning regulations.

Zoning should be flexible and complement market forces to achieve density that is 'just right'

The Kigali Master Plan Review: Analysis and Visioning Report (2018) acknowledges that the 2013 Master Plan had inflexible and demanding zoning regulations, which encouraged speculation, drove up land prices and "forced people to move to the city fringe", a phenomenon that was reportedly made worse by uneven strictness in Master Plan enforcement. A lack of central densification in residential housing is supported by analysis of building footprint data between 2009 and 2015 (Bachofer & Murray 2018). For appropriate densities, the need for more flexible zoning, and more flexible implementation of zoning is clear. Moreover, zoning should be based on the reality of the purchasing power of firms and households. The urbanisation-themed chapter in the Future Drivers of Growth report states:

> *"Private investments in urban structures in Rwanda's urban areas in 2017 need not, and should not, be regulated to deliver the spatial form for the 2040 economy." The report goes on: "an excessively detailed and rigid quantitative regulation of land use (such as zoning for detailed building characteristics and functions) makes inevitable the misallocation of capital, reduces the adaptive capacity of the city, and considerably dampens returns to private investment*."

To remedy the issue of inflexible zoning regulations, the Kigali Master Plan Review: Analysis and Visioning Report (2018) proposes to introduce flexible zoning, including an integrated neighbourhoods approach, which is a welcome development. Policy makers may worry that flexible zoning would encourage informal settlements, but evidence from Vietnam (World Bank 2012) suggests that deregulation of zoning standards will not increase informality but will rather have an inclusive effect by enabling markets to bring formal housing to households and firms with lower incomes.

2. Facilitate appropriate urban densities

Given that infrastructure is a public good and will not be provided by the market alone, government needs to provide and coordinate all the infrastructure that enables connectivity both within and between cities, such as roads and internet. The Government also needs to reduce or eliminate frictions that prevent this connectivity. Therefore, it will be important to provide well-functioning transport routes and facilitate public transport around the central business district, other key business areas, and along main transport routes, by zoning for infrastructure.

The Master Plan zoning does this. However, the challenge will be for infrastructure investments to keep up with the high rate of population growth in Kigali; between 2012 and 2017, the population increased by half a million people, and this approximate growth trend is set to continue.

Zoning should provide enough land for infrastructure, and this land should be secured as soon as possible to minimise cost

According to the World Bank (2018) in a sample of 30 cities around the world, the eight African cities included, of which Kigali is one, allocate under 16% of land to roads, but the average for high-income countries is over 20%. Providing enough space for roads through a grid is important for avoiding congestion; however, public transport should be privileged to dampen incentives to buy more cars.
As the city grows, expropriation of land for the purpose of the Master Plan will become more difficult and expensive. The Kigali Advisory Council thus rightly recommends that this land should be secured for intended zoning purposes as soon as possible, and at the cheapest rate legally allowable, followed by delivery of the intended public amenity, so that the former owners of the expropriated land can see the public benefit.

Zoning should privilege public transport, but the financing and cost of the proposed Bus Rapid Transit (BRT) route should be carefully considered

Better public transport would help to reduce spatial fragmentation in Kigali; a lack of bus lanes disincentivises the use of public transport, and incentivises cars, which cause congestion. Ministry of Infrastructure plans to pioneer some bus lanes; a policy that Paul Collier supported at the Kigali Advisory Council in December 2018. Plans for public transport are encouraging: the Master Plan Review includes a BRT feasibility study, for a BRT route that is planned to pass through key urban areas, connecting existing and new residential areas and employment centres.

However, the Future Drivers of Growth study states that “at present densities, technologies like dedicated bus lanes and safe walkways and cycle ways are appropriate”, and that “Bus rapid transit requires very high-density catchment areas around stops, and light rail even more so; hence, [in Kigali] these approaches become appropriate at much later stages”. Whilst the Master Plan Review includes phasing of the introduction of BRT, we would urge critical consideration about the timing, financing model and cost.

A recent IGC paper, Dynamics of Unplanned Settlements in the City of Kigali, finds that transport costs are around a fifth of household income in unplanned settlements, and that people overwhelmingly live within two or three kilometres of their work. One policy question to research may be whether small subsidies on bus fares or other public transport more than pay for themselves in agglomeration economies because people can afford to travel further to better jobs and firms in any one location can benefit from a larger pool of labour.

3. Prevent overcrowding and improve liveability

EICV 5 data from 2017 finds that 16.1% of houses in Kigali are overcrowded . For the bottom 20% of households by consumption, the figure is 25.7%. The figures for EICV 4 in 2014 were 15.7% and 23.0% respectively. Moreover, the ratio of households (defined as a group of people who eat together every day) to houses was close to 1 in 2011 but rose to 1.1 in 2014 and 1.2 in 2017, which is a striking increase in a relatively short time; moreover, the ratio is higher for lower income households.
Many policies have to be coordinated to solve the urban housing issue, including promotion of low-cost formal housing solutions such as the Skat model, reducing the cost of housing finance, and incentivising developers to produce housing costing less than 10 million RWF. Below we confine ourselves to the main issues related to Master Plan zoning, implementation and land use planning.

Zoning regulations should not increase the cost of formal housing, and should encourage incremental approaches

Most overcrowding happens in informal settlements. In the presence of low household purchasing power, an important way to reduce overcrowding will be to reduce the cost of decent, formal housing and increase its supply. Overly stringent zoning regulations can contribute to the growth of informal settlements because they significantly increase the cost of building formal housing. The World Bank (2018), referring to the 2013 Kigali Master Plan, states:

> *"To achieve high densities in lower cost structures—such as terraced housing with back yards as opposed to high rises— small plots with high ground cover are necessary. Yet several master plan zones in Kigali impose the opposite: large minimum plot sizes or a low maximum ground cover, even in central areas. Revising the minimum plot sizes downward and revising the maximum ground cover requirements upward, combined with more regular adjustments of requirements in response to market demand, would go a long way to encouraging densification, affordability, and formality".*

The Kigali Master Plan Review: Analysis and Visioning Report (2018) addresses this; it suggests smaller plot sizes, allows increased ground coverage, and will be less demanding in terms of parking requirements and landscaped areas inside plots, which is intended to allow for more public space at the neighbourhood level. It also allows flexibility at the individual plot level whilst regulating at the cluster level, through a newly introduced approach called "cluster zoning".

As mentioned, Surbana Jurong is commissioning studies of the housing market and commercial real estate market which are conducted by IPAR and supported in part by International Growth Centre with resources and expertise from Professor Robert Buckley. These studies will directly influence the level of zoning to make it affordable given the current and projected earning power of households and businesses and what this implies for built form.

Master Plan zoning standards and the Building Code should allow households to develop their houses, and neighbourhoods incrementally, most effectively in combination with a sites and services approach described in the next point. An incremental approach takes time, and for some years a project may not look attractive or tidy which may be difficult politically; however, the process has worked. A study of Chennai and Mumbai by Owens et al. (2018) found that homeowners began with inexpensive materials, but in later stages, they upgraded to bricks and reinforced concrete. The principle that households can undertake incremental construction in ways that match their resources, makes the financial burden of upgrading poor quality housing manageable, but households usually need formal ownership and decent infrastructure provision to incentivise them to invest this way, and the process would benefit from incentives such as subsidies or credit (Wainer et al. 2016).

Road grids should be laid out in advance of settlement, and land pooling conducted as early as possible to reduce cost, leading to sites and services for low income housing

Here we refer more to Master Plan implementation than zoning. Kigali is expanding fast, and most of the expansion has been of unplanned settlements, partly because of a lack of road grids to move into. The priority recommendation of the Kigali Advisory Council in December 2018 is to get serviced plots on the market, through a sites and services approach in which land is pooled, rationalised into regular plots and laid out in a grid, and the roads first marked out and eventually built, and electricity, water and eventually sewerage provided to each plot. It will also be important that these sites have affordable access to sufficient and appropriate jobs.

Paul Collier has said that it is far more expensive to retrofit infrastructure after households have already invested in housing in an area. In Bogotá, the costs of regularising informal settlements have been calculated as 2.8 times higher than the costs of developing serviced urban land for the poor (Abiko et al. 2007). Changing the order (building infrastructure first) could reap potentially enormous gains.

The New York grid was laid out in 1811, and mapped roads for an area ten times the area of the city at the time; the city developed around this map. After the grid was laid out, and especially after roads were built, land values rose dramatically, creating high demand from landowners for their areas to be readjusted (World Bank 2018).

The resources and capacity should be found to implement zoning and government policy on public green spaces

Public green space is an underrated amenity in Kigali; however, it will raise land values and enhance the attractiveness, liveability, inclusiveness and overall brand of Kigali City. Central Park in New York is inseparable from the brand of the city, and “in a recent 10 year stretch, 41 of the 50 most expensive residential real-estate deals in the city were done surrounding Central Park or one block away” . The Government has acknowledged the importance of green spaces for public leisure in the Conviviality pillar of the National Urbanisation Policy and on several other occasions.

However, as yet there are no major public parks in Kigali, and the only green spaces designated for relaxation are provided by the private sector and therefore not inclusive because of the necessity for payment. Plans for centrally located parks in the 2013 Master Plan have been abandoned as impractical in the 2018 Review. Reasons offered for this to the author include the cost of expropriation, competing demands for the use of green spaces, and the use of some of Kigali’s central green space for unexplained security purposes . A wetland for eco-tourism is planned at Nyandungu but this has been in the pipeline for several years and is not centrally located.

The Master Plan Review 2018 does plan to include public spaces in neighbourhoods and in some wetlands. As the city densifies and grows, the importance of implementing zoning of public green spaces will intensify; it is therefore increasingly important that the political will, resources and capacity are found to implement public green spaces.

4. Institutional coordination, capacity and resources

Economic and spatial planning should be better coordinated

Spatial planning, especially of infrastructure and public space, requires resources to implement; however, it is common that spatial planning and urban planning are disconnected from each other due to taking place in different institutions, and World Bank (2018) claims that this is the case in Rwanda, concluding that: “As Rwanda works to strengthen the economic dividend of urbanisation, economic planners should start to think spatially, and spatial planners should become more aligned with economic planning and goals. This change would be facilitated by a high-level, cross-institutional task force and a senior leader for the urban sector (such as a minister of state or director general).” Policies that impede movement to higher productivity opportunities in the city will have a significant adverse effect on growth, whereas policies that enable economic growth in Kigali will have an impact nationally; therefore, recent interest in the Master Plan Review from the Ministry of Finance and Economic Planning in Rwanda is laudable and should continue.

City of Kigali needs more resources and capacity for its One Stop Centre to implement the Master Plan and conduct forward-looking urban planning with excellence

The City of Kigali’s One Stop Centre fulfils the function both of the development control necessary to implement the Master Plan and also the function of forward-looking urban planning. According to the World Bank (2018), it is overstretched and lacks sufficient capacity to conduct flexible local planning. One reason for this may be a shortage of resources: construction permits are currently a flat fee of 60,000 RWF and are not scaled to the size of a development. One recommendation of the Kigali Advisory Council from February 2018 and December 2018 that seeks to address this is that construction permit fees are scaled to the size of a development instead of the current flat fee. IGC is researching how this can be possible whilst also improving Rwanda’s rank in the “Construction Permits” sub-component in the Doing Business index (106th in 2018, compared to its overall rank of 29th).

The new land and property tax requires careful implementation

It will be essential to mobilise resources to deliver the public goods - roads, public transport, conservation of natural resources and other amenities – that will support private investments. Therefore, implementation of the 2018 law establishing the sources of revenue and property of decentralised entities will be very important. The law is an improvement on the former tax and is likely, as it is phased in, to provide additional resources to build institutional capacity and pay for urban infrastructure to keep ahead of population growth. In addition to ensuring a broader and deeper tax base for local governments, the tax is also designed to encourage investment in commercial and industrial activities.

International experience on property taxes points to the importance of efficient implementation in realising the potential revenue gains; this involves effective registration and valuation, improvements to efficiency and clear communication and demonstration of the benefits of public investments enabled by the new property tax. A presentation by Sally Murray at the 3rd National Urban Forum highlighted several country experiences that illustrate this. In the City of Bogota, administrative reforms led to higher revenues. In Kampala and Somaliland, technology has been effectively used to address issues of non-compliance, increase registration and improve of valuation of properties. For Rwanda, coordination at the government level would be essential for facilitating proper implementation.

References

Alex Abiko, Luiz Reinaldo de Azevedo Cardoso, Ricardo Rinaldelli, and Heitor Cesar Riogi Haga. 2007. Basic costs of slum upgrading in Brazil. Global Urban Development 3 (November).

Bachofer, F & Murray, S,. (2018) Remote Sensing for Measuring Housing Supply in Kigali. International Growth Centre, London.

Bower, J & Murray, S,. (forthcoming 2019) Housing need in Kigali. International Growth Centre, London.

City of Kigali Master Plan, available here http://www.masterplan2013.kigalicity.gov.rw/

Glaeser E (2011) Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier. London: Penguin

National Urbanisation Policy (2015) MININFRA. Retrieved from: http://www.mininfra.gov.rw/fileadmin/user_upload/Rwanda_National_Urbanization_Policy_2015.pdf on 10 10 2018

National Institute of Statistics Rwanda, (2015), Rwanda Integrated Household Living Conditions Survey 4 (2013/2014) [dataset]. National Institute of Statistics Rwanda, Government of Rwanda, Kigali.

National Institute of Statistics Rwanda, (2018), Rwanda Integrated Household Living Conditions Survey 5 (2016/2017) [dataset]. National Institute of Statistics Rwanda, Government of Rwanda, Kigali.

Owens, Kathryn E. & Gulyani, Sumila & Rizvi, Andrea, 2018. "Success when we deemed it failure? Revisiting sites and services projects in Mumbai and Chennai 20 years later," World Development, Elsevier, vol. 106(C), pages 260-272.

Rwanda Official Gazette nº 44 of 29/10/2018, Law N° 75/2018 of 07/09/2018. Law determining the sources of revenue and property of decentralized entities. Available here https://rwandalii.africanlii.org/sites/default/files/gazette/OG%2Bno%2B44%2Bof%2B29%2B10%2B2018%2B1.pdf

Surbana Jurong, 2018. Kigali Master Plan Review: Analysis and Visioning Report.

Wainer, L. S., B. Ndengeyingoma, and S. Murray. (2016). Incremental Housing and Other Design Principles for Low-Cost Housing. Kigli: International Growth Centre.

World Bank, 2009. The World Development Report 2009: Reshaping Economic Geography. Washington, D.C. : World Bank Group.

World Bank. 2018. Future Drivers of Growth in Rwanda: Innovation, Integration, Agglomeration, and Competition (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/522801541618364833/Future-Drivers-of-Growth-in

Rwanda-Innovation-Integration-Agglomeration-and-Competition

World Bank. 2019. Doing Business 2018: Reforming to Create Jobs. Washington, D.C : World Bank Group. http://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2018-Full-Report.pdf