

RESHAPING URBANIZATION IN RWANDA

Economic and Spatial Trends and Proposals

Note 2: Internal Migration in Rwanda

Standard Disclaimer:

This volume is a product of the staff of the International Bank for Reconstruction and Development/ The World Bank. The findings, interpretations, and conclusions expressed in this paper do not necessarily reflect the views of the Executive Directors of The World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Copyright Statement:

The material in this publication is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The International Bank for Reconstruction and Development/ The World Bank encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly.

For permission to photocopy or reprint any part of this work, please send a request with complete information to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA, telephone 978-750-8400, fax 978-750-4470, <http://www.copyright.com/>.

All other queries on rights and licenses, including subsidiary rights, should be addressed to the Office of the Publisher, The World Bank, 1818 H Street NW, Washington, DC 20433, USA, fax 202-522-2422, e-mail pubrights@worldbank.org.

Cover photo: By Dr Antoine R. Gasasira (Own work) [CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0>)], via Wikimedia Commons

Table of Contents

Cover Note	iv
1. Introduction	1
2. Internal migration in Rwanda: Scale, patterns, and trends.....	3
3. Who migrates where and why?	12
4. Conclusions	18
References.....	19
Annex 1: Data and definitional limitations to the study of internal migration.....	20
Annex 2: Urban destination of recent migrants, by origin district	21
Annex 3: Estimating the drivers of migration	23

Box

Box 1. From advocating restrictions to letting them move.....	2
---	---

Figures

Figure 1. Share of internal migration, by type and time period.....	4
Figure 2. Internal migrants as a share of sector population	6
Figure 3: Number of recent migrants into secondary cities, 2007-2012	11
Figure 4: Probability of migrating from rural to rural or urban areas, based on education level.....	13
Figure 5: Share of the difference in consumption between Kigali and the other provinces, explained by differences in education	14
Figure 6. Sector of residence of migrants after leaving Kigali City.....	16

Tables

Table 1. Internal migrants as share of the population, by period of arrival in current location	3
Table 2. Internal migrants as share of district population	5
Table 3. Share of recent migrants, by district of origin	7
Table 4. Net migration rates by district, 2002-2012.....	8
Table 5. Destination of migrants moving out of urban areas.....	9
Table 6. District of origin, by current urban location for recent migrants	10
Table 7. Migration motivation, by migration pattern.....	13
Table 8. Characteristics of recent migrants, by current urban location (2012).....	17
Table 9. Share of migrants going to Kigali and to secondary cities, by origin district (2012).....	21
Table 10. Migration motivations, by current location and gender (2011-2014).....	22
Table 11. Migration motivations, by current location and gender (2011-2014).....	22
Table 12. Drivers of rural migration	23
Table 13. Drivers of urban migration	24

Cover Note

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 2 examines internal migration in Rwanda, which is a recent phenomenon and remains fairly limited, with less than 10 percent of the population changing their district of residence in the three years between 2011 and 2014. Rural-to-rural migration is the dominant form of migration, followed by urban-to-rural flows. Rural-to-urban migration has increased slightly as a share of internal migration, and with internal migration increasing overall, the absolute number of people moving from rural to urban areas has grown. Kigali City and the Eastern Province are the main magnets, exposing a dual pattern of migration: a move towards greater density, as relatively highly-educated rural dwellers were likely to move to the capital; and a parallel move away from density, as rural dwellers from high density districts and poorly educated urban dwellers were most likely to move to the sparsely populated Eastern province in search of land. At the same time, the rural fringes of Kigali have densified rapidly, also driven by a dual force. On the one hand, the high cost of living and lodging in Kigali has pushed previously urban residents, mainly the less educated, to the fringes of the city where land is cheaper. On the other hand, rural dwellers have moved closer to Kigali in search for economic opportunities offered by the capital. While Kigali experienced substantial net in-migration in recent years, secondary cities have experienced net out-migration. There is however considerable heterogeneity: Nyagatare town, Rubavu town, and the Kayonza/Rwamagana agglomeration also appear to attract many migrants.

1. Introduction

In many developing countries, disparities in living standards between lagging and leading areas, or between rural and urban areas, are large¹. In Rwanda too, these disparities remain substantial: in 2014, poverty rates in the poorest district were four times higher than poverty in the most economically dynamic district;² poverty in rural areas was twice the rate in urban areas. As set out in Note 1 these disparities in living standards largely correspond with disparities in economic density, tending to be higher in the places with high economic density (mainly Kigali), and lower in places far away from it (mainly the southwest of the country).

The spatial disparities in living standards offer a compelling motivation for people in lagging areas to move closer to economic density. Reducing “economic distance” (the distance between areas where economic activity is concentrated and areas that lag) is key for economic growth and poverty reduction in the lagging areas. The most straightforward way to reduce economic distance is for people to move closer to economic density. Unfortunately, many governments still see labor mobility and rural-urban migration as undesirable and try to restrict internal movement of people, typically out of fears of urban unemployment, overburdened city infrastructure, or a casual attribution of rising urban crime to rural migrants. By attempting to stem internal migration, governments impose the cost of forgone opportunities for economic growth and convergence in living standards (Box 1).

This Note takes a closer look at the scale and nature of internal migration in Rwanda. Complementing the Census thematic report on migration (NISR, 2014), data from the 2002 and 2012 Population and Housing Census (PHC) and the fourth Integrated Household Living Conditions Survey (EICV4) are used to examine the overall migration flows, push and pull factors, and characteristics of migrants, disaggregating by migration type, with a focus on Kigali and the secondary cities. At the outset, it is worth mentioning that there are some data limitation and definitional issues that complicate the study of internal migration in Rwanda. These issues and limitations are presented in Annex 1.

This Note proceeds as follows: Section 2 presents the scale and pattern of internal migration, focusing particularly on rural-to-urban migration and the secondary cities. This section also identifies the main receiving and sending areas and calculates net migration rates, identifying which areas and cities have net inflows of migrants and which have net outflows. Section 3 sketches the characteristics of migrants, focusing on push and pull factors and disaggregating by type of migration. The final section concludes.

¹ Leading areas are the most advanced on social and economic poverty, while lagging areas are the least advanced.

² Nyamasheke is the lagging district and Kicukiro the leading district, based on EICV4.

Box 1. From advocating restrictions to letting them move

Economic theory now recognizes that governments should not try to hold on to people

Many governments around the world actively attempt to discourage internal population movements from rural to urban areas. In a 2013 UN survey on Population and Development, 148 out of the 185 surveyed countries with data (80 percent) had government policies aimed at reducing internal migration from rural to urban areas. Such efforts are particularly prevalent among countries in Africa, where 85 percent of countries have policies aimed at reducing rural-to-urban migration. Only five countries in the world had policies aimed at speeding up migration to urban areas: China, Sri Lanka, Poland, Tajikistan, and the Maldives.³

Governments' efforts to control rural-urban migration have their roots in the early influential literature on the links between rural-urban migration and urban unemployment. In the well-known Harris-Todaro model (1970), differences in expected incomes between rural and urban sectors attract migrants from rural areas. Wages in the modern urban sector are fixed and exogenous, and jobs are rationed. Only a small fraction of rural migrants find employment in the modern urban sector, with the others unemployed or underemployed in an urban informal sector. Job creation programs in urban areas raise the expected urban income, stimulating further rural-urban migration and, if the labor demand elasticity in urban areas is large enough, increase the level of urban unemployment. This implication of the model was particularly important for policy because it argued against making cities attractive and implicitly endorsed measures to discourage or reverse migration (Commission on Growth and Development, 2009).

Though the Harris-Todaro model has been and remains influential, evidence supporting the predicted link between migration and urban unemployment is weak. Many of the critical assumptions and predictions of the model have not been supported by subsequent empirical studies of labor markets in developing countries. More robust and more plausible alternative models of migration have since emerged, with very different policy implications.⁴ In particular, increasing returns to scale in the modern sector (vs. constant returns in agriculture) and spillovers from clustering imply that movement from lagging to leading places could have substantial growth and welfare payoffs. In addition, on average, migration brings sizable economic benefits to the migrant in terms of increased consumption levels.⁵ Also, migrants who move to cities tend to maintain strong links with their home communities, sending back remittances that boost consumption and investment in origin communities and help to converge living standards across space.

As argued by the World Development Report on Reshaping Economic Geography, the policy challenge is not to keep people from moving, but how to keep them from moving for the wrong reasons. Agglomeration forces and economic opportunities will inevitably pull workers and families to cities, and the goal for policy is how to best accommodate these flows. To avoid migration for the wrong reasons, governments should work to eliminate or alleviate the factors that push people out of their origin areas, such as agricultural decline, due to pressures of population growth or environmental degradation, and lack of adequate public services. Migration due to push factors is unlikely to add to agglomeration benefits but likely to exacerbate the urban congestion that policy-makers strive so hard to avoid.

³ World Population Policies Database (http://esa.un.org/poppolicy/about_policy_section.aspx).

⁴ See Lall, Selod and Shalizi (2006); Commission on Growth and Development (2009).

⁵ See, for instance, Beegle, De Weerd, and Dercon (2011) for Tanzania.

2. Internal migration in Rwanda: Scale, patterns, and trends

Though still fairly limited, internal migration has increased since 2005. Kigali City, its rural fringes in bordering districts, and the relatively sparsely populated Eastern Province have been the main recipients of migrants, while the poor and densely populated provinces of the north, south and west have been their primary starting points. Though the secondary cities also experienced in-migration, data suggest that out-migration was higher, resulting in negative net migration rates for the secondary cities overall. Secondary cities mainly draw in migrants from their surrounding areas, while Kigali attracts migrants from all over the country. Overall, the areas with the highest in-migration are also the areas with the greatest increases in built-up area and in estimated district-level GDP (see Note 1).

Internal migration in Rwanda is a relatively recent phenomenon. Population movements were limited before 1990, but picked up in the 1990-2000 period, mainly due to increased rural-to-urban migration in the aftermath of the war and the 1994 genocide which led many people to leave rural areas (NISR, 2014). Migration decreased in the 2000-2005 period as the post-conflict security situation stabilized (Table 1). Since 2005, there has been an increase in what had been fairly low-levels of internal migration, both in rural and urban areas. In 2014 (the EICV4), about 7 percent of rural dwellers and 23 percent of urban dwellers were recent internal migrants, meaning they had settled in their current place of residence in 2011 or later. In contrast to the above-average migration in 1990-2000, migration in the recent period is believed primarily to be the result of economic growth, rising education levels, and improvements in physical transport infrastructure, combined with increased population pressure on arable land (NISR, 2014).

Table 1. Internal migrants as share of the population, by period of arrival in current location

Current area/city of residence	Period of arrival in current location					All periods (lifetime migrants)
	Before 1990	1990-2000	2000-2005	2005-2011	2011-2014	
Whole country	0.02	0.05	0.04	0.05	0.09	0.24
Rural areas	0.02	0.04	0.03	0.04	0.07	0.20
Urban areas (Kigali urban and secondary cities)	0.02	0.08	0.07	0.10	0.23	0.49
Kigali urban	0.02	0.09	0.08	0.11	0.27	0.57
All secondary cities	0.01	0.04	0.05	0.08	0.14	0.33
Huye (Southern Province)	0.01	0.08	0.05	0.10	0.19	0.43
Muhanga (Southern Province)	0.01	0.05	0.07	0.06	0.39	0.58
Musanze (Northern Province)	0.01	0.03	0.05	0.09	0.12	0.29
Nyagatare (Eastern Province)	0.03	0.09	0.12	0.11	0.20	0.56
Rusizi (Western Province)	0.02	0.04	0.05	0.05	0.07	0.23
Rubavu (Western Province)	0.01	0.03	0.05	0.07	0.10	0.26

Source: EICV4, 2014. World Bank Staff calculations.

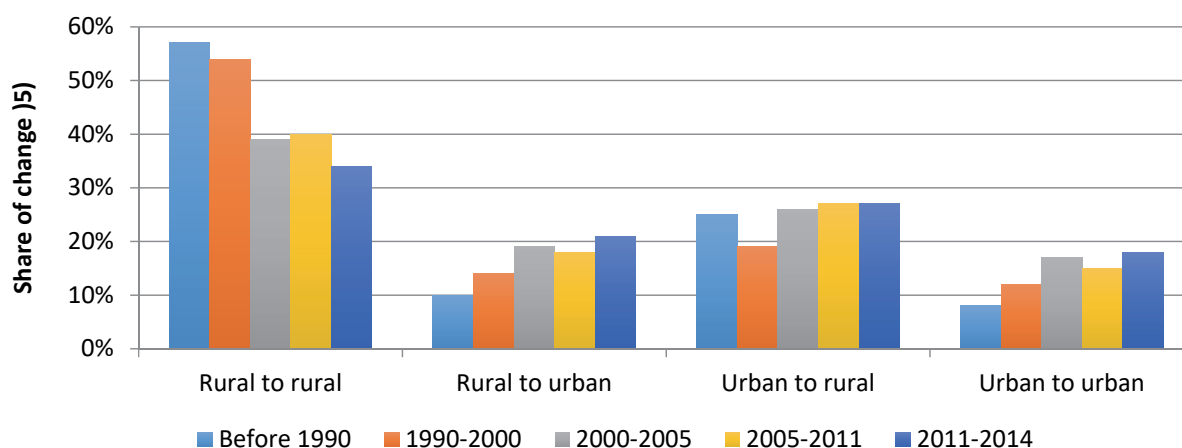
Overall, migrants constitute a larger share of the population in urban than in rural areas. About 27 percent of the population of Kigali were recent migrants in 2014, compared to 7 percent in rural areas. This however does not mean that all migrants in Kigali came from rural areas; about 35 percent migrated from another district within the capital city. Recent migrants make up 14 percent of the population of the secondary cities. Rubavu and Rusizi, in the Western Province, have the smallest share of recent migrants, while Muhanga and Nyagatare, in the Southern and Eastern Provinces, respectively, have the largest share

(Table 1). Secondary cities tended to draw in migrants from their surrounding areas within the same Province (see below).

In contrast to popular belief, rural-to-urban migration is among the least common types of migration.

Of all internal population movements between 2011 and 2014, 20 percent went from rural to urban areas, only slightly higher than the share in 2000-2005 (Figure 1).⁶ Intra-rural migration remained the dominant form of internal population movements in 2011-14 (34 percent), but had nevertheless decreased from 54 percent in 1990-2000. Urban-to-rural migration is the second most common type of migration, accounting for 27 percent of all internal population movements.⁷ Urban-to-urban migration increased slightly since the 1990s. Overall, rural areas were the destination for 61 percent of internal migrants since 2011.

Figure 1. Share of internal migration, by type and time period



Source: EICV, 2014.

The Districts of Kigali and the Eastern Province were the main destinations for recent internal migration.

Nearly one third (29%) of recent migrants headed to Kigali, with the districts of Gasabo and Kicukiro being especially popular destinations (Table 2). Another 33 percent of migrants headed to the Eastern Province, mainly to the districts of Nyagatare, Gatsibo, Kayanza, and Rwamagana. The Western, Southern, and especially the Northern Province attracted relatively few migrants (Figure 2). The figures presented in Table 2. suggest a dual migration pattern in Rwanda: a move towards density, with the districts of Kigali city attracting many migrants, and a parallel move away from density, with a high share of migrants flocking to the Eastern Province - the least densely populated province in Rwanda.

Another migration dynamic that is less obvious from the district statistics is the move towards the fringes of the capital province. Recent internal migrants make up 13 percent of the population in sectors that border Kigali City Province, compared to 8 percent of the overall population (in the 2012 census).⁸

⁶ As both internal migration and population have increased since the early 2000s, a higher absolute number of people now come to urban areas than before.

⁷ Note that definitional issues can bias the picture here: A move from Kigali City to the fringes would show up as urban-to-rural migration, even though the person would still depend on the city for his/her livelihood.

⁸ Sectors that border Kigali City are Runda, Rugarika, and Mugina in Kamonyi District, Ntarama, Mwogo and Juru in Bugesera District, Myumbu, Gahengeri, Nyakaliro and Fumbwe in Rwamagana District, and Shyorongi, Ngoma, Murambi, Masoro and Ntarabana in Rulindo District. Though Gicumbi District also borders Kigali Province, it only borders the rural areas of Gasabo and is therefore not included as bordering Kigali City.

Population in the sectors bordering Kigali increased by 40 percent between 2002 and 2012, compared to a 30 percent overall population growth. The move towards the fringes of the capital reflects a move towards density as well as a push out of the city: of all the recent migrants in the bordering sectors, 43 percent came from Kigali City itself. Though the official surveys and censuses offer no information on this, anecdotal evidence points towards the role of high cost of living in the city (and less expensive land on its fringes), pushing relatively lower-income city dwellers to the primarily rural fringes.⁹ The next-highest share of recent migrants in the bordering sectors came from Muhanga District in the Southern Province (8 percent) and Ngororero District in the Western Province (7 percent). For these migrants, the move from rural areas towards to fringes of the capital reflects a desire to be closer to economic density and opportunities.

Table 2. Internal migrants as share of district population

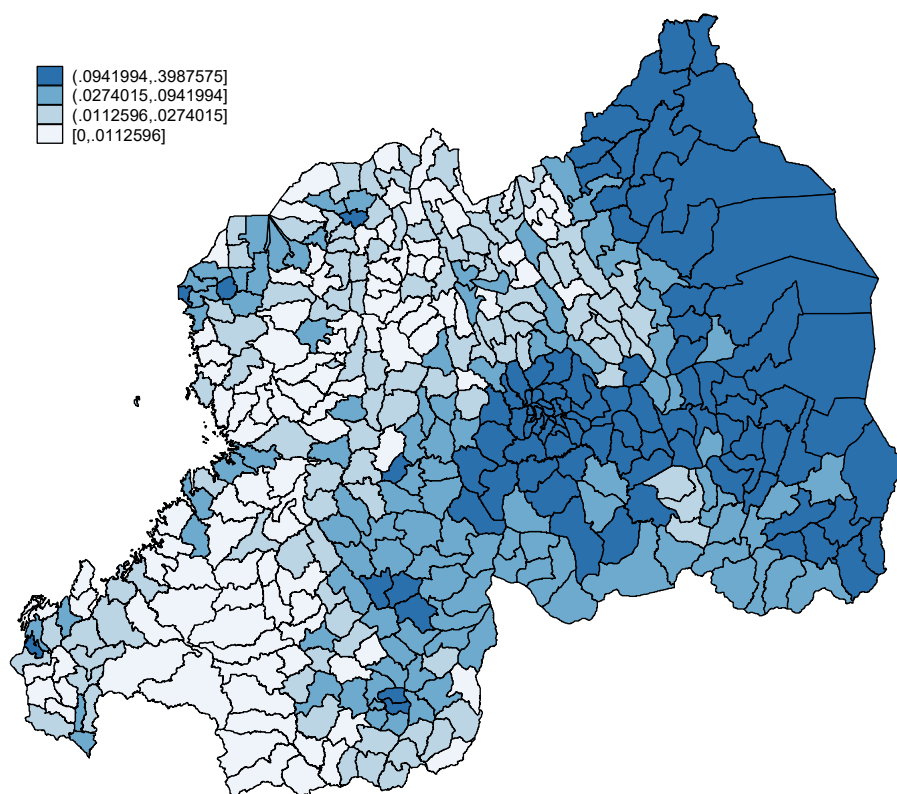
Province of destination	Current district	Period of arrival in current location	
		2005-2011	2011-2014
Kigali Province	Nyarugenge	0.05	0.06
	Gasabo	0.12	0.14
	Kicukiro	0.07	0.09
Southern Province	Nyanza	0.03	0.04
	Gisagara	0.01	0.01
	Nyaruguru	0.01	0.01
	Huye	0.03	0.03
	Nyamagabe	0.01	0.01
	Ruhango	0.03	0.03
	Muhanga	0.02	0.03
	Kamonyi	0.04	0.04
Western Province	Karongi	0.02	0.02
	Rutsiro	0.01	0.02
	Rubavu	0.04	0.02
	Nyabihu	0.01	0.01
	Ngororero	0.01	0.01
	Rusizi	0.02	0.02
	Nyamasheke	0.01	0.01
Northern Province	Rulindo	0.01	0.02
	Gkenke	0.01	0.01
	Musanze	0.03	0.02
	Burera	0.01	0.01
	Gicumbi	0.01	0.02
Eastern Province	Rwamagana	0.07	0.05
	Nyagatare	0.09	0.09
	Gatsibo	0.06	0.05
	Kayonza	0.05	0.05
	Kirehe	0.05	0.03
	Ngoma	0.03	0.02
	Bugesera	0.04	0.04

Source: EICV4, 2014. World Bank Staff calculations

⁹ This may account, in part, for the high and increasing rates of urban-to-rural migration documented in Figure 1.

Overall, internal migration has mainly targeted the east, Kigali and its fringes, and the main road corridors in Rwamagana and Bugesera. A fair share of migration has also headed towards secondary urban centers, mainly Huye, Musanze, and Rubavu. The pattern presented in Figure 2 largely corresponds to the change in built-up area presented in Note 1. Areas with the largest increase in built-up area are also those with the highest share of recent migrants and the ones with the largest increase in GDP as proxied by nightlights.

Figure 2. Internal migrants as a share of sector population



Source: PHC, 2012

In addition to being the main destination of internal migrants, Kigali City districts also are main origin of migrants moving elsewhere. Of all recent migrants in the country, 27 percent came from one of the Districts in Kigali (Table 3). Other common origin districts of internal migrants include Gakenke in the Northern Province, Rubavu in the west, and Bugesera in the east. The Southern Province, the poorest province in Rwanda, is the origin of 22 percent of recent internal migrants.

All districts in Rwanda have been both the origin and recipient of migrants in the years preceding the EICV4, if to varying extent. To see whether districts had an average net inflow or outflow of people, net migration rates were calculated based on the 2002 and 2012 Rwanda Population and Housing Census (PHC). The net migration rate is calculated as the difference between the number of people entering and leaving the district per 1,000 individuals in the given period. A positive number indicates more immigration than emigration in the district in the given period (2002-2012), whereas a negative number indicates more people leaving the district than coming into it.

Table 3. Share of recent migrants, by district of origin

Province of origin	District of origin	Period of arrival in current location	
		2005-2011	2011-2014
Kigali Province	Nyarugenge	0.09	0.08
	Gasabo	0.11	0.11
	Kicukiro	0.07	0.08
Southern Province	Nyanza	0.03	0.03
	Gisagara	0.02	0.02
	Nyaruguru	0.02	0.02
	Huye	0.02	0.03
	Nyamagabe	0.02	0.03
	Ruhango	0.02	0.03
	Muhanga	0.03	0.03
	Kamonyi	0.02	0.03
Western Province	Karongi	0.03	0.02
	Rutsiro	0.02	0.01
	Rubavu	0.03	0.04
	Nyabihu	0.04	0.03
	Ngororero	0.04	0.02
	Rusizi	0.04	0.03
	Nyamasheke	0.05	0.03
Northern Province	Rulindo	0.02	0.02
	Gkenke	0.05	0.04
	Musanze	0.02	0.02
	Burera	0.04	0.02
	Gicumbi	0.03	0.02
Eastern Province	Rwamagana	0.03	0.03
	Nyagatare	0.02	0.03
	Gatsibo	0.03	0.03
	Kayonza	0.02	0.03
	Kirehe	0.02	0.02
	Ngoma	0.02	0.02
	Bugesera	0.03	0.04

Source: EICV4, 2014; World Bank Staff calculations

Overall, the Kigali districts and the Eastern Province experienced substantial net population inflow, while districts in other provinces had net outflow. At the provincial level, Kigali had the highest net inflows (for every 1,000 residents of Kigali, 170 were new inhabitants—migrants), while at the district level, Nyagatare had the highest net inflow (Table 4). There is substantial variation within provinces. In Kigali, Kicukiro and Gasabo, which still included significant peri-urban and rural areas with less expensive land, had more inflow, while Nyarugenge had less. In the Eastern province, Bugesera and Ngoma districts had small inflow, while other districts had far greater inflow. While the Southern Province experienced net outflow between 2002 and 2012, Kamonyi district nevertheless had positive net migration, presumably due to its proximity to Kigali. Similarly, Rubavu is the only district in the Western Province with a net population inflow. The Northern Province, which is the most densely populated province, experienced the largest net outflow: for every 1,000 residents, 109 left.

Table 4. Net migration rates by district, 2002-2012

Province of origin	District of origin	Number of internal migrants arriving (in 1,000)	Number of internal migrants departing (in 1,000)	Estimated mid-period population (in 1,000)	Net migration rate between 2002 and 2012 ¹
Kigali Province	Nyarugenge	79	71	261	32.27
	Gasabo	169	79	426	212.09
	Kicukiro	120	57	264	239.71
	Total	368	206	950	170.39
Southern Province	Nyanza	29	29	274	1.35
	Gisagara	10	26	292	-53.99
	Nyaruguru	5	31	262	-102.30
	Huye	27	33	297	-22.93
	Nyamagabe	6	35	311	-93.36
	Ruhango	28	33	284	-15.60
	Muhanga	18	54	303	-118.78
	Kamonyi	35	34	302	6.32
Total	158	275	2,326	-50.14	
Western Province	Karongi	9	34	305	-81.41
	Rutsiro	4	22	294	-63.03
	Rubavu	32	19	348	35.56
	Nyabihu	9	40	282	-108.45
	Ngororero	6	42	308	-116.82
	Rusizi	13	27	368	-37.82
	Nyamasheke	5	42	354	-104.24
Total	78	226	2,260	-65.67	
Northern Province	Rulindo	10	44	270	-124.92
	Gakenke	5	67	330	-187.85
	Musanze	20	31	338	-33.48
	Burera	5	43	329	-115.09
	Gicumbi	10	44	379	-91.08
	Total	50	230	1,645	-109.05
Eastern Province	Rwamagana	54	32	265	83.58
	Nyagatare	141	14	361	350.00
	Gatsibo	66	29	359	104.90
	Kayonza	68	19	278	178.12
	Kirehe	54	22	285	114.05
	Ngoma	31	19	287	42.11
	Bugesera	40	38	315	6.92
Total	455	172	2,150	131.38	

Source: PHC, 2002; 2012.

Note: Weighted frequencies¹. Calculated as [(Immigration-Emigration)/Mid-year population estimate]*1,000.

The population movements suggest a dual migration pattern, marked by a move towards density and a parallel move away from it. Net population flows to the leading province, in terms of economic and population density (Kigali), likely reflect a desire to be closer to better employment opportunities offered by the core urban center. Population flows to the Eastern Province amount to a move away from density. While all other rural provinces have a high population density and, as a result, small average landholdings, the East has a low population density and relatively high landholdings.¹⁰ In addition, the GoR's 2008 land redistribution made available large swathes of land in the Eastern Province, drawing migrants from other provinces (NISR, 2014).

The six secondary cities are both recipients and origins of migrants. On the receiving end, the secondary cities mainly attracted migrants from within their respective provinces and from Kigali City. For instance, of all recent migrants in Huye town, 60 percent came from other places within the Southern Province and 12 percent from Kigali (Table 6). Musanze and Muhanga towns experienced considerable inflows from Kigali, next to inflows coming from rural areas in the same District. There seem to be little migration between the secondary cities. None of the recent migrants in Rubavu town came from Rusizi District, and only one percent of the recent migrants in Huye town came from Muhanga District.

People leaving the districts of secondary cities overwhelmingly moved to rural areas. Nearly 70 percent of people leaving the secondary city districts went to rural areas, 26 percent moved to Kigali, and a mere five percent moved to other secondary cities (Table 5). Though people leaving Rusizi and Muhanga districts were also most likely to go to rural areas, a relatively higher share of them went to Kigali (44 percent and 32 percent, respectively). People moving out of the capital were also most likely to settle in rural areas (60 percent), followed by other districts within the capital (36 percent). Migration from Kigali to the secondary cities was limited (four percent in the most recent period).

Table 5. Destination of migrants moving out of urban areas

Origin city of residence	Rural areas		Kigali city		Secondary cities	
	2005-2011	2011-2014	2005-2011	2011-2014	2005-2011	2011-2014
Kigali city	0.65	0.60	0.31	0.36	0.03	0.04
All secondary city districts	0.72	0.69	0.24	0.26	0.04	0.05
Huye (Southern Province)	0.65	0.70	0.30	0.24	0.04	0.06
Muhanga (Southern Province)	0.80	0.65	0.18	0.32	0.02	0.03
Musanze (Northern Province)	0.81	0.75	0.04	0.15	0.15	0.10
Nyagatare (Eastern Province)	0.81	0.76	0.19	0.19	-	0.05
Rusizi (Western Province)	0.66	0.51	0.34	0.44	0.01	0.05
Rubavu (Western Province)	0.64	0.76	0.33	0.18	0.03	0.05

Source: EICV4, 2014. World Bank Staff calculations

¹⁰ The Eastern Province had a population density of 180 people per squared kilometer in 2002, compared to 476 for the Northern Province, 345 for the Southern province, and 347 for the Western Province.

Table 6. District of origin, by current urban location for recent migrants

Province of origin	District of origin	Kigali	All secondary city districts	Huye (Southern Province)	Muhanga (Southern Province)	Musanze (Northern Province)	Nyagatare (Eastern Province)	Rusizi (Western Province)	Rubavu (Western Province)
Kigali Province	Nyarugenge	0.10	0.05	0.05	0.10	0.03	-	0.07	0.03
	Gasabo	0.13	0.08	0.05	0.10	0.16	0.03	0.04	0.08
	Kicukiro	0.12	0.02	0.02	0.02	0.02	-	0.08	0.02
Southern Province	Nyanza	0.05	0.02	-	0.09	-	0.03	-	-
	Gisagara	0.01	0.08	0.32	-	-	0.20	-	0.01
	Nyaruguru	0.02	0.03	0.11	0.01	-	0.05	-	-
	Huye	0.02	0.02	-	0.08	0.01	-	-	0.01
	Nyamagabe	0.02	0.04	0.12	0.02	-	-	0.02	0.05
	Ruhango	0.04	0.03	0.04	0.04	0.01	-	0.04	0.02
	Muhanga	0.04	0.01	0.01	-	0.03	-	-	0.02
	Kamonyi	0.04	0.05	-	0.20	-	0.04	-	0.01
Western Province	Karongi	0.03	0.03	-	0.04	-	-	-	0.10
	Rutsiro	0.01	0.05	-	-	0.04	-	-	0.17
	Rubavu	0.03	0.03	0.05	-	0.06	-	0.10	-
	Nyabihu	-	0.05	-	-	0.10	-	-	0.12
	Ngororero	0.02	0.05	0.01	0.11	0.05	-	-	0.06
	Rusizi	0.04	0.02	0.01	0.03	0.03	0.05	-	-
	Nyamasheke	0.05	0.08	0.02	0.03	-	-	0.56	0.11
Northern Province	Rulindo	0.01	0.01	-	-	0.01	-	-	0.02
	Gakenke	0.01	0.03	-	-	0.17	-	-	-
	Musanze	0.01	0.02	0.04	-	0.01	-	-	0.05
	Burera	-	0.03	-	-	0.16	-	-	0.01
	Gicumbi	0.02	0.01	-	0.02	-	0.04	-	-
Eastern Province	Rwamagana	0.04	0.02	0.04	0.01	-	0.10	-	-
	Nyagatare	0.02	0.02	0.01	0.02	0.03	-	-	0.02
	Gatsibo	0.02	0.02	-	-	0.04	0.18	-	-
	Kayonza	0.04	0.01	-	0.02	-	0.05	-	0.01
	Kirehe	0.01	0.02	-	0.01	0.03	0.18	-	-
	Ngoma	0.02	-	-	-	0.01	-	-	-
	Bugesera	0.02	0.05	0.09	0.04	0.01	0.05	0.09	0.06

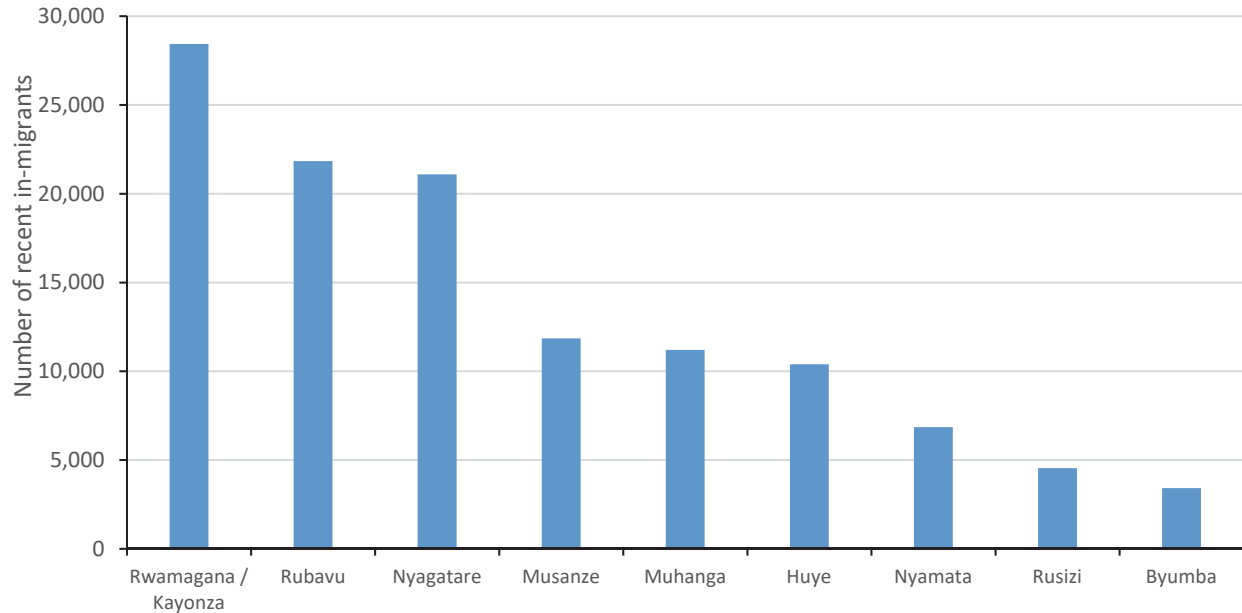
Source: EICV4, 2014; World Bank staff calculations.

Due to data limitations, net migrations rates for secondary cities cannot be calculated.¹¹ However, a sense of population flows to and from the secondary cities can be gained by exploiting the migration module in the EICV4 data. Overall, the data suggest that the six secondary cities experienced net outmigration in the three years preceding EICV4 (of 109,000 people). Due to the small sample size, the data cannot be disaggregated by secondary city. However, looking at the districts in which the secondary cities are located (Table 4), only Nyagatare and Rubavu districts had positive net migration rates, indicating that more people came than left the district between 2002 and 2012. This is in line with migration to the secondary cities as calculated from the 2012 PHC: Of the designated secondary cities, Rubavu and Nyagatare towns experienced the highest in-migration between 2007 and 2012 (about 22,000 migrants—see Figure 3).¹² Of all secondary urban agglomerations in Rwanda, the highest in-migration was however experienced by the rapidly growing urban agglomeration of Kayonza-Rwamagana (the sectors of Kigabiro and Mukarange).

¹¹ For people who migrated to their current place of residence, the PHC only asked for the district they lived in before migrating to their current district. With only information on the district level, we cannot compute migration out of the secondary cities (the secondary cities are defined at the sector-level—see Note 1) and, hence, net migration rates.

¹² This is in-migration, not net migration (in-migration minus out-migration).

Figure 3: Number of recent migrants into secondary cities, 2007-2012



Source: PHC, 2012.¹³

Overall, internal migrants in Rwanda are far more likely to move to the capital than to move to a nearby secondary city. Annex 2 Table 9 uses census data to calculate, by district of origin, the share of migrants moving to Kigali versus the share moving to any of the secondary cities (the remaining share is the share going to rural areas or other urban centers). For 27 of the 30 districts, the share of migrants leaving the district to go to Kigali is higher, and often far higher, than the share going to a secondary city. This is even the case for origin districts that are located adjacent to a secondary city, such as Nyamagabe and Ruhango in the Southern Province (close to the secondary cities of Huye and Muhanga) or Nyamasheke in the Western Province (bordering Rusizi town). The exception is the secondary city of Rubavu, which draws in the bulk of migrants coming from the neighboring districts of Rutsiro and Nyabihu. This confirms the status of Rubavu as the only urban center next to Kigali with significant appeal.

¹³ Secondary towns defined in terms of sectors according to the classification in Note 1.

3. Who migrates where and why?

Employment and density—or their absence -- are the primary push and pull factor for migration in Rwanda. Rural-to-urban migration is fueled by skills, with higher-educated rural dwellers seeking better opportunities and higher returns to education in more-densely populated urban areas. The lack of land is another important push factor driving rural migration to the cities, as well as better access to public services and infrastructure. The opposite is also true, with the lack of skills and education, the high cost of living in the city, and, in secondary cities, the lack of access to public services, all pushing people to move from urban to rural areas. Young and relatively less-educated urbanites have tended to leave the city to live in its rural fringes, while still remaining close to density and opportunity. Rural-to-rural migration is fueled by higher population density in the origin district, with less-educated migrants moving to other low-density rural districts where they hope to farm, primarily in the Eastern Province.

People migrate in response to both “push” and “pull” factors. Push factors refer to conditions that push people out of their original place of residence, such as land scarcity or lack of public services in rural areas, or the high cost of living in urban areas. Pull factors refer to the availability of better opportunities elsewhere, mainly related to employment. This section examines the main push and pull factors for the different migration patterns (rural-to-urban, urban-to-rural, rural-to-rural, and urban-to-urban), based both on self-reported motivations and on analysis of the GoR’s Integrated Household Living Conditions survey (EICV4) and the Population and Housing Census (PHC).

For rural dwellers who migrated in the three years preceding the EICV4, employment was the main reason for the move. This was particularly the case for those who migrated to urban areas, of whom 60 percent cited employment as the main reason to move (Table 7). Employment was also the most frequently cited reason for those who moved within rural areas (“rural-to-rural” in Table 7), though lack of land was also a main motivation for this type of migration. “Other family reasons” is also a frequently mentioned reason to move, which mainly stems from women following their husband and children following their parents. Disaggregating by type of urban area (Kigali vs. secondary cities) and gender of migrant, employment is consistently the main motivation to migrate to urban areas for men, while for women employment and “other family reasons” are the main motivations (Annex 2, Table 10).

While employment opportunities elsewhere emerge as the main pull factor for rural migrants, lack of employment in the place of origin is the main push factor. Lack of land is another important push factor for rural migrants, while marriage and other family reasons are important push factors for female rural migrants (Annex 2, Table 11). Note that inadequate public services were not a response option in the questionnaire.

To examine the possible drivers of migration in more detail, we estimate a multinomial logistical regression. In the specification, the base category are rural dwellers who did not move districts in the three years preceding EICV4. The second category are people who migrated from one rural district to another, while the third category consists of people who migrated from rural to urban areas. The regression analysis is presented in Annex 3, Tables 12 and 13.

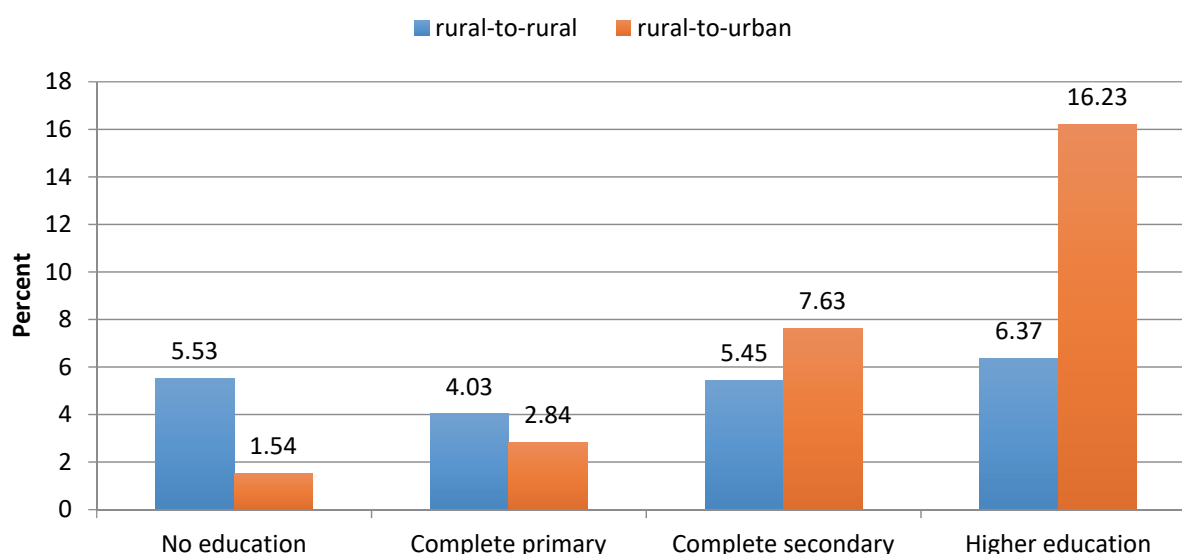
Table 7. Migration motivation, by migration pattern

Migration motivation	Rural to rural	Rural to urban	Urban to rural	Urban to urban
Employment/employment of spouse	0.32	0.60	0.39	0.49
Trade and business	-	0.01	0.01	-
Lack of land	0.13	0.01	0.06	-
Studies	0.03	0.08	0.02	0.06
Health	0.01	0.01	0.02	0.01
Marriage	0.11	0.08	0.07	0.08
Parents/HH moved	0.13	0.06	0.07	0.10
Other family reasons	0.23	0.14	0.28	0.21
Disasters or insecurity	0.01	-	-	-
Desire to return home	0.01	-	0.01	-
Other	0.02	-	0.03	0.01

Source: EICV4, only individuals aged >15; World Bank staff calculations.

Skills drive migration. Education is the main correlate of migration, with better educated people more likely to move. While better educated people are also more likely to move within rural areas, education is particularly important for rural-urban migration. All else being equal, rural dwellers with higher education had a 16 percent chance of migrating to urban areas, compared to less than two percent for people without education (Figure 4). Rural-to-rural migration is only marginally affected by skills. People with a higher education had a six percent chance of migrating within rural areas, only slightly higher than uneducated people. At low levels of education, people are more likely to migrate within rural areas. At higher levels of education, people are more likely to move out of rural areas.

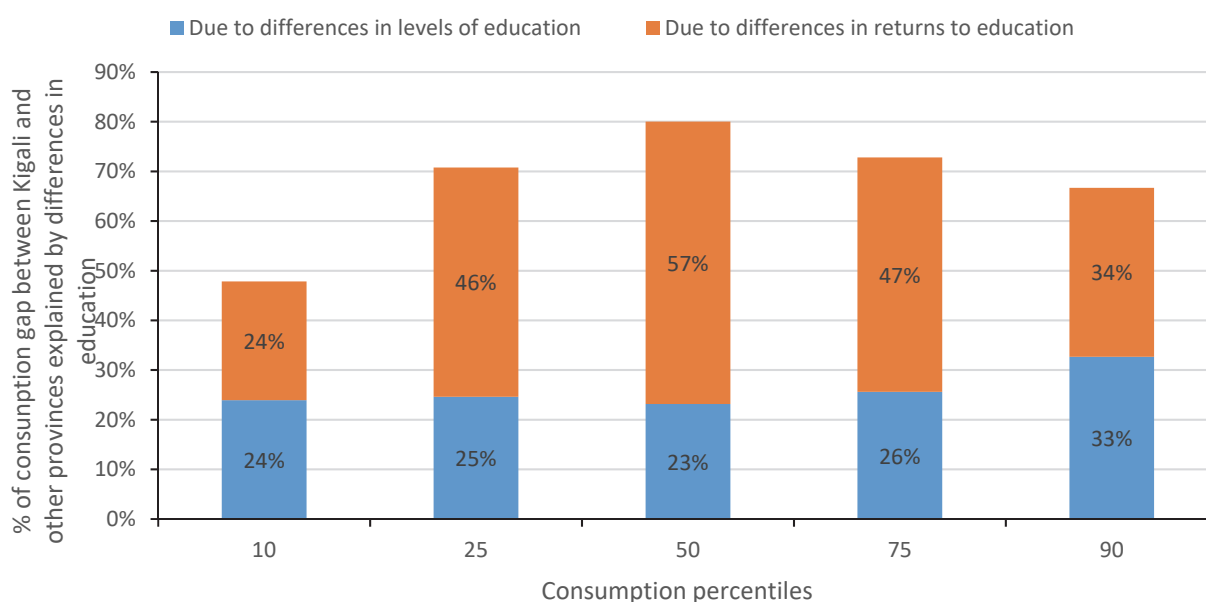
Figure 4: Probability of migrating from rural to rural or urban areas, based on education level



Source: EICV4, 2014.

Highly educated individuals' propensity to move to the city is linked, in part, to the higher returns to education in dense areas. Differences in education explain a large part of the difference in consumption between lagging and leading areas in Rwanda (with Kigali City being the leading area and all other provinces lagging ones).¹⁴ Differences in education explain 80 percent of the differences in median consumption between Kigali and other places (Figure 5). The effect of education stems not only from differences in education *levels* (people in Kigali tend to be better educated than people elsewhere), but above all from differences in the *returns* to education (for similar level of education, people in Kigali get a higher payoff in terms of consumption). For instance, 23 percent of the difference in median consumption between Kigali and other provinces is explained by differences in education *levels*, while 57 percent is explained by differences in *returns* to education (Figure 5). The higher returns to education in Kigali act as a powerful draw for higher educated individuals coming from rural areas.

Figure 5: Share of the difference in consumption between Kigali and the other provinces, explained by differences in education



Source: EICV3, 2011.

Next to education, population density also influences migration, depending on migration type. Rural inhabitants living in a district with higher population density (and hence more pressure on land) were more likely to migrate to other rural areas with lower population density, likely reflecting a search for land. Rural dwellers living in densely populated places were, however, less likely to move to urban areas. Though this effect is difficult to explain, it is possible that high levels of density in the origin location already give the location, albeit still rural, a peri-urban character, reducing the propensity to move to even denser urban areas.

Inadequate public infrastructure in certain places seems to be a push factor for rural-to-rural migration.

To proxy “baseline” access to public services and infrastructure, we calculated an isolation score for each household in the EICV3 survey (2011), based on a principal component analysis of the time it takes to

¹⁴ The analysis of the differences in returns to education is based on a decomposition of the difference in consumption between Kigali and other Provinces into a part explained by differences in covariates and a part by differences in returns to covariates (coefficients).

reach certain key public services.¹⁵ The household scores were then averaged on the district level to get a measure of isolation from public infrastructure and services in the district. Relative to rural dwellers who did not move between 2011 and 2014, people who moved to another rural area tended to come from districts with significantly higher isolation scores and, hence, significantly worse access to public infrastructure and services.

Finally, related to demographic characteristics, young people and women were more likely to migrate relative to older people and men. Women were especially more likely to migrate from rural to rural areas, probably for reasons of marriage. There is an important interaction effect between age and gender, with men being more likely to migrate as they grow older and women more likely to migrate while they are still young.

Overall, urban dwellers seem to migrate for similar reasons as rural dwellers. Among people who migrated from urban to rural areas, 39 percent mentioned employment as the main motivation to migrate, while 28 percent mentioned other family reasons (Table 7). However, as mentioned previously, the bulk of people who left Kigali City actually settled in rural areas of Kigali Province or in sectors just bordering the capital along the main roads (Figure 6).¹⁶ Although it is not possible to determine with the available data, it is unlikely that people who moved from the city to its rural fringes did so for employment reasons. Such a pattern of migration is more compatible with lower- and middle income urban dwellers escaping the high cost of living (housing) in the city while still remaining close enough to be able to commute for work. The fact that half of people who moved from Kigali City to the rural fringes still work in the non-farm sector gives some support to this argument.¹⁷

People who moved out of Kigali City to settle in districts further from the capital did so for employment reasons. For 80 percent of people who left the capital in the five years preceding the 2012 PHC, at the time of the census, farming was their main job, suggesting that these people left the capital to till the fields, mainly in the Eastern Province. Compared to migrants who left the capital to settle on its fringes, migrants who moved further away tended to be older and less educated.¹⁸ This points towards a dual pattern of migration out of Kigali City. On the one hand, relatively young, low-to-middle income city dwellers are pushed out of the capital due to high cost of living (including housing) and settle in its rural fringes, close enough to still benefit from the economic density of the city. On the other hand, relatively older and uneducated city dwellers, for whom the city does not offer sustainable employment opportunities, tended to move further out towards Kayonza, Gatsibo and Nyagatare in the Eastern Province, likely to farm.¹⁹

As with migration from rural areas, migration out of urban areas is driven by skills—but this time, by the lack of skills. Relative to urban dwellers that did not migrate, urban dwellers that moved to rural areas were less likely to have completed secondary education. To illustrate, urban dwellers with no education were twice as likely to move to rural areas compared to those who completed secondary education. Males were less likely to migrate out of urban areas, but the effect is mediated by age: as men get older, they become more likely to leave urban areas, all else being equal. Migration between urban areas mainly refers

¹⁵ The public services included are: drinking water, market, public transport, health center, primary school, secondary school.

¹⁶ Based on the 2012 PHC, over half of people who left Kigali City in the five years preceding the census settled in rural areas of Kigali Province or neighboring districts, mainly Rwamagana, Kamonyi and Bugesera.

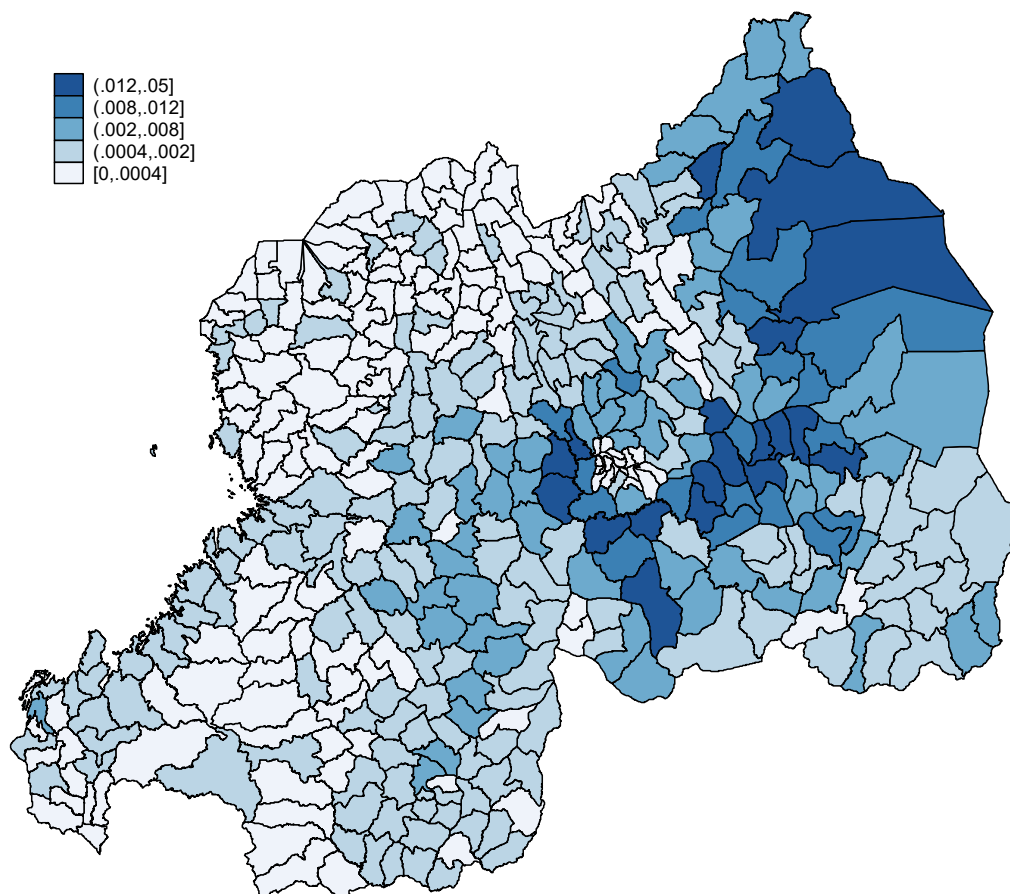
¹⁷ Based on EICV4, 2014.

¹⁸ 18 percent of migrants who moved further out of Kigali City did not have any education at all. For those who settled on Kigali's fringes, 11 percent had no education.

¹⁹ While this narrative is consistent with the data, it cannot be ascertained given the nature of the available data.

to mobility within Kigali (changing districts within the capital) and is the prerogative of the young and educated: Urbanites with higher education are four times more likely to move within urban areas than those who did not complete primary schooling.

Figure 6. Sector of residence of migrants after leaving Kigali City



Source: PHC, 2012.

To summarize, the four 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, with people without the education and skills to afford living in the city, but 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.

Younger and more educated people are more likely to migrate to urban areas. Another question is whether people who migrate to the capital have different characteristics from those who migrate to secondary cities and other urban centers. Using data from the 2012 PHC, we find that people who migrated to the capital were on average younger, more educated and more likely to be male compared to

those migrating to any of the six secondary cities. People who migrated to other urban centers (in our case: Nyamata, Byumba, and Rwamagana/Kayonza) have similar characteristics to those who migrated to secondary cities, although they tend to be somewhat older.

The difference in migrant characteristics between Kigali and the secondary cities is however entirely different from migrants to Nyagatare. With only four years of schooling on average, recent migrants to Nyagatare were substantially less educated than migrants to any of the other secondary cities (22 percent of people who moved to Nyagatare had no education at all—see Table 8). Migrants to Nyagatare were also substantially older than people who migrated to other centers, and were unlikely to work in the non-farm sector. More than three-quarters of recent migrants in Nyagatare town work in agriculture, confirming the different nature of Nyagatare. As opposed to the five other secondary cities, Nyagatare is still largely rural and attracts people in search for lands to farm rather than people in search of urban density and non-farm opportunities.

Table 8. Characteristics of recent migrants, by current urban location (2012)

<i>Individuals aged > 15</i>	Kigali	Huye	Muhanga	Musanze	Rusizi	Rubavu	Nyagatare	Rwamagana/		
								Kayonza	Nyamata	Byumba
Age (mean)	27.2	26.5	27.5	27.9	27.4	28.7	31.2	29.2	30.7	27.7
Gender (1 = male)	53.6	55.3	43.9	49.4	53.5	49.7	51.1	52.3	54.5	43.8
Years of schooling	7.4	7.6	8.1	8.9	7.1	6.9	4.3	6.6	6.45	9.3
No schooling (1 = yes)	5.4	8.8	6	6.5	8	13.2	22	10.9	10.9	3.4
Completed primary (1 = yes)	19.3	12.6	16.9	13.1	18	15.6	15.2	21.3	17.7	15.8
Completed secondary (1 = yes)	10	7	14.1	17.9	7.3	9.3	3.7	8.7	8.5	17.7
Higher education (1 = yes)	14	22.4	17.1	17.9	15.9	13.7	2.9	8.3	8.7	24.1
Non-farm wage employment (%)	70.1	64.5	55.4	58.7	54.3	45.5	12.8	44.4	41.3*	64.3*
Nonfarm self-employment (%)	21.9	11.4	22.4	26.4	23.3	30.3	9.9	19.8	14.4*	16.3*
N	21,142	854	797	857	327	1,567	1,393	895	413	203

Source: PHC, 2012; * based on less than 300 observations.

Except for Nyagatare, recent migrants in the different urban centers have fairly similar characteristics. Migrants in Muhanga, Musanze and Byumba are on average highly-educated, while Huye attracts many migrants with higher education degrees, presumably due to the presence of the national university. Recent migrants in Nyamata and Rwamagana/Kayonza, both rapidly growing urban centers, are somewhat less educated. Overall, recent migrants in Kigali do not differ substantially from recent migrants in other cities, with the exception of Nyagatare.

4. Conclusions

Internal migration in Rwanda is a recent phenomenon and is dominated by intra-rural population flows and urban-to-rural migration. Rural-to-urban migration as a share of total migration has increased in recent years, and the numbers of rural dwellers coming to the cities have increased in absolute terms, as both internal migration and population have increased. To some extent, rural-to-rural migration has also reflected a move to the city, as the rural fringes of the capital, especially the areas along main roads connecting to Kigali, have attracted many migrants from more distant rural areas. Urban-to-rural migration is relatively high, but does not necessarily reflect a move away from density; many urban dwellers have left urban areas to settle on the fringes, presumably in search of less expensive land and housing.

Kigali City, its fringes, and the Eastern Province have been the main destination of recent internal migration. Internal migration reflects a dual pattern of moving towards and away from density. More highly-educated rural dwellers have moved to the city in search of better economic opportunities and higher returns to education, while less-educated rural and urban dwellers have moved to the Eastern Province in search of land to farm. Employment or lack of it have been the main motivations for migration, with the absence of available land in certain rural provinces an important factor fueling rural-to-rural migration. Inadequate access to public services and infrastructure in certain rural areas has given an extra boost to rural-urban migration.

The most dynamic area for urban development and migration has been the capital, its fringes, and the areas along the main roads connecting Kigali with Rwamagana, Kamonyi and Bugesera Districts. These areas have densified and built-up quickly (some from a low starting point) due to their proximity to economic density and the availability of less expensive land. This development has continued following the most recent data from the 2012 Population and Housing Census, and can be expected to continue going forward given the observed shift away from agriculture, the gradually increasing education levels, and the rising land prices in Kigali City.

References

- Lall, S., Selod, H., and Shalizi, Z. (2006). Rural-urban migration in developing countries: A survey of theoretical predictions and empirical findings. Policy Research Working paper 3915. Washington DC: The World Bank.
- Beegle, K., De Weerdt, J., and Dercon, S. (2011). "Migration and economic mobility in Tanzania: Evidence from a tracking survey." *Review of Economics and Statistics* 93(3): 1010-1033.
- Annez, P. and Buckley, R. (2009). "Urbanization and growth: Setting the context". In: Spence, M., Annez, P., and Buckley, R. (eds). *Urbanization and Growth*. Washington DC: The World Bank.
- Commission on Growth and Development (2009).
- National Institute of Statistics Rwanda (NISR) (2002, 20012). Population and Housing Census (PHC). Kigali, NSIR.
- National Institute of Statistics Rwanda (NISR) (2014). Fourth Population and Housing Census (PHC). Kigali, NSIR.
- National Institute of Statistics of Rwanda (NISR) and MINICOFIN (Ministry of Finance and Economic Planning) (Various years). Integrated Household Living Conditions Survey (EICV). Kigali, NSIR.
- National Institute of Statistics Rwanda (NISR) (2014). Thematic report: Migration and spatial mobility. Kigali, NSIR.
- World Bank (2008). World Development Report 2009: Reshaping Economic Geography. Washington DC: The World Bank.

Annex 1: Data and definitional limitations to the study of internal migration

The study of internal migration in Rwanda is complicated by some data and definitional issues. On the definitional side, internal migration is defined as moving from one district to another district. Changes of residence within districts are not captured as migration. If people tended to move within districts from rural to urban sectors, this will understate the true extent of rural-to-urban migration. This has particular repercussions for the study of population movements to the secondary cities. If people from surrounding rural sectors tended to move to the urban sectors of the secondary city, as is likely the case, migration towards secondary cities will be substantially underestimated.

On the data side, the PHCs only include information on the district of origin of migrants. This means that the analyst does not know exactly where a migrant lived before (e.g., a secondary city, a market town, a rural area, etc.). As a result, it is not possible to calculate net migration rates for secondary cities and for urban areas. Another data limitation is that only the most recent migration episode is captured in the surveys/censuses, making it impossible to distinguish between a one-way migration and a return migration. For instance, a person who lived all his/her life in Kigali and migrates to a rural area is likely to be driven by different factors than a person who came from a rural area to Kigali, lived there six months, and then returned to his/her rural area origin. Yet both will be classified as urban-to-rural migrants.

Annex 2: Urban destination of recent migrants, by origin district

Table 9. Share of migrants going to Kigali and to secondary cities, by origin district (2012)

Province of origin	District of origin	# of recent migrants	Share going to Kigali	Share going to secondary cities
Kigali Province	Nyarugenge	34,200	65.0%	7.7%
	Gasabo	41,270	49.5%	6.1%
	Kicukiro	30,130	50.5%	7.3%
Southern Province	Nyanza	17,360	53.6%	6.3%
	Gisagara	14,990	36.4%	17.6%
	Nyaruguru	17,680	28.7%	15.7%
	Huye	20,210	53.8%	5.6%
	Nyamagabe	19,720	29.0%	6.2%
	Ruhango	20,650	56.1%	10.2%
	Muhanga	31,060	45.0%	4.6%
	Kamonyi	21,270	62.2%	9.3%
Western Province	Karongi	20,060	39.7%	9.9%
	Rutsiro	13,240	16.8%	41.7%
	Rubavu	10,350	40.4%	9.0%
	Nyabihu	19,760	9.2%	18.0%
	Ngororero	24,410	28.0%	11.5%
	Rusizi	15,790	60.5%	7.2%
	Nyamasheke	24,950	46.5%	15.9%
Northern Province	Rulindo	22,370	41.9%	3.9%
	Gakenke	31,370	21.5%	8.2%
	Musanze	15,120	23.1%	10.0%
	Burera	15,100	9.7%	17.3%
	Gicumbi	21,530	27.9%	7.8%
Eastern Province	Rwamagana	17,430	40.7%	5.9%
	Nyagatare	7,740	48.8%	4.1%
	Gatsibo	15,210	24.1%	13.4%
	Kayonza	10,030	38.1%	7.0%
	Kirehe	11,230	25.5%	7.5%
	Ngoma	11,300	41.3%	7.3%
	Bugesera	17,820	30.2%	7.4%

Source: PHC, 2012; World Bank staff calculations.

Table 10. Migration motivations, by current location and gender (2011-2014)

Migration motivation	Rural areas		Kigali		All secondary cities		Huye (Southern Province)		Muhanga (Southern Province)		Musanze (Northern Province)		Nyagatare (Eastern Province)		Rusizi (Western Province)		Rubavu (Western Province)	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employment/employment of spouse	0.49	0.24	0.54	0.49	0.60	0.45	0.75	0.63	0.62	0.40	0.63	0.47	0.38	0.34	0.82	0.75	0.48	0.36
Trade and business	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lack of land	0.10	0.09	0.10	-	0.01	0.01	-	-	-	-	-	-	0.16	0.06	-	-	-	-
Studies	0.03	0.03	0.09	0.05	0.09	0.09	0.04	0.06	0.08	0.14	0.09	0.06	-	0.13	0.09	-	0.16	0.10
Health	0.02	0.01	-	0.01	-	0.02	-	-	-	-	-	-	-	-	-	-	-	0.04
Marriage	0.01	0.18	-	0.12	0.02	0.18	-	0.08	0.03	0.19	0.05	0.26	-	0.13	0.08	0.09	-	0.23
Parents/HH moved	0.09	0.11	0.06	0.09	0.08	0.07	0.17	0.14	0.06	0.08	-	-	0.21	0.09	-	-	0.10	0.06
Other family reasons	0.19	0.28	0.16	0.21	0.15	0.14	0.05	0.09	0.15	0.16	0.14	0.15	0.26	0.25	-	-	0.26	0.17
Disasters or conflicts	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Desire to return home	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Live in their own house built elsewhere	0.03	0.02	0.03	0.02	0.02	0.01	0.06	0.03	0.05	0.04	-	0.04	-	-	-	-	-	-
Other	0.03	0.02	0.01	-	0.01	0.01	-	-	-	-	-	-	-	-	-	0.06	-	0.03

Source: EICV4, 2014.

Table 11. Migration motivations, by current location and gender (2011-2014)

Migration motivation	Rural areas		Kigali		All secondary cities		Huye (Southern Province)		Muhanga (Southern Province)		Musanze (Northern Province)		Nyagatare (Eastern Province)		Rusizi (Western Province)		Rubavu (Western Province)	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employment/employment of spouse	0.54	0.34	0.50	0.32	0.58	0.36	0.61	0.38	0.66	0.49	0.55	0.34	0.52	0.24	0.54	0.35	0.59	0.28
Trade and business	0.00	0.00	0.01	0.00	0.01	-	-	-	0.02	-	-	-	0.03	-	0.02	-	0.01	-
Lack of land	0.09	0.07	0.02	0.02	0.06	0.05	0.04	0.03	0.11	0.02	0.06	0.10	0.03	0.02	0.02	0.02	0.12	0.11
Studies	0.06	0.05	0.01	0.02	0.08	0.06	0.03	0.06	0.04	0.04	0.14	0.09	0.02	0.14	0.20	0.06	0.04	0.01
Health	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.02	-	0.03	0.02	-	-	-	0.01
Marriage	0.00	0.18	0.01	0.12	0.01	0.17	0.01	0.17	-	0.12	-	0.22	-	0.19	0.03	0.11	-	0.23
Parents/HH moved	0.10	0.10	0.07	0.12	0.05	0.08	0.03	0.08	0.02	0.11	0.03	0.09	0.12	0.05	0.03	0.16	0.05	0.02
Other family reasons	0.15	0.22	0.25	0.30	0.16	0.24	0.20	0.24	0.11	0.16	0.15	0.16	0.18	0.33	0.15	0.28	0.14	0.31
Disasters or conflicts	0.01	0.01	0.00	-	0.00	-	0.02	-	0.02	-	-	-	-	-	-	-	-	-
Desire to return home	0.01	0.01	0.00	0.00	0.01	0.01	-	0.01	-	0.01	0.02	-	-	0.02	0.02	-	0.01	-
Live in their own house built elsewhere	0.01	0.00	0.08	0.06	0.01	0.00	-	-	0.02	0.01	0.02	-	0.01	-	-	-	-	-
Other	0.02	0.01	0.02	0.02	0.03	0.01	0.05	0.01	0.03	-	-	-	0.05	-	-	0.02	0.03	0.02

Source: EICV4, 2014.

Annex 3: Estimating the drivers of migration

To estimate the drivers of migration, recent migrants were defined as those who changed district of residence in the three years prior to the survey (EICV4). The EICV4 individual level sample (observations) was split into two parts, depending on whether respondents lived in rural areas in the three years preceding the survey (regardless of their current district of residence) or in urban areas. The rural sample consists of individuals who (i) did not migrate and still live in their same rural district of residence, (ii) did migrate from one rural district to another, and (iii) migrated from rural to urban areas in the three years preceding EICV4. The urban sample consists of individuals who (i) did not migrate and still live in their same urban district of residence, (ii) did migrate from one urban location to another, and (iii) migrated from urban to rural areas in the three years preceding EICV4.

Table 10. Drivers of rural migration

Ref. category: rural dwellers who did not migrate	Rural to rural	Rural to urban
Age	-0.105*** [0.010]	-0.122*** [0.019]
Age Sq.	0.001*** [0.000]	0.001*** [0.000]
Male	-0.354** [0.168]	-0.022 [0.274]
Age*Male	0.012*** [0.005]	0.001 [0.001]
Incomplete Primary	-0.283*** [0.100]	-0.051 [0.226]
Complete Primary	-0.262** [0.115]	0.320 [0.0.232]
Complete Postprimary	1.335*** [0.398]	2.609*** [0.481]
Incomplete Secondary	-0.742*** [0.147]	0.339 [0.269]
Complete Secondary	0.089 [0.185]	1.302*** [0.294]
Higher	0.421* [0.245]	2.438*** [0.302]
Origin density	0.001* [0.000]	-0.006*** [0.000]
Origin isolation	0.840*** [0.131]	-0.662** [0.270]
N	28,036	28,036

Source: EICV4; World Bank staff calculations.

Note: "Origin density" refers to density in district of origin. "Origin isolation" is a composite indicator measuring access to public services and infrastructure in the origin district in 2010/11 (EICV3 survey). The higher the "origin isolation", the worse the access to public services in the origin district in 2010/11. Only people aged 18 or more in EICV4 are included in the regression. Province dummies are included ***: statistically significant at 1%; **: statistically significant at 5%; *: statistically significant at 10%.

To examine the drivers of rural migration, multinomial logit regression was estimated with rural dwellers who did not migrate as base category, those who migrated to other rural areas as category 1, and those who migrated to urban areas as category 3. Results are presented in Annex Table 3. A similar estimation is performed for the urban sample (base category are urban dwellers who did not migrate Annex Table 4). All coefficients need to be interpreted relative to the base category of people who did not move (sedentary rural dwellers in Annex Table 2 and sedentary urban dwellers in Annex Table 3).

Table 11. Drivers of urban migration

Ref. category: urban dwellers who did not migrate	Urban-to-urban	Urban-to-rural
Age	-0.073** (0.029)	-0.035* (0.020)
Age Sq.	0.000 (0.000)	-0.000 (0.000)
Sex	-0.754** (0.311)	-0.821*** (0.254)
Age*Sex	0.021** (0.010)	0.034*** (0.008)
Incomplete Primary	0.332 (0.287)	0.333* (0.172)
Complete Primary	0.752*** (0.285)	0.126 (0.182)
Incomplete Postprimary	0.715** (0.348)	-0.225 (0.254)
Complete Postprimary	1.571*** (0.415)	-0.266 (0.421)
Incomplete Secondary	0.332 (0.300)	-0.742*** (0.199)
Complete Secondary	1.204*** (0.293)	-1.150*** (0.253)
Higher	1.402*** (0.284)	-1.520*** (0.254)
N	6,117	6,117

Source: EICV4; World Bank staff calculations.

Note: Only people aged 18 or more in EICV4 are included in the regression. ***: statistically significant at 1%; **: statistically significant at 5%; *: statistically significant at 10%.

