RESHAPING URBANIZATION IN RWANDA
Economic and Spatial Trends and Proposals

Synthesis Note

December 2017
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Table of Contents

Acronyms ............................................................................................................................................ v
Acknowledgments ............................................................................................................................. vi
Preamble .............................................................................................................................................. vii
1. Introduction ..................................................................................................................................... 1
2. Diagnostics of Rwanda’s Urbanization ......................................................................................... 2
   2.1. Rwanda has been urbanizing rapidly, trends which can be better captured by a refined definition of urban areas ................................................................................................................................. 2
   2.2. Kigali is central to the Rwandan economy, with a few economic clusters emerging ............ 7
   2.3. The potential of urbanization for job creation and poverty reduction has not been fully realized ...................................................................................................................................................... 9
   2.4. Fragmented urbanization and the lack of dedicated urban institutions and financing has constrained the full realization of urban potentials ................................................................................................. 12
3. Moving Forward: Reshaping Rwanda’s Urban Strategy ............................................................... 15
   3.1. Manage urbanization ahead of the curve through efficient planning and institutions .......... 16
   3.2. Improve market accessibility while providing universal access to basic services ..................... 18
   3.3. Promote targeted investments in cities with economic potential ................................................. 20
Bibliography ..................................................................................................................................... 22

Box
Box 1. Different conceptualizations of urbanization .............................................................................. 3
Box 2. Urban Definitions in Rwanda .................................................................................................. 3
Box 3. Recommendations on improving the clarity and consistency of urban definitions ..................... 16
Box 4. Improving access to low income housing: Flexible standards, lower costs, and innovative local solutions. ............................................................................................................................................... 17

Figures
Figure 1. Reshaping Rwanda’s urbanization .......................................................................................... 2
Figure 2. Evolution of urban settlements between 2002 (panel a) and 2015 (panel b) ......................... 5
Figure 3. The share and scale of rural-to-urban migration rising in Rwanda .......................................... 6
Figure 4. Internal migrants as a share of sector population ................................................................ 7
Figure 5. Number and share of nonfarm employment in Greater Kigali and secondary cities ............... 9
Figure 6. Increasing density translated into poverty reduction in areas with higher market accessibility .............................................................................................................................................. 10
Figure 7. Linkage between urbanization and poverty reduction is unclear beyond 5 km from the cores of secondary cities ........................................................................................................... 11
Figure 8. Nearly one third of Rwanda’s poor live within 20 km from one of the secondary cities .......... 11
Figure 9. New firm establishment concentrates in areas with high market accessibility ....................... 14
Figure 10. Poor regional connectivity results in a missing opportunity of regional trade ....................... 15
Figure 11. Convergence of living conditions between urban and rural areas ..................................... 18
Figure 12. Rural accessibility index and poverty rates are correlated in inaccessible areas................. 20

Tables
Table 1. Secondary cities and fast-growing towns, firm and job creation, 2011-2014 ................................ 8
Table 2. Status of urban infrastructure and service delivery ...................................................................... 13
Table 3. Annual investment requirements for urban expansion to 2020 .................................................. 19
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>DRC</td>
<td>Democratic Republic of the Congo</td>
</tr>
<tr>
<td>EDRPS</td>
<td>Economic Development and Poverty Reduction Strategy</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GoR</td>
<td>Government of Rwanda</td>
</tr>
<tr>
<td>LODA</td>
<td>Local Administrative Entities Development Agency</td>
</tr>
<tr>
<td>MINALOC</td>
<td>Ministry of Local Government</td>
</tr>
<tr>
<td>MINECOFIN</td>
<td>Ministry of Finance and Economic Planning</td>
</tr>
<tr>
<td>MININFRA</td>
<td>Ministry of Infrastructure</td>
</tr>
<tr>
<td>MPI</td>
<td>Multidimensional Poverty Index</td>
</tr>
<tr>
<td>NISR</td>
<td>National Institute of Statistics Rwanda</td>
</tr>
<tr>
<td>NLUDMP</td>
<td>National Land Use Development Master Plan</td>
</tr>
<tr>
<td>RHA</td>
<td>Rwanda Housing Authority</td>
</tr>
<tr>
<td>RUDP</td>
<td>Rwanda Urban Development Project</td>
</tr>
<tr>
<td>RWF</td>
<td>Rwandan Franc</td>
</tr>
<tr>
<td>UPC</td>
<td>Urban Planning Code</td>
</tr>
<tr>
<td>URDI</td>
<td>Urban Road Density Index</td>
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Acknowledgments

*Reshaping Urbanization in Rwanda: Economic and Spatial Trends and Proposals* was prepared by an extended team comprised of Tom Bundervoet (Task Team Leader, Senior Economist, GPVDR), Jonas Ingemann Parby (Task Team Leader, Senior Urban Specialist, GSURR), Shohei Nakamura (Task Team Leader, Economist, GPVDR), Narae Choi (Task Team Leader, Economist, GPVDR), Atsushi Iimi (Senior Economist, GTIDR), Frederic Ham (Consultant), Narae Choi (Consultant), and Robin Bloch, Jim Arthur, and Matthew Crighton (Consultants). The report was produced under the overall guidance of Pablo Fajnzylber (Former Practice Manager, GPVDR), Pierella Paci (Practice Manager, GPVDR), Sameh Wahba (Director, GSURR), Bernice K. Van Bronkhorst (Practice Manager, GSURR), and Yasser El-Gammal (Country Manager, AFMRW).

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Preamble

*Reshaping Urbanization in Rwanda: Economic and Spatial Trends and Proposals* is an Advisory Services and Analytics (ASA), jointly provided by the Poverty and Equity Global Practice and the Social, Urban, Rural and Resilience Global Practice at the World Bank. The objective of this report is to inform the government’s policies and strategies on urbanization as a driver of economic development, job creation, and poverty reduction, through the following four stand-alone but closely related notes.

- Note 1: Urbanization and the Evolution of Rwanda’s Urban Landscape
- Note 2: Internal Migration in Rwanda
- Note 3: Urbanization, Job Creation, and Poverty Reduction in Rwanda
- Note 4: Profiling Secondary Cities in Rwanda—Dynamics and Opportunities

Note 1 examines Rwanda’s urbanization process since 2002 by analyzing satellite images and various other sources. The changes in urban population and built-up areas are discussed together with the characteristics of the urban system and urban form and—in view of the key policy and legal framework guiding Rwanda’s urbanization process—the spatial economy of cities and production and dimensions of density and connectivity. Note 2 analyzes internal migration patterns of Rwandan households, mainly based on the last two household surveys, and discusses the main drivers or reasons for migration. Note 3 explores whether and to what extent urbanization—in the sense of increased density and enhanced connectivity—has resulted in job creation and poverty reduction in Rwanda. Note 4 provides a detailed analysis of the core secondary cities of the country, discussing their expansion in terms of urban area and population, economic profiles and potential, access to services, and urban development plans.

A separate note has been prepared to provide an alternative definition of urbanization in Rwanda, addressing the on the constraints associated with the current definition of urbanization.

This Synthesis Note presents the key findings, messages, and recommendations of the overall work.
1. Introduction

Rwanda has demonstrated a remarkable performance in economic growth and poverty reduction in the past decade and a half. Between 2002 and 2015, Rwanda’s per capita GDP increased by almost 80 percent in real terms. In tandem, the extreme poverty headcount rate (measured in terms of the US$1.90 per day) declined steadily from an estimated 77 percent in 2000 to 60 percent by 2013. While increased agricultural production and commercialization together contributed to 32 percent of the poverty reduction between 2000 and 2011, nonfarm employment (both self and wage employment) made an equally significant contribution of 27 percent to poverty reduction (World Bank, 2015a). Indeed, the share of nonfarm employment increased from 8 percent in 2002 to 26 percent in 2011.

In its vision to become a middle-income country by 2020, the Government of Rwanda has identified off-farm job creation and urbanization as a key driver for economic growth and national development. To turn this vision into reality, the country’s economic development and poverty reduction strategy (EDPRS) II (2013–2018) focuses on the transformation of Rwanda’s economic geography by facilitating urbanization and supporting secondary cities as poles of growth, as one of its key objectives. This transformation would require transitioning 50 percent of the population from farm to off-farm jobs. Vision 2020 also provides specific targets of 35 percent urban population and the creation on 1.8 million new off-farm jobs by 2020.

With urbanization as an explicit developmental strategy, the government has indeed made significant efforts to prepare a solid foundation on which urban development can take off. Relevant law, policies, and institutions were put in place or improved during the period under the EDPRS II, notably, the National Housing Policy (2015), National Urbanization Policy (2015), and National Informal Urban Settlement Upgrading Strategy (2017). This report reviews the extent to which such promotion of urban development in the national development policies has contributed to the long-term goals of improving living standards and economic outcomes. Based on the examination of the actual performance and role of urban areas, particularly secondary cities, over the years, the report makes tangible recommendations to rethink and reshape the current urban development strategies.

In this report, the following three key findings emerge (Figure 1).

- **Rwanda has been urbanizing rapidly** over the last 15 years, and likely more rapidly than previously estimated per national statistics.
- However, Rwanda’s rapid urbanization has been characterized by a modest growth of secondary cities, an increasingly fragmented expansion of Kigali, and lack of sufficient connectivity to secondary cities.
- As a result, urbanization in Rwanda has been accompanied by limited agglomeration economies and has not fully translated into job creation and poverty reduction.

To better leverage the potential of urbanization to sustain and generate economic growth and poverty reduction, this report recommends that Rwanda strategically improve the following three dimensions.

- **Institutions**: Manage urbanization ahead of its curve through efficient planning and dedicated institutions.
- **Infrastructure**: Improve connectivity between cities of economic potential, while ensuring universal access to basic services.
- **Interventions**: Promote targeted investments and strategies for secondary cities with economic potential.
2. Diagnostics of Rwanda’s Urbanization

2.1. Rwanda has been urbanizing rapidly, trends which can be better captured by a refined definition of urban areas

According to the 2012 Census, 16.5 percent of Rwandans are living in urban areas. The level of urbanization in Rwanda—that is, the share of the national population living in urban areas—does not differ much between the 2002 and 2012 censuses, despite the observable changes on the ground toward further urbanization. This is mainly because the definition of urban areas changed between the two censuses, making it difficult to compare the figures directly to evaluate urban population trends. For the 2002 Census, 15 cities were delineated and all settlements within these catchment areas were considered urban, even those that previously would have been classified as rural. The 2012 Census defined urban-rural status based on the smallest administrative entity: the village. Villages with a significant built-up area with infrastructure (e.g. schools, electricity, banks, markets, etc.) were considered urban.

At present, various definitions of an ‘urban’ area are found in Rwanda, making it difficult to track urbanization trends. There are essentially four different definitions articulated by Rwandan law (see Law No. 10/2012 and Law No. 24/2012), the National Land Use Development Master Plan (NLUDMP) of 2010, and the National Institute of Statistics Rwanda (NISR) (see Box 2 below). They shed light on different aspects of an urban area and thus can serve different purposes. Conflating them can lead to ambiguity and confusion in measurement. To resolve this, it is important to make a conceptual distinction between urbanization as a spatial-demographic process and urban development, which encompasses physical
improvements in built environments as well as socioeconomic change. For instance, the criterion of “important infrastructure” as used in the 2012 Census is useful for monitoring urban development rather than urbanization. The classification of urban settlements by Law No. 10/2012 and Law No. 24/2012 and the Urban Planning Code, reflects different functions of settlements in the urban hierarchy and thus is valuable for planning and investment purposes; but is not suitable for capturing differences in the size of the cities and tracking urbanization.

Box 1. Different conceptualizations of urbanization

The general concept of ‘urbanization’ can be disaggregated into three related but distinct processes: urbanization, urban growth, and urban expansion. Urbanization refers to change from rural to urban ways of living characterized by predominance of economic activities other than agriculture. Urbanization rate is calculated as the share of the national population living in urban areas. Urban growth refers to an increase in the absolute number of people living in urban areas. Urban expansion concerns the physical enlargement of built-up urban areas. With these conceptual distinctions, the way in which urban areas are defined will then determine what aspect of urbanization is to be measured (see Box 2 below).

Box 2. Urban Definitions in Rwanda

The National Land Use Master Plan (NLUMP) defines “urban” and “built-up” areas from a land use planning perspective which considers spatial, population, density, administrative, size and zoning aspects. It defines an urban area as a built-up agglomeration which exceeds 20 square kilometers (km²) and has a population of more than 10,000 inhabitants, resulting in a population density of more than 500 persons/km².

On the other hand, Law No. 10/2012 of 02/05/2012 “Governing Urban Planning and Building in Rwanda” defines three categories of urban settlements according to population size. It categorizes urban areas into (1) a city with at least 200,000 inhabitants; (2) a municipality with at least 30,000 but less than 200,000 inhabitants; and (3) an agglomeration with at least 10,000 inhabitants but less than 30,000 inhabitants.

In addition, the Urban Planning Code (UPC) of 2015 has defined a hierarchy of settlements as follows: The Capital City (Kigali) is the national urban center whose functions, services and facilities have national and international influence and impact; a Secondary City is a sub-national urban center comprised of an urban area within a Secondary City district, whose functions, services and facilities impact or influence the district—and beyond its borders; a District Town is the main urban area within a district other than a Secondary City district, and which provides central urban functions, public facilities and services for a catchment area of the whole district; and a Trading Center is an additional center to the main urban center of a district, and serves as a hub of socio-economic opportunities within a predominantly rural setting.

Finally, the 2012 General Population and Housing Census defined an urban area based on the smallest administrative entity, the village (Umudugudu). To qualify as urban, a village has to fulfil two main criteria of possessing: (1) an important built up area and (2) important infrastructures (education facilities, electricity and water, markets, banks and other financial institutions). According to the 2012 Census Atlas, 10 Districts have an urban area with one directly shared administrative boundary (the lowest level being the sector), while the remaining 20 Districts have more than one and up to four urban areas which do not have common administrative boundaries (the smallest being the one village in the whole sector).
As an attempt to provide an empirical basis to capture the reality whereby Rwanda has been urbanizing rapidly, particularly very recently, an alternative definition of an urban area was used in this report as an analytical experiment: a minimum population of 5,000 and a population density of greater than 1,000.\textsuperscript{1} Such a simple definition based on settlement population size and density is suitable for the purpose of monitoring urbanization (i.e., an increase in the proportion of the population living in relatively large, densely populated human settlements) instead of urban development (which encompasses physical improvements in built environments as well as socioeconomic change). The new definition was applied to a population map gridded by 1 square kilometer (km\textsuperscript{2}) cells to identify urban settlements.\textsuperscript{2}

The result of the analytical exercise demonstrates the large scale of urbanization taking place on the ground. Applying the new urban definition to an analysis of geocoded population data indicates that Rwanda’s urban population increased by almost 2 million people—or 132 percent—from 1.49 million to 3.46 million between 2002 and 2015, at an average rate of 6.7 percent per year. The level of urbanization also increased from 15.8 percent to 26.5 percent over the same period (Figure 2, panels a and b). The spatial analysis using this definition also identifies rapid urban expansion surrounding the capital city of Kigali and along the Rubavu-Musanze Urban Corridor, which more accurately reflects the observed trends on the ground.

\textsuperscript{1} This alternative definition of an urban area is used across the four Notes unless clarified otherwise. Detailed discussions of previous and alternative definitions of urbanization can be found in the Urban Definition Note.

\textsuperscript{2} The 2015 WorldPop datasets for Rwanda was used as the population map. The spatial distributions of population were estimated by applying a machine-learning method to the Census data, land-cover imageries, and other various types of datasets. See http://www.worldpop.org.uk/data/summary/?doi=10.5258/SOTON/WP00223.
Figure 2. Evolution of urban settlements between 2002 (panel a) and 2015 (panel b)

a. 2002

b. 2015

Source: Staff calculation based on WorldPop data.
The combination of natural growth rates and increased migration to urban areas has contributed to urbanization in Rwanda. Rwanda has experienced impressive declines in both infant mortality and fertility in the past decade (2005–2015), with a large decrease in infant mortality rates (number of deaths of children under one year of age per 1,000 live births) from 69 to 32 in urban areas and from 108 to 44 in rural areas. Rather unusually, urban fertility rates increased between 2010 and 2015, indicating that relatively more people are being born in urban areas than rural ones, possibly due to a more youthful age structure in urban areas. In comparison, overall, rural-to-urban migration accounted for an only limited share of inter-district residential mobility in Rwanda, although it is on an increasing trend particularly in the last four years (Figure 3). However, it is important to note that due to data limitations, the analysis only shows migration between districts, not movement within districts, and any move from villages to larger towns within districts is not reflected.

Figure 3. The share and scale of rural-to-urban migration rising in Rwanda

Kigali is by far the main destination for rural migrants, followed by Rubavu district. Inter-district migration to the other secondary city districts has been rather limited (Figure 4). Indeed, a significant inverse flow from secondary city districts to rural districts has been observed; notably, Huye, Rusizi and Musanze districts have negative rates of net inter-district migration. Although migration from rural areas to the secondary cities within the same districts is not captured in the analysis, this observation explains slower than average population growth in those secondary cities. Collectively, secondary cities are growing at an average annual rate of 3.3 percent, which is lower than the national rate of urbanization of 4.1 percent, and 4.2 percent in Kigali. The urban population growth rate in 2012 is indeed under 2 percent in

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3 While missing rural-to-urban migration within districts could lower overall rural-to-urban migration rate, missing urban-to-rural migration within districts (for example, people who moved out of secondary cities to surrounding rural areas within the same districts) could have an opposite effect. See Note 2 for details in methodology and results.

4 Since the available data captures only inter-district migration, the report refers to the districts where secondary cities are located as ‘secondary-cities’ districts’.
Huye and Rusizi (1.9 percent and 1.1 percent respectively), although Musanze is one of the faster growing cities (3.3 percent), together with Rubavu and Nyagatare (3.7 percent and 7.9 percent respectively), despite negative rates of net inter-district migration.

**Figure 4. Internal migrants as a share of sector population**

*Source: NISR (2012) Population and Housing Census (PHC)*

**Migration patterns in Rwanda are driven by distinct push and pull factors.** Intra-rural migration appears to be mainly driven by demographic factors and life-cycle effects, land scarcity, and localized absence of public infrastructure, while rural-to-urban migration is linked to the higher returns to education in urban areas. Urban-to-rural migration has a dual character, consisting of people who do not have the level of education and skills to afford living in the city, but who are too-well educated for jobs in the countryside, settling on the rural fringes (and likely still having their employment in the city); and relatively older and less educated city dwellers leaving for the Eastern Province to farm. One common element in all migration patterns is the role of education: education is the most robust correlate of migration, positively influencing rural-to-rural, rural-to-urban, and urban-to-urban migration and negatively influencing urban-to-rural migration (i.e. the higher the education level, the less likely to move out of urban areas to rural areas).^5^

**2.2. Kigali is central to the Rwandan economy, with a few economic clusters emerging**

Kigali remains the economic center of the country, though economic activity is gradually deconcentrating away from Kigali and primarily toward the Rubavu-Musanze corridor. Kigali contributes 61 percent of total non-agricultural GDP (41 percent of total), indicating the primacy of Kigali to the

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^5^ See Note 2 for the methodology and results of the analysis on push and pull factors.
Rwandan economy. In comparison, the six secondary cities together account for 19 percent of total non-agricultural GDP (13 percent of total GDP), while the three fastest-growing towns contribute an additional 8 percent (5 percent of total GDP). Outside of Kigali, the largest concentration of economic activity is in the Rubavu-Musanze corridor. Together, the cities of Rubavu and Musanze account for 7 percent of non-agricultural GDP, 4 percent of jobs, and 5 percent of firms. They also have a higher than average concentration of firms and jobs in the formal sector, an indicator of more productive economic activity. Of the 106,073 formal private-sector jobs accounted for by firms in the 2014 Establishment Census, 57,260 (54 percent) are located in Kigali, with the three districts of Rubavu, Nyabihu, and Musanze accounting for 7,388 (7 percent). When jobs in the informal sector are also considered, the share rises to 11 percent.

### Table 1. Secondary cities and fast-growing towns, firm and job creation, 2011–2014

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<tbody>
<tr>
<td>Huye</td>
<td>1,904</td>
<td>3,305</td>
<td>129</td>
<td>666</td>
<td>0</td>
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<tr>
<td>Muhanga</td>
<td>1,998</td>
<td>2,954</td>
<td>130</td>
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<tr>
<td>Musanze</td>
<td>2,119</td>
<td>3,926</td>
<td>111</td>
<td>769</td>
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<tr>
<td>Nyagatare</td>
<td>1,088</td>
<td>2,255</td>
<td>95</td>
<td>481</td>
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<tr>
<td>Rubavu</td>
<td>3,537</td>
<td>5,938</td>
<td>194</td>
<td>1,262</td>
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<tr>
<td>Rusizi</td>
<td>1,425</td>
<td>2,684</td>
<td>98</td>
<td>434</td>
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<tr>
<td>% of total</td>
<td>11%</td>
<td>11%</td>
<td>16%</td>
<td>12%</td>
<td>10%</td>
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<td>Gicumbi</td>
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<td>1,553</td>
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<tr>
<td>Rwamagana-Kayonza</td>
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<td>2,263</td>
<td>88</td>
<td>691</td>
<td>2</td>
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<td>Bugesera</td>
<td>762</td>
<td>1,424</td>
<td>34</td>
<td>267</td>
<td>2</td>
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<tr>
<td>% of total</td>
<td>3%</td>
<td>3%</td>
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<tr>
<td>Kigali</td>
<td>22,422</td>
<td>50,733</td>
<td>2,578</td>
<td>17,035</td>
<td>60</td>
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<tr>
<td>% of total</td>
<td>21%</td>
<td>27%</td>
<td>56%</td>
<td>49%</td>
<td>41%</td>
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<tr>
<td>Rwanda</td>
<td>106,993</td>
<td>185,757</td>
<td>4,622</td>
<td>34,728</td>
<td>147</td>
</tr>
</tbody>
</table>

Source: Establishment Census 2014

The urban corridor between Rubavu and Musanze has been successful in job creation, mainly driven by proximity to large markets in the Democratic Republic of Congo (DRC). Together Rubavu and Musanze form a corridor of urban development in the north-west of the country that stretches to the DRC and merges with the city of Goma just inside the DRC border. The two cities also benefited from a densely populated fertile agricultural land and the presence and investment from relatively large formal firms, as well as tourism. The importance of cross-border trade is also evidenced by Rusizi, which shares the border with Bukavu and where 44 percent of the workforce is employed in wholesale and retail trade—the highest share of any city.

The economic performance of others secondary cities varies, with relatively small share in job creation. Some secondary cities have not reached a sufficient size in population or density of firms to create agglomeration economies. According to Establishment Censuses, 11 percent of all firms and jobs (16 percent of formal firms and 12 percent of formal jobs) were created in the six secondary cities between 2011 and 2014. Together, Rubavu and Musanze contributed to the bulk of the job creation, accounting for
6 percent of formal jobs. The vast majority of firms in secondary cities (89 percent) are micro enterprises with between one and three employees, although this is also the case nationally (90 percent).

**Access to markets is an important determinant of secondary city performance, particularly since none of the cities are of a sufficient size to produce a viable internal market for manufactured goods.** At these secondary cities’ urban core, nonfarm employment accounted for 66 percent, but fell with distance away from the center, decreasing to 43 percent within 5 kilometers (km) from the city (Figure 5). Even in Greater Kigali, in 2012, the nonfarm employment share was 83 percent within the 5 to 10 km radius area, falling to 41 percent in its 10 to 20 km radius area. This indicates that non-farm and farm employment coexists within and around secondary cities, which can play a greater role in serving the localized economy, if the economic linkage between secondary cities and their surrounding rural hinterlands can be strengthened.

![Figure 5. Number and share of nonfarm employment in Greater Kigali and secondary cities](source: Staff calculation based on 2002 and 2012 Census. Note: Bar labels indicate the number and share of nonfarm employment. Note: Kigali includes geographic sectors within 30 km from the center of the City of Kigali; secondary cities include sectors within 20 km from the center of secondary cities (Huye, Muhanga, Musanze, Nyagatare, Rubavu, Rusizi), except for the geographic sectors within 30 km from Kigali.)

### 2.3. The potential of urbanization for job creation and poverty reduction has not been fully realized

**Urbanization has been accompanied by poverty reduction primarily in areas with high density and good connectivity.** Looking at the changes in population and poverty in Rwanda’s 416 geographic sectors between 2002 and 2012, a 10 percent increase in population density was associated with a 1.2 percent lower multidimensional poverty index (MPI).6, 7 Despite the overall contribution of urbanization to poverty reduction, the potential of secondary cities to create employment and reduce poverty is not fully realized.

6 Rwanda’s multidimensional poverty index (MPI) is a weighted average of nine indicators: years of schooling, child school attendance, child mortality, electricity, sanitation, drinking water, flooring, cooking fuel, and assets ownership. Households are identified as poor if their deprivation score is greater than 33 percent and in severe poverty if over 50 percent.

7 A geographic-sector fixed-effects panel regression model was estimated to analyze the statistical association.
reduction identified above, it is found that mainly the areas with higher population density have successfully translated increasing density to poverty reduction. In other words, an increase in density has not been clearly associated with poverty reduction in areas with low-density and bad connectivity, as measured by market accessibility index for each geographic sector (Figure 6). This means except for areas within Greater Kigali or close to secondary cities, agglomeration effects of poverty reduction are weak.

**Densification is all the more important given that the linkage between urbanization and poverty reduction and job creation quickly tapers off as one moves away from the city cores.** The linkages between urbanization, poverty reduction, and job creation observed in city centers decline sharply in the areas 5–10 km away from secondary cities, as compared to that of city cores (Figure 7). Opportunities for leveraging the benefit of urbanization are found in these peri-urban areas, which in turn should be better connected to the city cores both physically and economically. Rapid expansion of peripheral Kigali would create negative externalities without proper land use management and extended services and infrastructure. Currently, 30 percent of Rwanda’s non-monetary poor live within 20 km of one of the six secondary cities (Figure 8). Extending economic opportunities to this part of the population is key to their participation in the peri-urban economy and reducing poverty in the periphery.

**Figure 6. Increasing density translated into poverty reduction in areas with higher market accessibility**

![Graph showing the relationship between population density increase and poverty reduction](source)

*Source:* Staff calculation based on 2002 and 2012 Censuses.

*Note:* Y-axis indicates the expected percentage reduction in the Multidimensional Poverty Index (MPI) when population density increases by 10 percent. Dashed lines indicate 90 percent confidence intervals.

between the changes in population density and MPI between 2002 and 2012. Although time-invariant unobserved geographic-sector characteristics and observed demographic changes were statistically controlled for, the estimated linkage does not indicate a causal effect. See Note 3 for details.

8 The market accessibility index indicates how well the geographic sector is connected with areas with large population base. See Note 3 for details.
Figure 7. Linkage between urbanization and poverty reduction is unclear beyond 5 km from the cores of secondary cities

10% increase in population density is associated with...

Source: Staff calculation based on 2002 and 2012 Censuses.
Note: Bars indicate the percentage change in MPI corresponding to a 10 percent increase in population density at the geographic sector level. Error bars indicate 90 percent confidence intervals.

Figure 8. Nearly one third of Rwanda’s poor live within 20 km from one of the secondary cities.

Source: Staff calculation based on 2002 and 2012 Censuses.
Note: Bars indicate the numbers of non-monetary poor in thousands (poverty headcount ratio for each distance band in parentheses).
2.4. Fragmented urbanization and the lack of dedicated urban institutions and financing has constrained the full realization of urban potentials

Overall, Kigali and secondary cities have mainly expanded in a fragmented way, which makes it costly to provide urban services and connect people with jobs. Existing planning regulations and strict zoning may contribute to this trend of low-density, fragmented urbanization. Urban areas that are under new local plans subsequently become subject to zoning requirements, building codes, and new forms of property taxation that come with urban status, and make housing unaffordable to most. These regulatory factors generate incentives to develop property just outside of the formal urban area. This is already leading to (i) medium-density unplanned developments, and (ii) high-value, low-density properties on the urban periphery that use land inefficiently and unsustainably—in contradiction to spatial development strategies—which increases potential servicing costs and adds to transport requirements (access to work in cities). Furthermore, zoning rules require strong and rapid improvement of existing habitats toward formalization. In addition to excluding low- and low-middle income residents from obtaining housing within planned urban areas, zoning has encouraged: (i) construction of informal housing within urban areas; and (ii) the development of lower-income housing areas on the periphery of urban areas (outside the planned areas) creating inefficient, low-density urban sprawl, and adding to transport costs for those with jobs in the cities.

Access to urban infrastructure and services—particularly roads, power, and water—within core urban areas is generally fair, but falls off rapidly outside the core areas. Without timely and substantial interventions, service delivery challenges may increase in secondary cities going forward and risk impeding the development potential of these cities. There currently is not a massive backlog in infrastructure and services provision in the secondary cities and fast-growing towns (Table 2), largely because of their relatively small size and moderate population growth rates, and tendency for new residents to settle on the periphery of the urban area. However, current levels of service are low: few urban roads (about 25 percent on average) are paved, many households (about 25 percent) still rely on water from public stand posts, and a significant number of households (about 15 percent) lack access to electricity. If urban growth is to be accompanied by a progressive rise in levels of urban services, investment of a magnitude that is significantly above current levels will be required (Table 3). In particular, waste management, waste water management, and sanitation will be critical areas for investment in secondary cities in order to avoid impediments to urban development going forward.
Table 2. Status of urban infrastructure and service delivery

<table>
<thead>
<tr>
<th>City</th>
<th>Electric Power Connection</th>
<th>Water Connection</th>
<th>Water Sealed Latrine/Pit with Slab</th>
<th>Urban Road Density Index</th>
<th>Solid Waste Management Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Secondary Cities</strong>&lt;sup&gt;10&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huye</td>
<td>90%</td>
<td>65%</td>
<td>66%</td>
<td>2.3</td>
<td>Partial collection by district; no sanitary landfill</td>
</tr>
<tr>
<td>Nyagatare</td>
<td>75%</td>
<td>70%</td>
<td>66%</td>
<td>4.1</td>
<td>67% collection by district; sanitary landfill&lt;sup&gt;11&lt;/sup&gt;</td>
</tr>
<tr>
<td>Muhanga</td>
<td>90%</td>
<td>78%</td>
<td>58%</td>
<td>2.5</td>
<td>Dual community and district collection; no sanitary landfill</td>
</tr>
<tr>
<td>Rusizi</td>
<td>80%</td>
<td>86%</td>
<td>66%</td>
<td>3.8</td>
<td>21% collection by cooperative, no sanitary landfill</td>
</tr>
<tr>
<td>Rubavu</td>
<td>95%</td>
<td>81%</td>
<td>92%</td>
<td>0.5</td>
<td>67% collection by cooperative; no sanitary landfill</td>
</tr>
<tr>
<td>Musanze</td>
<td>90%</td>
<td>89%</td>
<td>68%</td>
<td>1.3</td>
<td>50% dual collection by district and cooperative; no sanitary landfill</td>
</tr>
</tbody>
</table>

| **Fast-growing towns**<sup>12</sup> |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Gicumbi (Byumba)              | Est. 80%        | Est. 60%        | Est. 55%        | Est. 3.0        | Partial collection by district; no sanitary landfill |
| Rwamagana-Kayonza             | Est. 80%        | Est. 65%        | Est. 60%        | Est. 1.5        | Partial collection by districts and community; no sanitary landfill |
| Bugesera                      | Est. 90%        | Est. 51%        | Est. 80%        | Est. 2.0        | Partial collection by district; no sanitary landfill |

While government has taken initiatives to reduce travel times and improve connectivity, challenges linked to connectivity still impede the expansion of urban and regional markets and represent obstacles for cities to specialize and harness agglomeration economies. New firm creation, in particular, is closely linked to market access, and transport connectivity is an important determinant of firm productivity. Kigali has the highest market access in the country, followed by the border cities of Rubavu and Rusizi. In general, though, urban areas outside of Kigali are poorly connected to markets and will require additional infrastructure investment, particularly in roads (Figure 9). With respect to regional connectivity, some Rwandan cities located close to the borders are relatively well-connected to neighboring countries, such as DRC, Burundi, and Uganda (Figure 10). However, it remains challenging to create potential agglomeration economies with more distant cities in neighboring countries. The relative connectivity, when considering both time and costs, is still stronger to Kigali. For instance, Musanze and Rubavu are

<sup>9</sup> Urban Road Density Index (URDI) is expressed in kilometers of urban road per 1,000 population.
<sup>10</sup> The estimates for services provision in the secondary cities are based on surveys carried out under the feasibility studies for the World Bank-supported Urban Development Project.
<sup>11</sup> Landfill construction supported by donor-funded waste management project.
<sup>12</sup> The estimates for services provision in the fast-growing towns are based on estimates from the One Stop Centers for each District.
better connected to Kigali than to Ugandan cities. The distance from Rubavu to Kabale is 14 percent further, and the transport cost 38 percent higher, than to Kigali.

With increasing urbanization, the need to strengthen urban institutions and improve access to development finance will become critical for urban economic growth. Urban areas currently have no explicit jurisdiction and fall across sector boundaries, creating ambiguity that compromises efficient urban planning and management. Districts outside of Kigali are still dominated by the rural economy. Effective urban development requires, at least, qualified and sufficient staff focused on urban areas within districts, and at best, separate urban management and administration, i.e. per the creation of actual municipalities. There also remain significant capacity constraints and staffing shortages, which compromise districts’ ability to support urban infrastructure and service growth and development. On the financing side, a combination of (i) limited own-source revenues, and (ii) tight earmarking of grants from the central government, leaves the districts with very limited flexibility in discretionary funding of development projects. This constrains the ability of district governments to direct expenditure toward the urban infrastructure and services necessary to support urban development.

**Figure 9. New firm establishment concentrates in areas with high market accessibility**

Figure 10. Poor regional connectivity results in a missing opportunity of regional trade (Transport costs to major cities measured in US$/ton)


3. Moving Forward: Reshaping Rwanda’s Urban Strategy

Against the backdrop of Rwanda’s urbanization patterns above, this report recommends that the government reshape its urbanization strategy by working on the three I’s: institutions, infrastructure, and interventions. Establishing the institutional groundwork should precede spatial policy and interventions. While ensuring universal access to basic services, particularly in rural and/or lagging regions, the government should also expand existing interventions to further improve connectivity between rural and urban areas, among cities, and across regions. It is important to note that some secondary cities currently lack the potential to reach the required size and economic density to serve as realistic growth poles. Initially focusing investment on a fewer cities with existing competitive advantage may deliver economic growth more efficiently. Further research is then needed to better understand what roles/functions different cities can play in the economic geography of the country, and whether and how any trade-offs are involved in different spatial allocations of public investment.

3.1. Manage urbanization ahead of the curve through efficient planning and institutions

*For Rwandan cities to fully function as drivers of economic transformation, the efficiency of planning and institutional performance should be enhanced, both nationally and at the city level. Key to this are clear definition of urbanization, effective planning and zoning, and sufficient funding.*

A refined and consistent definition of urban areas is needed to better guide the tracking of urbanization and spatial development and investment. A new definition can help to demarcate jurisdictions more clearly and consistently and re-adjust the public financing framework to account for demand for services and infrastructure in urban areas. A more explicit definition is also necessary to collect urban-specific data to capture within-district migration patterns (not just between districts) in household surveys and to better understand urban areas’ economic and poverty reduction performance.

**Box 3. Recommendations on improving the clarity and consistency of urban definitions**

For the purpose of monitoring urbanization in Rwanda, the following recommendations are offered:

- A binary rural-urban geospatial classification system should be adopted, in which an ‘urban’ settlement is defined as any area with at least 5,000 inhabitants living at a minimum density of 1,000 people per square kilometer (km²). This will facilitate monitoring of *de facto* spatial-demographic trends, inform development planning, and provide a clear basis for international comparison.

- This basic settlement classification criteria should be introduced into the ongoing amendment process of the Law Governing Urban Planning and Building in Rwanda (Law No. 10/2012). The typology of urban settlements articulated in this law also should be revised for planning, investment, and administrative purposes.

- A separate suite of indicators should be prepared and used to monitor urban development—i.e. changes in the physical and socioeconomic characteristics of settlements. These indicators will be informed by the National Urbanization Policy and aligned with the goals of Coordination, Densification, Conviviality, and Economic Productivity.

- A legal-administrative definition of urban settlements should be introduced in law to lay the foundations for effective urban administrative at different spatial scales.

Increasing coherence in spatial planning and land use zoning can help Rwanda to promote high-density development and reap the benefits of urbanization without the increased inefficiencies of urban sprawl. Rapid expansion, as observed in and around Kigali and most secondary cities, coupled with the connectivity challenges, can undermine the efficiency of urban management and services delivery. Promoting high-density development and preventing sprawl will require several interventions. This includes fast-tracking implementation of the new National Planning Framework and using provisions of the National Housing Policy (2015) to increase urban housing density and improve affordability. Once land development and housing costs are brought down, the emerging problem of unplanned development at the edge of urban areas, or just beyond planning jurisdictions, can be reduced or avoided. The government can further seek to systematize the zoning and land management of the area by fast-tracking the production or revision of master plans, land-use, zoning, and local area development plans, which should be regularly updated. A long-term development plan is needed to avoid any uncontrolled and irreversible patterns of land development that may create inefficiencies further on.
Box 4. Improving access to low income housing: Flexible standards, lower costs, and innovative local solutions

The Government of Rwanda’s new National Housing Policy sets out approaches to encourage the development of affordable housing for urban dwellers on low or irregular incomes. There is now evidence that some of these approaches are moving forward following adoption of the Prime Minister’s instruction on support for affordable housing. The instruction includes: (i) the amended law relating to investment promotion and facilitation which incentivizes private investment in affordable housing; (ii) associated tax incentives; (iii) support to local production of construction material; and (iv) a draft Presidential Order outlining the organization and processes for improved collaborative between national and local governments and the private sector in low-income housing development. Most recently, the establishment of the Affordable Housing Fund was announced in July 2017, with an aim to reduce the interest rates of housing finance for both developers and beneficiaries.

Continued effort is required to promote institutional reform across the housing supply and demand chain. For delivering urban housing at a fraction of the current least-cost new housing unit on the market, standards for planning (e.g., plot size and plot ration) and possibly construction (building materials) need to be relaxed, and readily available local materials and construction techniques should be widely utilized. Policies and urban development norms and standards currently militate against the development of efficient and high-density cities. Among the issues that need to be addressed is the strong public preference for single story dwellings with a surrounding wall and some open space. Other issues relate to the type of building materials used.

A low-cost housing pilot project implemented in Batsinda in Kigali-Gasabo in 2008 applied a sustainable green building approach using local construction materials (compressed earth blocks), and renewable sources of energy (biogas, solar and rain water harvesting) on a small plot size. While the structure would not likely satisfy today’s urban planning and building standards, such innovative approaches are still necessary to address the urban housing crisis, and this did demonstrate techniques for reducing the unit cost of housing.

As illustrated by the pilot projects currently under implementation by the Rwanda Housing Authority (RHA), local government approval of a reduction in normal minimum plot-size within the private sector-led developments can facilitate affordability. In-situ pilots to upgrade informal urban settlements also offer an option of shelter improvement through service development. Often, they include improvement of basic or tertiary infrastructure (e.g., small loans for housing/sanitation improvements) with minimal relocation, and community input and choice of proposals. Flexible application of functional standards is critical for the incremental provision of infrastructure and spreading benefits of limited funding as widely as possible.

Dedicated urban institutional arrangements with sufficient financing are needed for more urbanized districts to contribute to the acceleration of the economic transformation in Rwanda. The mismatch between the institutional and fiscal capacity and demands for urban infrastructure and services at the district level needs to be addressed for better management of urban development. A short-term focus could address existing capacity gaps, with a vision for creating Urban Development Authorities in the medium term and/or local urban governments in the medium to long term. This revision should also be associated with a parallel review of the intergovernmental fiscal framework, which can bring additional financing through (i) urban-focused government grants; (ii) increased local fiscal autonomy; (iii) enhanced
local revenue generation; and (iv) attraction of private sector financing into urban infrastructure and services provision—particularly where direct cost recovery is possible.

3.2. Improve market accessibility while providing universal access to basic services

Ensuring universal access to basic services, in view of the current and anticipated infrastructure gaps in growing cities and towns, is of high priority. In tandem, it is vital that the government improve connectivity among different layers—between rural and urban areas and across regions.

**Provision of basic services should be universal.** Living conditions between rural and urban areas have been converging (Figure 11). For example, no gap is observed between rural and urban areas in the net primary school attendance as of 2015. Such promotion of education access in rural areas is effective not only for poverty reduction and but also for improving the quality of labors flowing into urban areas. Nevertheless, the infrastructure gap remains a constraint to doing business in Rwanda and improving the livability of cities. In secondary cities, the level of infrastructure and the provision of services can respond to basic needs at the current situation, but does not support economic growth within the city and represents a constraint to private sector investment. Furthermore, solid waste management and waste water treatment risk becoming a major challenge going forward, if unaddressed.

![Figure 11. Convergence of living conditions between urban and rural areas](image)

**Sources:** Demographic and Health Survey (DHS) 2000, 2005, 2010, 2015

**For addressing urban infrastructure deficit, more financial resources need to be mobilized.** Based on the estimated infrastructure and services backlog for each secondary city and for the emerging towns, and on projected growth rates, estimates for funding requirements for infrastructure and service improvements are calculated and compared against existing levels of investment in urban infrastructure and services. While this analysis may not capture all the current expenditure on infrastructure and services supporting the secondary cities and fast-growing towns, it is clear that significant additional resources will need to be directed toward urban infrastructure and service provision if (i) the government’s urbanization objectives are to be realized across all urban areas, and (ii) the existing standards for urban planning and housing are to be met.

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14 Existing levels of investment in urban infrastructure and services were derived from district budget figures. Consultant’s estimate based on unit costs of service provision taken from RUDP and WSAC sources, and with a 10 percent per year allowance to cover progressive addressing of existing infrastructure backlog.
Table 3. Annual investment requirements for urban expansion to 2020

<table>
<thead>
<tr>
<th>District</th>
<th>Town</th>
<th>Current Annual Local Capital Development Expenditure (RWF Billion)</th>
<th>Low Growth Rate (current urban) Annual Capital Expenditure Requirements (RWF Billion)</th>
<th>High Growth Rate (35% urban by 2020) Annual Capital Expenditure Requirements (RWF Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nyagatare</td>
<td>Nyagatare</td>
<td>0.12</td>
<td>4.4</td>
<td>8.8</td>
</tr>
<tr>
<td>Rusizi</td>
<td>Rusizi</td>
<td>0.23</td>
<td>2.2</td>
<td>11.0</td>
</tr>
<tr>
<td>Rubavu</td>
<td>Rubavu</td>
<td>1.20</td>
<td>8.8</td>
<td>17.6</td>
</tr>
<tr>
<td>Gicumbe</td>
<td>Gicumbe</td>
<td>0.30</td>
<td>1.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Musanze</td>
<td>Musanze</td>
<td>0.50</td>
<td>5.5</td>
<td>17.6</td>
</tr>
<tr>
<td>Bugasera</td>
<td>Bugesera</td>
<td>0.20</td>
<td>2.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Huye</td>
<td>Huye</td>
<td>0.60</td>
<td>1.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Muhanga</td>
<td>Muhanga</td>
<td>0.60</td>
<td>2.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Rwamagana/Kayonza</td>
<td>Rwamagana/Kayonza</td>
<td>0.30</td>
<td>2.8</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Sources: Calculations based on district budget figures, unit costs of service provision based on the Rwanda Urban Development Project (RUDP) and Water and Sanitation Corporation (WASAC) sources.

Note: 10 percent per year allowance is factored in to cover progressive addressing of existing infrastructure backlog.

Given the small size of the secondary cities, access to external markets is essential to stimulate business development. Inter-city and cross-border connectivity are key to increasing the size of accessible markets for firms in secondary cities. This means connecting Kigali with external markets in the two large border cities of Goma and Bukavu in DRC, while the potential of forming more dynamic border areas with Uganda and Tanzania is as yet underdeveloped. Notably, Rusizi has potential as an emerging growth pole, with access to the cross-border market of Bukavu, but is currently poorly connected to Kigali. Improving the connective infrastructure between these two cities can also catalyze economic activity in Kigali by increasing demand in Bukavu for Kigali-produced goods. Rusizi has the highest density of non-agricultural jobs to residents. Improving regional connectivity requires not only investment in road infrastructure but also in border crossings to reinforce institutional arrangements, such as road financing and planning mechanisms.

By improving connectivity of cities to their extended rural surrounds, the government could facilitate poverty reduction. In Rwanda, according to the analysis of rural accessibility index, about 8.2 million people, about 72 percent of the total population, live in rural areas, of which about 4.3 million people are still unconnected to a road network in good condition. Areas with low rural accessibility also suffer from high poverty rates (Figure 12). The investment priority is in those areas where agricultural production exists but the road conditions remain poor. While rural access seems to be closely related to agricultural production, and Rwanda’s agricultural potential is considerable, there is unmet demand for access in the productive south-east of the country (i.e. the Southeast).

15 The rural accessibility index is one of the traditional global indicators in the transport sector. It measures the share of rural population who has access to an all-season road within an approximate two km walking distance.
Figure 12. Rural accessibility index and poverty rates are correlated in inaccessible areas

Source: Staff calculation based on 2012 Censuses
Note: Only geographic sectors located between 20 and 50 km from the cores of Muhanga, Rubavu, and Musanze are shown.

3.3. Promote targeted investments in cities with economic potential

Rwandan cities and towns can be seen as complementary with different functions and potentials, and, therefore, urban development strategies need to be reshaped to support the functions of different scale economies. While the Rubavu-Musanze corridor and Rusizi as a border town have demonstrated improving economic performance over the years, the remaining secondary cities currently do not have the potential to reach the required size and economic density necessary to serve as realistic growth poles. They will very likely continue as service and market centers for a rural economy in the short to medium term. This requires the government to reconsider its current urban development strategies. Public investment in infrastructure and services should be directed to where endogenous forces are driving growth, as this will tend to result in better returns on investment. Focusing investment initially on fewer cities which already have competitive advantage will deliver economic growth more efficiently.

The government can focus its investment in the emerging economic clusters such as the Rubavu-Musanze corridor, in the short-term. With a relatively dense population, productive agricultural land, and access to the large cross-border market of Goma, DRC, the Rubavu-Musanze corridor has a strong comparative advantage in key sectors such as tourism and agri-processing. It currently hosts Rwanda’s largest concentration of employment in manufacturing, wholesale and retail trade, and accommodation and food services, with the same level of employment as the other secondary cities combined. A significant number of larger firms are also located in this corridor. Given the existing comparative advantages, investment and implementation of action plans in the industrial zones should be implemented first in Rubavu and/or Musanze. Further efforts should be made to leverage the tourism sector to catalyze development in the Rubavu-Musanze corridor, in particular, by building links between the two cities and encouraging tourists to visit both as part of the same trip. This, in turn, will require investments in
improving infrastructure and services in these cities (i.e. roads, power, water supply and sanitation etc.), the spill-over effects of which can benefit local firms.

Investment in other cities should focus on improving basic services and strengthening the linkages with the surrounding rural areas. All secondary cities except Nyagatare have recently established, or are currently in the process of establishing, industrial parks. However, in view of the limited resources available for industrial park infrastructure development and service provision, and in view of the differences in success to attract investors to the parks, it would be prudent to redirect the strategy to focus on fewer parks located in strategically important cities. In other secondary cities, it is important to maximize the utility of existing infrastructure through adequate operations and maintenance and cost recovery (where relevant), and to ensure that resources for infrastructure and service improvement are appropriately directed to maximize the return for both social and economic development.

Finally, it is essential to further investigate the extent to which urbanization has contributed to, and will contribute to, economic growth and poverty reduction in Rwanda. To do so, several methodological challenges faced by this report need to be overcome. As already discussed, introducing a new urban definition is the first step. The Government of Rwanda has recently started to revise its urban definition for the next round of the Population and Housing Census, and the proposed definition in this report feeds into this ongoing work. Going forward, it is critical that the new definition will consider both global practices and particular local circumstances in order to better capture the level of urbanization, including distinguishing between functional and demographic definitions. Second, if government wants to better understand the role of migration as part of urbanization trends, within-district migration needs to be captured in new census and household surveys. Third, consumption-based poverty maps are useful to better analyze the linkage between urbanization and poverty. While Note 3 analyzes non-monetary poverty maps for the purpose, the inherent association between multidimensional poverty index (MPI) and urban definition (for example, MPI is calculated based on many factors that are tied with urban areas, such as housing materials) makes it difficult to determine the weights of the two factors without having consumption based poverty maps.
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