



Schooling for Learning: Strengthening Resilience of Education in Rwanda

Rwanda Economic Update

*Schooling for Learning: Strengthening
Resilience of Education in Rwanda*

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ACRONYMS

BNR	National Bank of Rwanda	NISR	National Institute of Statistics of Rwanda
CIV	Cote d'Ivoire	NPL	Nonperforming Loans
CONFEMEN	Conference of Ministers of Education of French-speaking Countries	PASEC	Programme d'analyse des systèmes éducative de la CONFEMEN
CPI	Consumer Price Index	PAYE	Pay as You Earn
DEOs	Decentralized Education Officers	PEFA	Public Expenditure and Financial Accountability
DHS	Demographic and Health Survey	PIRLS	Progress in International Reading Literacy Study
DRC	Democratic Republic of Congo	PISA	Programme for International Student Assessment
EAC	East African Community	PSF	Private Sector Federation
ECD	Early Childhood Development	RDB	Rwanda Development Board
EGRA	Early Grade Reading Assessment	REB	Rwanda Education Board
EMIS	Education Management Information System	REPO	Repurchase Agreement Operations
FDI	Foreign Direct Investment	REU	Rwanda Economic Update
FIRST	Financial Sector Reform and Strengthening	RRA	Rwanda Revenue Authority
FY	Fiscal Year	RURA	Rwanda Utilities Regulatory Authority
GDP	Gross Domestic Product	Rwf	Rwandan Franc
GER	Gross Enrollment Ratio	SACMEQ	Southern and Eastern Africa Consortium for Monitoring Education Quality.
GIR	Gross Intake Rate	SDI	Service Delivery Indicators
HCI	Human Capital Index	SEOs	Sector Education Officers
HCP	Human Capital Project	SNNP	Southern Nations, Nationalities and Peoples
ICT	Information, Communications and Technology	SSA	Sub-Saharan Africa
IIEP	International Institute for Educational Planning	TIMSS	Trends in International Mathematics and Science Survey
IMF	International Monetary Fund	U.S.	United States
Kg	Kilogram	UIS	UNESCO Institute for Statistics
LARS	Learning Achievement in Rwandan Schools	UN	United Nations
LOI	Language of Instruction	UNESCO	United Nations Educational, Scientific and Cultural Organization
LSMS	Living Standards Measurement Study	UNICEF	United Nations International Children's Emergency Fund
MICE	Meetings, Incentives, Conferences and Exhibitions	US\$	United States Dollar
MINALOC	Ministry of Local Government	USAID	United States Agency for International Development
MINEDUC	Ministry of Education	VAT	Value-Added Tax
MS4SSA	Mathematics and Science for Sub-Saharan Africa		
NAEB	National Agricultural Export Development Board		

FOREWORD

Welcome to the 13th edition of the Rwanda Economic Update. The Update, a semiannual publication, reports on and synthesizes recent economic developments; considers them in a medium-term, regional, and global context; and analyzes how these developments and current policies may affect the outlook for the economy. The Update attempts to make an analytical contribution to how Rwanda's national development strategy is carried forward. Each edition also has a special feature spotlighting a particular topic. It is intended for a wide audience of policymakers, business leaders, other market participants, analysts engaged in Rwanda's economy, and civil society.

This edition of the Rwanda Economic Update was jointly prepared by World Bank Group teams Rwanda Macroeconomics, Trade and Investment Global Practice, and Education Global Practice. The report was prepared by a team led by Aghassi Mkrtchyan (Senior Economist), Peace Aimee Niyibizi (Economist) and Ruth Karimi Charo (Senior Education Specialist). Part One – Recent Economic Developments – was written by Peace Aimee Niyibizi and Aghassi Mkrtchyan. Part Two – Schooling for Learning: Tackling a Looming Crisis – was written by Ruth Karimi Charo (Senior Education Specialist) and Jee-Peng Tan (Consultant). The report benefitted from comments from Phillip Schuler, Allen Curtis K. Dennis, Naoko C. Kojo, Elizabeth Ninan Dulvy, Tara Beteille and Lianqin Wang. The team benefitted from support from Nancy Umwiza for providing logistical support, Rogers Kayihura for managing communication and dissemination, and Robert Waiharo for design and layout of the report. We are also grateful to Anne Grant for excellent editorial support.

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This report benefitted from productive discussions with Staff from the macroeconomic division of the Ministry of Finance and Economic Planning (MINECOFIN). The World Bank teams appreciate their contributions.

EXECUTIVE SUMMARY

Recent Economic Developments

In the first half of 2018, the economy continued to expand at a brisk pace, well on track for Rwanda to achieve 7.2 percent growth in 2018. GDP growth was 8.6 percent, following 9.3 percent growth in the second half of 2017. Growth in production was again broad-based. As it continued to recover from recent droughts, agriculture expanded by 7.6 percent. Industry has also regained momentum as large construction projects resumed and food-processing was strong. Growth in services was a healthy 8.7 percent.

On demand side, investments were the main driver of growth. After stagnating for close to two years, private consumption grew 5 percent. Driven by strong domestic demand, imports rose by 12 percent in real terms. Exports continued to grow at a healthy 10.8 percent in real terms, although net exports contributed negatively, being outpaced by growth in imports.

Solid growth was coupled with low inflation, and pressures on the exchange rate have dissipated. Headline inflation as of September 2018 was 1.2 percent. The Rwandan franc had by then depreciated by about 2 percent after the major external adjustment of 2017. A supportive macroeconomic environment has allowed the National Bank of Rwanda to keep the policy rate at 5 percent throughout the year. Nonperforming loans are trending down with the help of a new regulation on credit classification and provisioning. Credit growth, however, is still slow: after seeing their credit portfolios deteriorate in 2016–17, banks have become more risk-averse. The banking sector continues to be well-capitalized—the ratio of capital to risk-weighted assets is well above the minimum requirements.

In FY2017/18, both revenues and expenditures went up slightly as a percent of GDP and the deficit marginally increased. Revenues increased

by 0.3 percentage points to reach 23 percent of GDP. Improved performance of both direct and indirect taxes drove the increase; grants continued to decline as percentage of GDP. Net lending was the main driver of the similar rise in expenditures. Although the fiscal deficit at 5 percent of GDP was only slightly higher than in the year before, it exceeded original budget projections by about 1 percentage point of GDP. At year-end 2017 public and publicly guaranteed debt had reached 48 percent of GDP.

Over the medium-term growth is projected to be steady at 7 to 8 percent, sustained by improved agriculture; strong exports, both traditional and nontraditional; and large infrastructure projects, such as the current construction of the new airport. With inflation low and a favorable external environment, monetary policy is expected to remain accommodative. As large construction projects resume, over the medium-term import demand will elevate the current account deficit, though it is not expected to exceed 9 percent of GDP.

The main downside risks are weather conditions, uncertainty in the global economy, and the weak potential of the private sector. Its exposure to weather risks not only undermines Rwanda's growth prospects but also pushes up inflation and reduces access of the poor to food. Floods, as well as drought, also threaten Rwanda's agriculture. And both growth and external accounts are vulnerable to uncertainty in the global economy. Overall, Rwanda's medium to long-term outlook continues to face risks resulting from the lack of responsiveness of the private sector to the improvement of the business environment as well as low quality of human capital.

Schooling for Learning: Strengthening Resilience of Education in Rwanda

Rwanda's education system has made significant progress in expanding coverage over the past 25 years and has now entered a new phase of

development in which learning will become just as important, if not more. This enlargement of focus is critical to the country's aspiration to join the ranks of upper-middle income countries by 2035. Low-income countries that are now in this league have invariably universalized nine or ten years of basic education and equipped their young people with basic competencies in language, mathematics and science, and progressively enabled new cohorts of students to achieve highly favorable results on international assessments of student learning. Rwanda has rebuilt a functioning education system and reinforced its budgeting and budget execution system, both of which provide the tools for implementing strategic reforms that can make significant contributions to the country's goals in basic education.

The magnitude of Rwanda's challenge—regarding both coverage and learning—becomes clear in comparative perspective. Compared with Sub-Saharan African countries with more established systems of education, Rwanda has exceptionally high gross enrollment ratios in primary education, a characteristic of systems with recent histories of rapid expansion; and the out-of-school population relative to the school-age population continues to be non-negligible. Dropping out remains prevalent: only 68 percent of first graders eventually six years of primary schooling, and only 38 percent of them complete the full nine years of basic education. Learning outcomes are alarmingly low, based on albeit patchy data that are publicly available: only 45 percent of 2nd and 5th graders tested in 2014 met grade-level expectations in Kinyarwanda and in English, respectively; and the average score for mathematics was 33 percent among 2nd graders and 38 percent among 5th graders. According to the World Bank's newly-launched Human Capital Project, Rwanda's overall Human Capital index is consistent with the country's level of per capita GDP. However, the education-related sub-components of the Index are especially low, highlighting the need for increased policy attention to improve both learning outcomes and school completion rates.

Four priority areas warrant attention to address Rwanda's looming crisis in basic education. The recommendations are based on the implications for Rwanda of two recent World Bank studies. The first, entitled *Facing Forward: Schooling for Learning in Africa*, provides a comparative perspective on the status and progress of basic education across Sub-Saharan African countries; the second study, a chapter on Human Capital in the *Rwanda Drivers of Growth Study*, offers a long-term perspective contextualized by the country's overall economic development strategy. Rwanda could aim higher and deliver better results in basic education, as follows:

1. ***Intensify efforts to improve early grade progression and foundational competencies.*** Rwanda could aim explicitly to ensure that all children attend school regularly and progress from 1st grade to 4th grade without repeating, that completers of 2nd grade are orally fluent in Kinyarwanda and that completers of 4th grade are able to read with comprehension. Practical steps for implementation include: expanding access to pre-school, including better nutrition to reduce pervasive stunting among young children; tightening school- and district-level management of the early grade; capping class size at no more than 50 students per class by hiring new staff, and expanding affordable, proven models of early grade instruction.
2. ***Remove two key impediments to learning and school continuation in basic education.*** The first pertains to the language of instruction (LOI) which switches, under current policy, from Kinyarwanda to English from Grade 4 onward. Because of teachers' limited grasp of English, a more pragmatic and effective approach is to delay the transition to English, to Grade 5 or even Grade 6, while taking steps to create conditions for a successful switch in each school (e.g., through targeted teacher training packaged with remedial teaching, and well-

sequenced textbooks and materials). The second impediment relates to costs and poor quality of services—the main reasons for the 18-percentage point dropout in the transition between primary and lower secondary schooling. Promising policy responses include: locating schools closer to rural habitations; pro-poor conditional cash transfers and related publicity campaigns on the benefits of schooling. Looking ahead, Rwanda may also consider: using technology to enable cost-effective teaching of lower secondary mathematics and science and abolishing end-of-cycle examinations at Grade 6 as a structural impediment to school continuation.

3. *Strengthen the professionalism of teachers, instructional leaders and their managers.*

Ample research findings from Sub-Saharan African countries suggest the following possible approaches to increase the competence of Rwanda's teacher workforce: (a) for serving teachers, provide structured teacher guides and competency-based training options, along with career progression pathways; (b) for low-performing teachers, offer options for improvement and exits for those falling short of minimum professional standards; (c) for prospective teachers, provide pre-service training aligned to the national curricula and priorities for student learning; and (d) for school directors and instructional leaders, strengthen career incentives and specific training for their role as managers, mentors and coaches of teachers. Other aspects of teacher management also require attention, notably: minimum qualifications for recruitment of primary school teachers; teacher workloads and staffing norms; and the pay structure and pathways for career progression.

4. *Increase public spending on schooling for learning and strengthen implementation capacity.* Rwanda needs to spend more on basic

education. An important priority is to ensure that all schools possess minimally conducive conditions for teaching and learning, based on an agreed package of these conditions. More resources will also be needed to cope with a significant projected increase in lower secondary enrollments in the coming years. Ensuring that resources do indeed reach schools will require better procurement and financial management at all levels of oversight. In core areas of education administration, MINEDUC's own technical capacity must grow to tackle its increasingly complex mandate. Measuring and monitoring school progression and learning outcomes, especially through participation in regional or international studies, is essential for greater accountability throughout the system, based on objective benchmarks for results.

The foregoing plan for reform is broad and could benefit from prioritization of the main actions.

Based on considerations of urgency and readiness to implement at scale, the agenda of short-, medium- and long-term actions shown below could form the basis for dialogue among stakeholders to agree the way forward. Implementation will naturally take center stage in a system that has recovered its key institutional assets for this purpose: a functioning network of schools, an articulated curriculum, an integrated teacher workforce, and an effective public financial management system. Nonetheless, capacity remains sparse; learning-by-doing, with room for course correction in light of lessons from implementation, will, therefore, be critical for progress. Persevering with the method while keeping a clear-eyed focus on schooling for learning for all Rwandan children—over decades, not just years—will help establish the strong human capital foundation required to realize the country's aspiration of becoming an upper middle-income country by 2035.

A possible prioritization of Rwanda's reform agenda toward schooling for learning

Priority areas and related actions		Time-Frame		
		Short 1-2 years	Medium 3-5 years	Long 5+ years
A	Improve early grade progression and foundational learning			
A1	Expand access to early childhood development			
	a. Intensify efforts to reduce stunting among pre-primary children	X	X	
	b. Expand public, community-based pre-school and school readiness programs	X	X	
A2	Tighten school- & district-level management of the early grade bulge			
	a. Use age-grade norms in grade 1, and monitor key indicators closely for each school	X		
	b. Cap class size at 50 or fewer in grades 1 and 2 by hiring more teachers/assistants		X	X
A3	Expand affordable models of early grade instruction			
	a. Use accelerated reading program in grade 1, and provide reading materials to all classes	X		
	b. Change instructional practices by training early grade teachers and providing materials	X	X	
B	Remove two key impediments to learning and school continuation in basic education			
B1	Manage implementation of Language of Instruction (LOI) policy in a pragmatic fashion			
	a. Assess English proficiency of grade 4 teachers and students against benchmarks, and develop a school map of teachers' proficiency to target training and provision of materials	X	X	
	b. Identify and scale up cost-effective models of English language training for teachers, including the development of instructional materials	X	X	
B2	Reduce cost of schooling and enhance the benefits perceived by students and their families			
	a. Offer lower secondary education closer to students' homes	X	X	X
	b. Use technology for cost-effective teaching of lower secondary mathematics and science			
	c. Abolish the end-of-Grade 6 national examination		X	X
C	Strengthen professionalism of teachers, instructional leaders, and their managers			
C1	Enhance teachers' professional competence and the support they receive			
	a. For <u>serving teachers</u> : teacher guides, competency-based training and career pathways	X	X	X
	b. For <u>low-performing teachers</u> : pathways for growth and exits for persistent laggards		X	X
	c. For <u>prospective teachers</u> : better alignment of pre-service training with their future work		X	X
	d. For <u>school directors and instructional leaders</u> : better incentives and customized training	X	X	
C2	Professionalize teacher recruitment and foster career development and progression			
	a. Raise minimum qualification standards for teacher recruitment in primary education		X	X
	b. Agree workload and staffing norms to rationalize deployment, reduce double-shift teaching	X	X	X
	c. Review pay structure of teachers, allow for career progression, invest in teacher training		X	X
D	Increase public spending on basic education and strengthen implementation capacity			
D1	Mobilize and deploy resources to universalize basic education with quality			
	a. Define and cost minimum package for all schools and budget for it	X	X	
	b. Review and improve procurement and financial management at all levels	X	X	
	c. Conduct policy-sensitive projections of school expansion to assess budgets and strategy	X	X	X
D2	Augment MINEDUC capacity in critical areas of education administration			
	a. Strengthen core capabilities (e.g., planning, budgeting, procurement, data, HR, etc.)	X	X	
	b. Develop graduate-level programs at University of Rwanda in selected technical domains		X	X
	c. Participate in regional or international studies on student learning	X	X	X

PART ONE

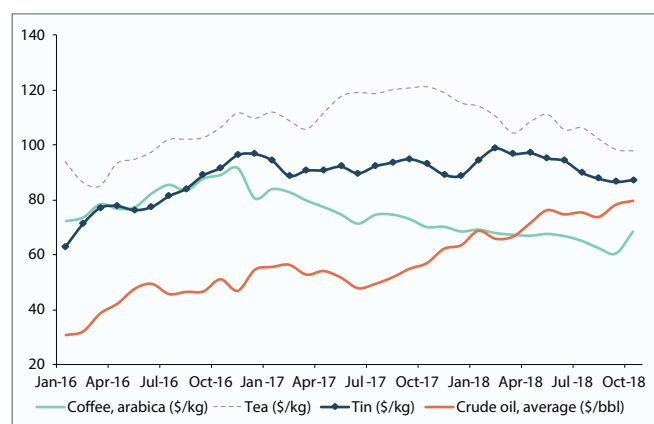
RECENT ECONOMIC DEVELOPMENTS



1. Global growth is moderating

Uncertainty in the global economy is growing, and the outlook has deteriorated compared to the previous Rwanda Economic Update (REU-12). The broad-based cyclical recovery that started in the second half (H2) of 2017 has suffered new setbacks and uncertainty weighs heavily on the outlook. New setbacks include growing trade tensions between major economies, and financial market pressures in some emerging market and developing economies.¹ Indicators of both global trade and industrial activity are softening and commodity prices have become volatile. Growth has become more uneven across advanced countries. While growth continued to be strong in the United States, 3.5 percent in the third quarter of 2018, the Euro area grew only at 0.2 percent in the three months to September 2018. Global uncertainty has pushed commodity prices to move in different directions, including Rwanda's key export and import products (Figure 1.1).

Figure 1.1: Prices for Rwanda's key import and export products (\$100=2014)

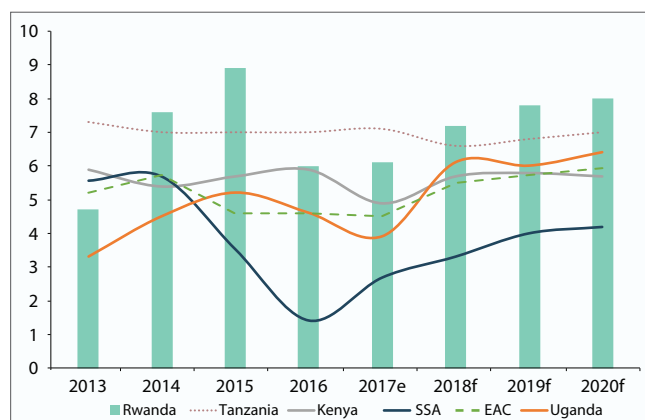


Source: World Bank 2018b.

Sub-Saharan Africa (SSA) continued to experience a gradual improvement, with an estimated growth of 2.7 percent in 2018, up from 2.4 percent in 2017. The pace of recovery in SSA is slower than expected weighed by the sluggish expansion in Angola, Nigeria, and South Africa—the region's three largest

economies. Lower oil production—due to capacity constraints—offset the positive tailwinds from higher oil prices in Angola and Nigeria. In South Africa, contractions in agriculture, mining, and construction held the economy back. Growth is strong throughout the East African Community (EAC), outpacing the SSA-wide average. In 2017, droughts had caused the regional growth rate to decelerate to 4.5 percent. It is now picking up as agriculture rebounds in Kenya, Rwanda, and Uganda. In Tanzania growth has showed signs of slowing due low public investment and uncertainties in the investment climate (World Bank Group, 2018a). In 2018, growth for the region is projected to average 5.5 percent, higher than the overall growth in SSA, but lower than Rwanda's projected growth (Figure 1.2).

Figure 1.2: Rwanda maintained a solid growth momentum (percent)



Source: World Bank 2018b. World Bank Group (Macroeconomic, Trade & Investment, Poverty & Equity) 2018

Note: SSA: Sub-Saharan Africa; EAC: East Africa Community

2. Rwanda's growth momentum continued in the first half of 2018

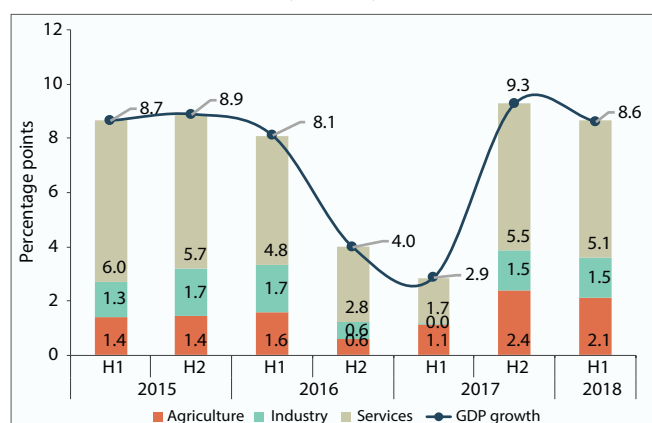
The growth momentum that began in the second half of 2017 was sustained in the first half of 2018, consistent with the projections in REU-12. Real GDP rose by 8.6 percent following 9.3 percent in H2 of 2017 (Figure 1.3). Growth has accelerated across the board as Rwanda recovered from the drought,

¹ World Bank Group (2018). Global Economic Prospects June 2018: The Turning of the Tide? Washington, DC: World Bank Group & World Bank Group (2018). Commodity Markets Outlook, October. World Bank, Washington, DC.

large-scale construction projects resumed, and private consumption picked up. The growth recovery has translated into high domestic revenue collection in the fiscal year of 2017/18 (ending in June 2018), while the government maintained a higher spending momentum.

Figure 1.3: Contributions of the main sectors to real GDP Growth, 2015-18

(contribution to GDP growth, year-on-year)



Source: NISR data

Growth in agriculture continued at high pace in H1 of 2018 as Rwanda recovered from the drought of 2016 and 2017. Rwanda still depends on rain-fed agriculture with only a fraction of all croplands irrigated in 2018², which explains the volatility of growth rate in the sector. Recovering from the drought, agriculture grew 7.6 percent, contributing 2.1 percentage points to GDP growth in H1 of 2018 (Figure 1.3 and Table 1.1). The Seasonal Agricultural Survey for Season A of 2018 (NISR, 2018c) indicates that production went up by 6.5 percent in Season A³ after falling by 7.2 percent the year before. Export crops grew by 22.4 percent—the highest growth rate since 2015—driven by high coffee and tea production. In H1 of 2018, coffee production expanded by 43.0 and tea by 19.6 percent (year-on-year), recovering from declines of 12.1 and 2.5 percent respectively a

year earlier. In addition to the return to normal rain patterns, the production gains can also be attributed to improved use of fertilizers and recent investments in new tea plantations (NAEB, 2018).

The resumption of large-scale construction activities and improvements in food-related manufacturing drove industrial activities, while high mining growth observed in 2017 was not sustained. Industrial output expanded by 9.0 percent in H1 of 2018, far above the 0.2 percent of a year earlier (Table 1.1). Construction grew 9.4 percent after having contracted since H2 of 2016. The revival was mainly due to construction of Bugesera airport, but smaller-scale commercial construction has also recovered. At 5.6 percent, growth in mining was substantially lower than in 2017 because of a slowdown in the growth of non-traditional minerals. This illustrates difficulties that confront Rwanda in sustaining high rates of growth in the newly emerging mining sub-sectors that experienced strong expansion in 2017.

Manufacturing production expanded by 10.3 percent in H1 of 2018. Growth was particularly strong in food-related manufactures, where output expanded by 14.3 percent, and in textiles, which expanded by 21.4 percent. The robust growth in manufactures is supported by continued recovery in food production after the 2016–17 drought and by new investments in light manufacturing such as textile and garment, agro-processing, and furniture largely in response to Made in Rwanda initiatives. The Rwanda Foreign Private Capital 2017 Report⁴, indicates that in 2013–16 manufacturing ranked fourth as the main destination for foreign direct investment (FDI) behind information and communications technology (ICT), financial services and mining, ahead of trade services and tourism (Box 1.1).

² In 2018 season A, for small scale farmers, irrigation was practiced in 5 percent of all cultivated plots (913,685 ha) and in 18.5 percent of all cultivated plots (21,332 ha) for Large Scale Farmers.

³ Rwanda has three agricultural seasons, mostly conditioned on rainfall: Season A, September through February; Season B, March through June; and Season C, July through September.

⁴ See Foreign Private Capital Census Reports (2010-2017). <http://www.statistics.gov.rw/datasource/foreign-private-capital-census>

Table 1.1: Real GDP Growth, Rwanda, 2015–18
(Monthly)

	2015	2016	2017	H1 of 2016	H2 of 2016	H1 of 2017	H2 of 2017	H1 of 2018
GDP growth	8.9	6.0	6.1	8.1	3.9	2.9	9.3	8.6
<i>Production side</i>								
Agriculture	5.0	3.9	6.5	5.6	2.2	4.2	8.9	7.6
Food crops	3.6	3.1	7.3	4.8	1.3	3.8	10.9	5.9
Export crops	14.0	2.5	2.4	15.9	-6.4	-3.9	9.6	22.4
Industry	9.1	6.6	4.2	10.4	3.5	0.2	8.2	9.0
Mining	-4.8	10.0	20.8	12.9	7.7	1.4	38.1	5.6
Manufacturing	8.4	6.6	6.7	9.5	5.0	5.4	7.4	10.3
Construction	15.6	4.9	-3.2	10.8	-0.4	-5.5	-0.4	9.4
Services	10.4	7.2	8.0	8.5	5.9	5.1	10.8	8.5
Trade & transport	11.4	6.9	3.7	12.1	1.9	-4.6	12.6	17.8
Wholesale & retail trade	4.3	8.3	3.8	12.4	0.0	-9.4	10.1	17.8
Other services	10.1	7.3	9.4	7.3	7.3	8.5	10.3	5.7
Net taxes	14.1	4.4	-4.0	10.0	-0.5	-10.8	2.7	13.6
<i>Expenditure side</i>								
Domestic demand	16.4	2.9	3.9	6.9	-0.8	0.4	7.4	9.4
Government consumption	5.1	9.2	10.7	4.4	14.1	12.0	9.9	-0.6
Household consumption	18.2	-0.5	1.7	2.3	-3.2	1.1	2.2	5.1
Investment	17.6	10.1	6.5	23.2	-1.4	-7.2	21.2	28.1
External demand (or Net exports)*	57.7	-8.7	-5.8	1.9	-18.6	-9.6	-1.1	12.8
Exports of goods and services	6.3	12.9	33.7	8.0	17.9	21.8	44.1	10.8
Imports of goods and services	34.7	-1.1	10.1	4.2	-5.9	2.0	18.5	12.0

Source: NISR data

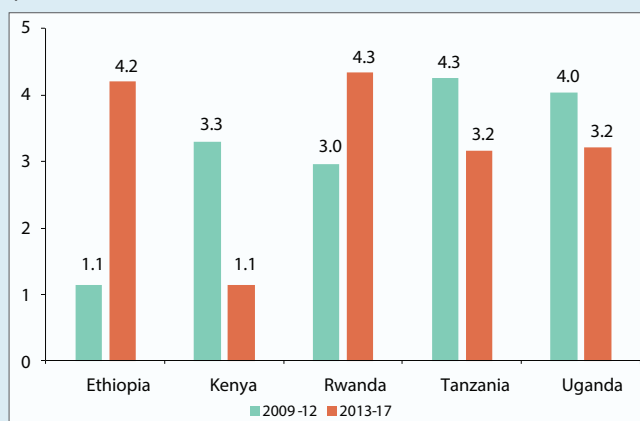
Note: * A positive sign for net exports means a widening negative balance of goods and services—subtracting from GDP growth—since the trade balance is in deficit in each period.

Box 1.1: Foreign Direct Investment in Rwanda

Foreign direct investment (FDI) has been rising in recent years but is still relatively low. In 2013–17, it averaged 4.3 percent of GDP, peaking at 5.7 percent in 2014, and up from 2.8 percent in 2008–12. This brought Rwanda to a higher level of FDI than several neighboring comparator countries (Box Figure 1).

Information and communication technology and financial services continued to attract most FDI. This was mainly driven by the entries of new mobile operators, and new investment for the existing ones. Rwanda's financial system has also attracted FDI through foreign banks investing in the existing local banks or

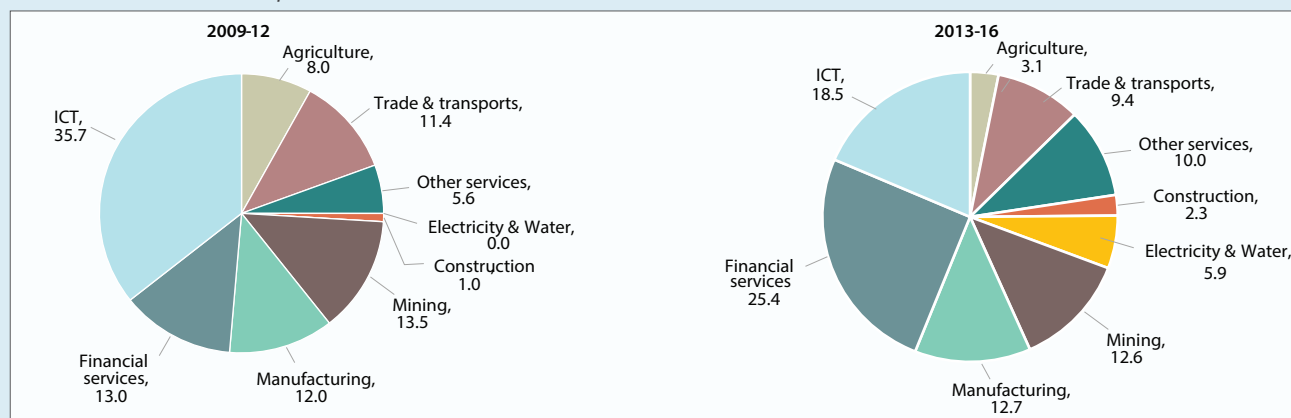
Box Figure 1: FDI inflows, Rwanda and Selected Countries
(percent)



Source: UNCTAD

establishing new ones. Foreign ownership in banks' capital has reached 35 percent. FDIs to industrial activities (such as manufacturing, construction, electricity and water, except for mining activities) have been gradually increasing (Box Figure 2), which to some extent reflects "Made in Rwanda" incentives for investment in manufacturing.

Box Figure 2: FDI by industrial activity, 2009–12 and 2013–16
(Sectoral destination of FDI, percent)



Source: National Bank of Rwanda (BNR), NISR, Rwanda Development Board (RDB)

Services remain the main driver of GDP growth in terms of sectoral contributions. Accounting for more than 45 percent of GDP, services grew by 8.5 percent in H1 of 2018, up from 5.1 percent in H1 of 2017 but slightly lower than in H2 of 2017. Services sector that are closely related to household consumption—such as trade, transport, financial services, and ICT grew by double digits. The hospitality sector (hotels and restaurants) performed relatively well, as Rwanda continued to position itself as a successful destination for Meetings, Incentives, Conferences and Exhibitions (MICE).

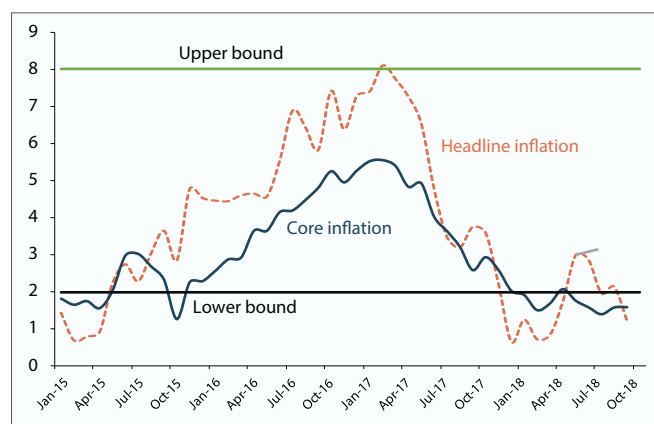
In H1 of 2018 domestic demand drove growth, while net exports deteriorated. Investment grew by 27.1 percent—the second consecutive half-year with growth above 20 percent (Table 1.1). This was propelled by the resumption of large-scale construction projects like Bugesera airport and by the uptick in investments (with significant contribution from public investments) reflected in imports of machines, devices, and tools. Investments contributed 7.5 percentage points to

GDP growth, their highest contribution in many years. Private consumption grew by 5.1 percent, contributing 4.0 percentage points to GDP growth. The expansion in private consumption followed two years of stagnation. Government consumption fell by 0.6 percent because of restraints on current expenditures. The contribution of net exports was negative, deteriorating by 12.8 percent in real terms from the same period in 2017 (Table 1.1). This reversed the trend of positive contribution of net exports observed in 2016 and 2017.

3. Monetary and financial conditions remain stable, while credit growth has been modest

Inflation remains quite low—the lowest in the EAC. In the 12 months ending in September 2018, headline inflation was 1.2 percent, while core inflation was 1.6 percent (Figure 1.4). Inflation fell from its peak of 7.9 percent in February 2017. Food price inflation declined to its lowest level since 2010 (Figure 1.5) thanks mainly to favorable harvests in 2018. Transport prices were the fastest-growing

Figure 1.4: Headline and core inflation, 2015–18
(Percent)

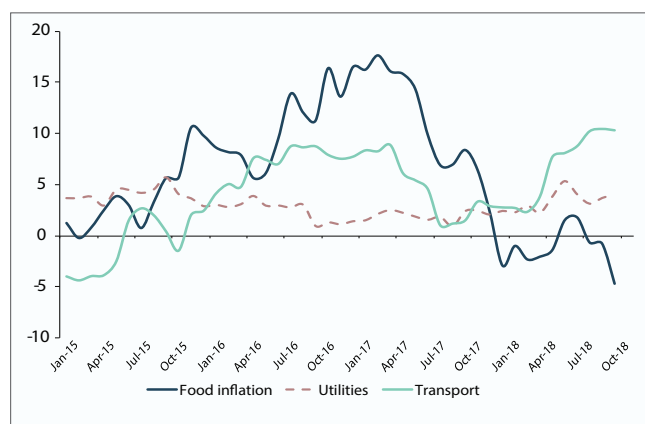


Source: NISR data.

component of the CPI, driven in part by rising international fuel prices (Box 1.2). Low inflation and well-anchored inflationary expectations allowed the National Bank of Rwanda to hold the policy rate at 5.5 percent.

Notwithstanding robust growth, stable inflation, and supportive monetary conditions, growth in bank credit continued to be slow (Figure 1.6). Rwanda's private credit growth shrunk from its recent peak of about 32.6 percent in January 2016 to a low of 6.5 percent in July 2017. In H1 of 2018, credit growth was slightly higher than in 2017, at 8.1 percent, while the volume of new loans contracted.

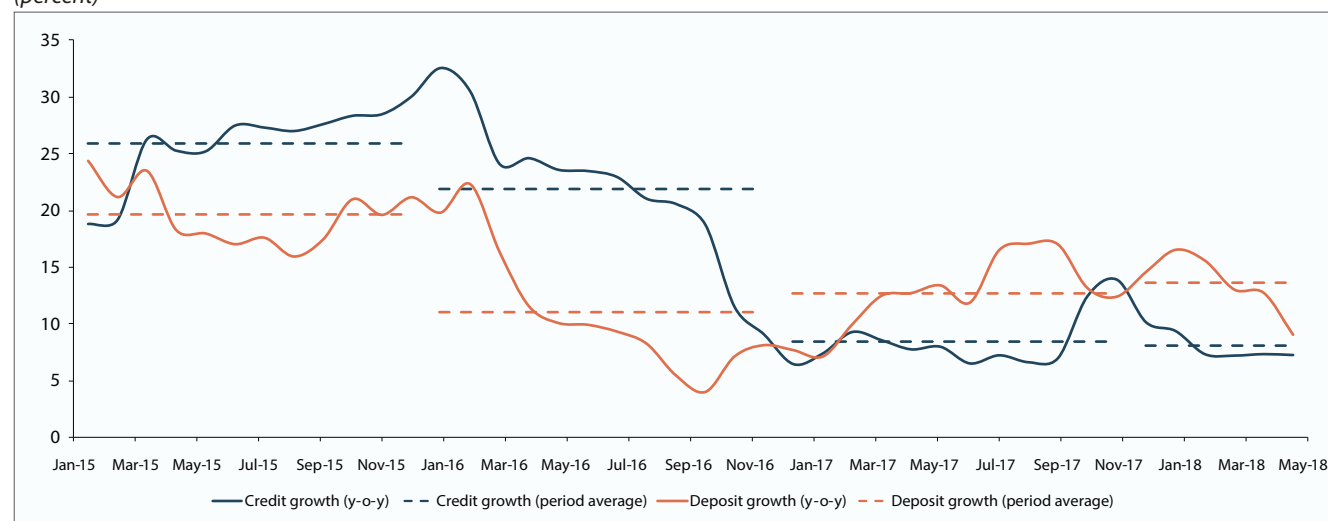
Figure 1.5: Inflation rates of selected components 2015–18,
(Percent)



Source: NISR data.

Concerns about the bank assets quality have contributed to sluggish credit growth. With balance sheets impaired by rising non-performing loans (NPL), commercial banks have become prudent in issuing new loans. The NPL ratio had increased from 6.2 percent in December 2015 to 8.2 percent in June 2017, driven mainly by increased NPL levels in agriculture and services sector. The NPL ratio came down to 6.9 percent in June 2018 because of major NPL write-offs. To address financial sector risks, in January 2018 the BNR issued new regulations on credit classification and provisioning to banks to promptly identify and monitor NPLs and better manage credit risks. Tighter credit regulation, which was necessary for financial

Figure 1.6: Credit and deposit conditions, 2015–18
(percent)



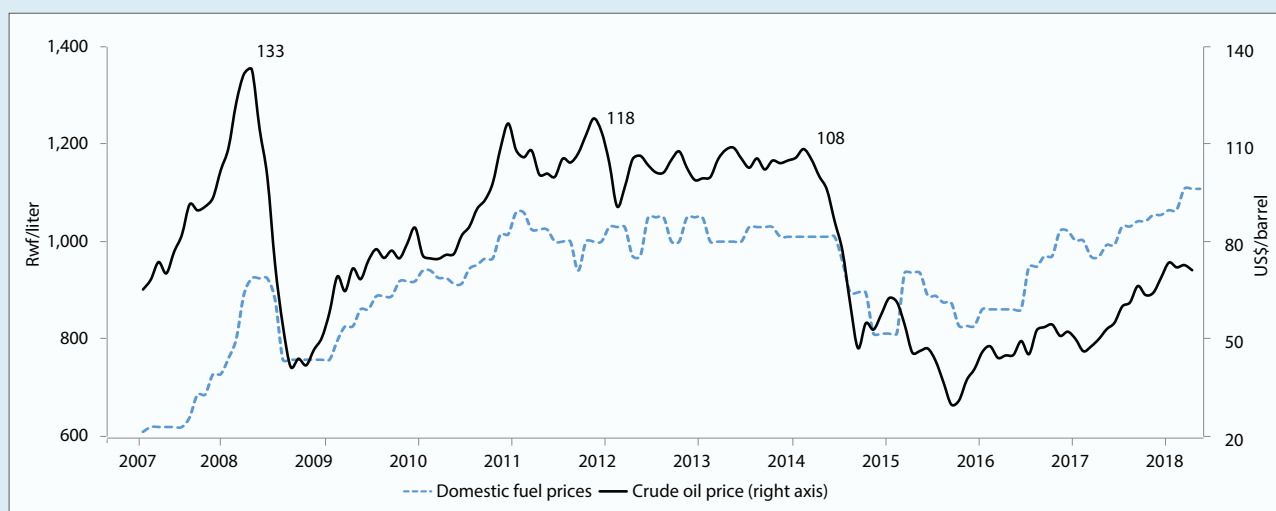
Source: BNR data.

Box 1.2: International oil prices and transport in Rwanda

In response to the changes in international fuel prices, Rwanda reviewed its administered prices for domestic retail petroleum four times this year, raising them by a total of 7.6 percent, from Rwf 1,031/liter (=US\$1.22/liter) in December 2017 to Rwf 1,109/liter(=US\$1.29/liter) (Box Figure 3). Administrative control of fuel prices is aimed at smoothing the volatility of world prices and are expected to be fiscally neutral. According to the Global Economic Prospects report (World Bank Group, 2018b), oil prices are substantially above what was expected because of both higher demand and supply disruptions in several oil-producing countries. Crude oil prices rose by more than 16 percent in the first 8 months of 2018, to an average of US\$71 a barrel.

In 2018 the higher price for petroleum has pushed up prices for transport services in Rwanda. In the 12 months ending in September 2018, transport prices went up 10.3 percent. In April, the Rwanda Utilities Regulatory Authority (RURA) announced new tariffs for public transport, which took into consideration changes since 2015, such as fuel price increases, installation of speed governors, automated fare collection and E-ticketing in public buses, and higher insurance premiums.

Box Figure 3: International oil prices and domestic retail fuel prices, 2007–18



Source: World Bank, Rwanda Utilities Regulatory Authority (RURA), Ministry of Trade and Industry

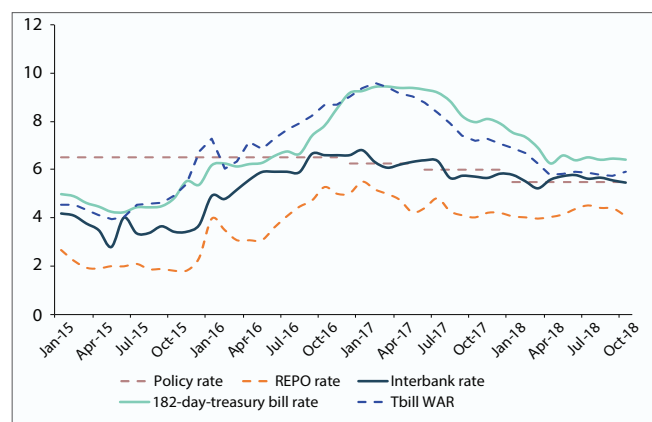
stability, has reduced banks' appetite for excessive risk and has contributed to the credit slowdown in short-term. The volume of new loans dropped by 3.6 percent in H1 of 2018 after a 2.4 percent-decline in the same period of 2017. The slowdown was mainly observed in bank lending to commerce, restaurants and hotels.

Rwanda's banking sector remained well-capitalized, and interest rate spreads (the difference between lending and deposit rates) narrowed. At 19.7

percent in June 2018, the risk-weighted assets ratio was well above Basel III requirements, and almost unchanged from December 2017. Adoption of Basel III will further reinforce the capital positions of banks.⁵ Average bank interest rates on loans held at about 17 percent and deposit rates hovered around 8 percent; the 9 percent average intermediation spread in H1 of 2018 hit a low level last seen in H1 of 2015. The loan-to-deposit ratio of commercial banks has remained almost unchanged since December 2017.

⁵ The new framework introduces two additional indicators on the liquidity requirement of the banking sector: the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) of banks, standing at 299.5 percent and 224.7 percent respectively as at June 2018, higher than the 100 percent minimum prudential requirement. (BNR regulation N° 07/2017 of 19/05/2017).

Figure 1.7: Developments in money market interest rates (Percent)



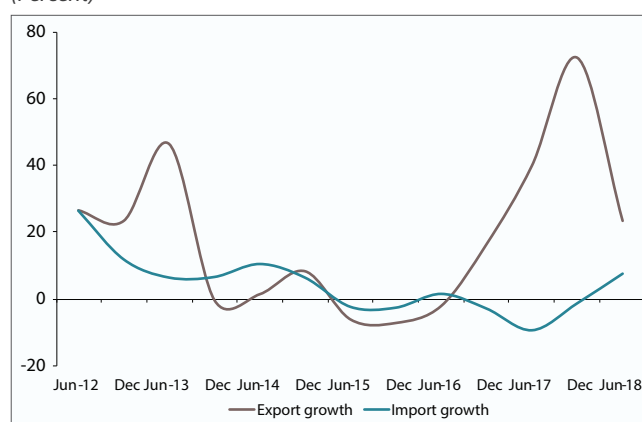
Source: BNR data

Money market interest rates have declined in line with the lower policy rate. Interbank and REPO rates have closely followed the policy rate (Figure 1.7). Interest rates of Treasury bills continued to decline after peaking up in 2017. The weighted-average interest rate of treasury bills has declined from the peak of 9.6 percent in February 2017 to 5.9 percent in October 2018. Well-anchored inflationary expectations and slow depreciation have contributed to the decline in interest rates. A lower domestic debt issuance by the government has also played a role. In H1 of 2018, the total amount of treasury bills issued was 11 percent lower than in the same period of 2017.

4. Rwanda's external position continued to strengthen

Rwanda's trade deficit narrowed further in 2018.⁶ In the 12 months ending in June, the trade deficit was about 14 percent of GDP, down from its peak of 21.9 percent in 2016. Two years of strong export growth and relatively modest import growth drove the adjustment. Although export growth has slowed in 2018, it remained strong at 23.3 percent in U.S. dollar terms for the first half of 2018, while imports grew by 7.0 percent (Figure 1.8).

Figure 1.8: Formal exports and imports, growth rate in percent, 2011-18 (Percent)



Source: BNR data

Exports of three traditional minerals led export growth, supported by high international prices. After growing by 45 percent in 2017, export values of three traditional minerals—cassiterite, coltan, and wolfram—expanded by more than 50 percent year-on-year (y-o-y) in H1 of 2018 to US\$73.4 million. This was due to increased unit prices of Coltan and Wolfram, 53.8 percent and 45.3 percent, combined with 23.9 percent and 28.5 percent increase in export volumes, which raised the total value of exports by 91 percent and 87 percent respectively. Cassiterite, accounting less than 37.3 percent of total 3Ts values, saw its export values expanding by 13.7 percent due to a 13.5 percent increases in export volumes while their unit price was almost unchanged (Table 1.2).

Exports of the two main crops, coffee and tea, rose by about 14.3 percent, mostly due to higher volumes. Meanwhile, a higher share of fully washed coffee raised the average unit price of coffee by 3.7 percent, to US\$2.76/kg in H1 of 2018. A lower unit price for tea was offset by 10.5 percent higher volumes as production of tea surged as result of the return to normal rain patterns as well as improvements in fertilizers' use (NAEB, 2018).

⁶ Balance of payments data that include both formal and informal trade statistics are published on annual basis in Rwanda. Analysis underlying REU-13 for H1 of 2018, in line with previous December issuances of REU, are based on formal trade data for Rwanda, while June issuances of REU are based on total exports that also include formal trade.

Table 1.2: Trends in Rwanda's main traditional exports
(Percent changes)

	2010	2011	2012	2013	2014	2015	2016	2017	H1 of 2018
Value									
Coffee	50.4	33.0	-18.4	-9.8	8.7	4.0	-5.7	9.6	33.1
Tea	15.5	14.7	2.9	-15.6	-6.7	40.0	-12.5	32.9	8.0
Cassiterite	47.7	129.4	-45.4	15.5	17.8	-52.4	1.6	44.1	13.7
Coltan	-8.7	108.8	47.5	136.5	-22.1	-36.8	-40	56.5	90.6
Wolfram	23.3	125.7	63.9	14.4	-11.5	-34.8	-31.5	6.2	86.7
Volume									
Coffee	21.6	-14.5	8.9	17.7	-20.1	17.7	-0.8	0.2	28.3
Tea	15.2	10.2	-5.4	-6.4	7.9	8.9	-1.1	7.5	10.5
Cassiterite	-9.3	79.4	-33.3	5.6	21.6	-35.4	-7.7	34.1	13.5
Coltan	-21.2	18.9	28.6	115.4	-6.6	-28.3	-23.1	35.8	23.9
Wolfram	-3.5	19.3	74.0	26.7	-0.2	-19.4	-3.8	-11.2	28.5
Price US\$/KG									
Coffee	23.7	55.5	-25.1	-23.4	36.0	-11.6	-4.9	9.4	3.7
Tea	0.3	4.0	8.7	-9.8	-13.5	28.6	-11.5	23.6	-2.2
Cassiterite	62.8	27.8	-18.1	9.4	-3.1	-26.3	10.1	7.5	0.1
Coltan	15.9	75.6	14.7	9.8	-16.6	-11.9	-21.9	15.2	53.8
Wolfram	27.8	89.2	-5.8	-9.7	-11.4	-19.1	-28.8	19.6	45.3

Source: BNR data

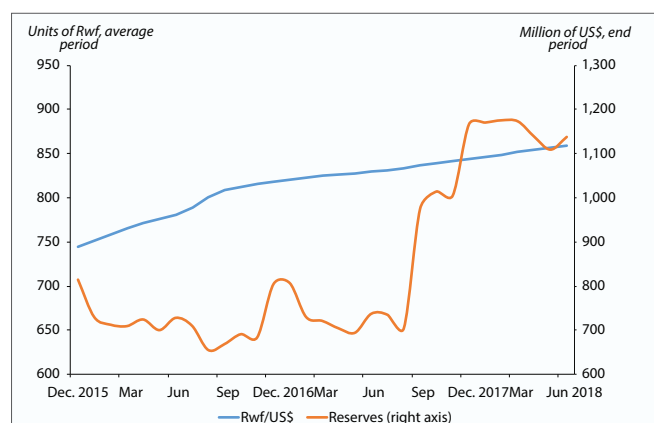
Growth momentum in nontraditional exports is slowing. Between mid-2016 and year-end 2017, exports of such nontraditional minerals as beryllium, unwrought lead, and gemstones drove a rebound in export growth, generating more than 23 percent of total export earnings. In H1 of 2018, the export value of nontraditional minerals went up by only 1.1 percent, to US\$72.6 million, generating only 16 percent of total export. This shows that the growth momentum of non-traditional exports was difficult to sustain, mostly reflecting still narrow base of non-traditional exports and possibly temporary character of the surge of some nontraditional exports in 2017. In contrast, horticulture export, which is considered as nontraditional for Rwanda, grew 45.1 percent continuing recent trends of strong growth.

Surging domestic demand for industrial raw materials and high oil prices drove the rebound in imports. In H1 of 2018, the value of imports grew by 7 percent, compared to the 10 percent decline a year earlier amid Rwanda's external adjustment. Imports of intermediate goods and energy grew the fastest, by 11.8 percent and 22.8 percent respectively. Imports of raw materials for industry went up by 13.6 percent and those for construction by 11.3 percent. Imports of food products fell by 0.7 percent, against the background of improve domestic food production, while imports of other consumer goods—the largest component of the import bill—increased by only 3.2 percent. Imports of capital goods rose only marginally, by 1.0 percent. The slow growth reflects a steep drop, in both value and volume terms, of transport equipment, which can be attributed to EAC harmonization valuation system for used cars.⁷

⁷ The valuation system includes standardized depreciation rates for all motor vehicles imported to the region that ranges from 20-80 per cent (which is five per cent lower than the current depreciation rate) depending on the age of the vehicle from the date of registration.

The exchange rate has held steady relatively stable the major external adjustments of 2015–17. In H1 of 2018, the Rwandan franc (Rwf) depreciated against the U.S. dollar by about 1.7 percent—quite modest compared to the pace of depreciation in 2015–16 when Rwanda was going through an external adjustment. Foreign exchange reserves held relatively steady at about US\$1.1 billion for the nine months to June 2018 (Figure 1.9), representing 4.0 months of import cover. The real effective exchange rate has also been relatively stable.

Figure 1.9: Gross international reserves and the exchange rate of Rwf against US dollar, 2015–18 (monthly)



Source: BNR, 2018a, 2018d

5. The fiscal deficit again expanded in FY2017/18, but the risk of debt stress is low

The fiscal deficit has been growing as a percent of GDP since FY2016/17, mainly because of net lending.⁸ Total revenues grew 12.5 percent in nominal terms, reaching 23 percent of GDP in FY2017/18,⁹ compared to 22.7 percent in 2016/17. Government expenditure and net lending totaled 27.7 percent of GDP, with another 0.3 percentage points of GDP allocated for clearing government payment arrears.¹⁰ Overall, the budget was executed with a deficit of 5 percent of GDP, exceeding the projected deficit by 0.9 percentage points and the fiscal deficit of the

previous fiscal year by 0.1 percentage points (Table 1.3). For the past two fiscal years, the expanded deficit has mainly been driven by net lending.

Revenues were slightly lower than expected in nominal terms. Based on a three-year strategic plan (2015/16–2017/18) the Rwanda Revenue Authority (RRA) undertook a series of tax policy and administrative changes intended to raise annual GDP by 0.3 percentage points by widening the tax base, improving VAT administration, and enhancing tax compliance (RRA, 2015). Although tax revenues reached 15.9 percent of GDP in FY2017/18, 0.4 percentage points higher than in FY2016/17, in nominal terms the target underperformed. Important measures to strengthen revenue collections were counterbalanced by Government's ambitious industrial policy and Made in Rwanda campaign that involves large incentives and tax expenditures. In 2017/18, nontax revenue was higher than expected as reimbursements from the UN for peace-keeping operations rose. Grants, which were over 9 percent of GDP four years ago, have halved in recent years to 4.5 percent of GDP (Table 1.3).

Revenue performance varied across tax category. Though taxes on goods and services, which contribute about 50 percent to total tax revenues, in FY2018 expanded by 13.1 percent, they fell slightly short of revised projections. This revenue category amounted to 7.8 percent of GDP, up from 7.6 percent in the previous fiscal year but still below the peak of 8.1 percent in FY2015/16. Excises performed worse than value-added tax because of lower-than-expected consumption of beverages (both alcoholic and non-alcoholic), petroleum products, lower usage of mobile airtime, and dilatory growth in non-EAC imports. The last factor also affected collection of taxes on international trade.

⁸ Definitions used in REU are based GFSM1986, which is the format Rwanda's still follow. The Government of Rwanda is making headway towards enhancing format of fiscal reporting via a transition to fiscal reporting according to the Government Finance Statistics Manual 2014 (GFSM 2014). As notes IMF (2018), the transition has been complex, therefore longer than expected. IMF and government are working closely to finalize implementation. It is expected that the budget execution report of FY2018/19 will follow the GFSM2014.

⁹ Rwanda's fiscal year is July 1 to June 30.

¹⁰ As of March 2018, arrears were an estimated 0.8 percent of GDP.

Direct taxes fared better than expected, primarily due to robust performance of the tax on corporate profits, which accounts for about 44 percent of direct taxes. Collection of profit taxes continued to

be buoyant, growing at 23.8 percent in FY2017/18 and reaching 3 percent of GDP.¹¹ The income tax grew at 9.3 percent in FY2017/18, exceeding the target by 0.4 percent to reach 3.6 percent of GDP.

Table 1.3: Rwanda's central government finances, FY 2015/16–2018/19
(Percent of GDP)

	FY2013/14	FY2014/15	FY2015/16	FY2016/17	FY2017/18			FY2018/19 budget
					Revised budget	Actuals	Execution rate	
Revenue and grants	25.8	25.0	24.4	22.7	22.8	23.0	100.0	22.4
Total revenue	16.6	17.7	18.4	18.0	18.4	18.5	99.2	18.0
Tax revenue	14.7	15.4	15.8	15.5	15.9	15.9	98.9	15.6
Direct taxes	6.0	6.6	6.4	6.6	6.7	6.8	100.8	6.7
Taxes on goods & services	7.6	7.6	8.1	7.6	7.7	7.8	99.8	7.6
Taxes on intern. trade	1.1	1.1	1.3	1.3	1.4	1.2	84.9	1.3
Non-tax revenue	1.9	2.3	2.6	2.5	2.6	2.6	101.3	2.3
Grants	9.1	7.3	5.9	4.6	4.3	4.5	103.3	4.4
Expenditure	29.7	29.9	27.5	27.3	26.6	27.7	102.9	27.0
Current expenditure	15.0	14.7	14.7	15.0	14.5	14.9	101.5	14.8
Wages and salaries	3.6	3.6	3.8	4.2	4.1	4.1	99.8	4.1
Purchases of goods and services	2.7	2.8	2.9	2.7	2.8	2.7	97.4	2.8
Interest payments	0.8	0.8	0.9	1.0	1.2	1.2	99.4	1.1
Transfers	5.5	5.4	4.9	4.9	4.9	4.6	93.4	4.8
Exceptional social expenditure	2.3	2.1	2.2	2.2	1.6	2.3	138.7	1.9
Capital expenditure	13.7	13.6	11.4	10.7	9.9	10.8	107.9	10.1
Domestic	6.2	6.9	7.1	5.9	6.1	5.9	95.2	5.7
Foreign	7.6	6.7	4.3	4.8	3.8	4.9	128.5	4.3
Net lending	1.0	1.6	1.4	1.6	2.2	2.0	89.9	2.1
Change in arrears (-: net reduction)	-0.3	0.1	-0.4	-0.3	-0.3	-0.3		-0.3
Primary deficit	-3.9	-4.1	-2.2	-3.6	-2.7	-3.5		-3.5
Fiscal deficit (cash basis)	-4.2	-4.8	-3.5	-4.9	-4.1	-5.0		-4.9
Financing	4.2	4.8	3.5	4.9	4.1	5.0		4.9
Foreign (net)	2.2	3.6	3.9	4.8	4.1	4.5		4.2
o/w Budgetary loans					2.7	2.7		2.8
Project loans					1.7	2.2		1.7
Domestic (Net, -: deposit build-up)	2.0	1.2	-0.3	0.0	0.0	0.5		0.7

Source: MINECOFIN data (Macro-framework Dataset, Budget Execution tables, & Budget Framework Paper).
Note: Table 1.3 is reported in Government Finance Statistics Manual (GFSM) 1986.

¹¹ Profit taxes comprise corporate income tax, personal income tax, and withholding tax.

Both recurrent and capital expenditures exceeded the revised 2017/18 budget. The execution rate was about 102.9 percent, with 101.5 percent in recurrent and 107.9 percent in capital spending. Due to additional requests for UN peace-keeping operations, exceptional expenditures have the highest budget overrun (138.7 percent of the revised budget), which drove the overspending in recurrent expenditure (Table 1.3). This was covered by increased reimbursements from the UN, which was reflected in nontax revenues. Capital expenditures were 7.9 percent higher than planned, mostly due to faster than expected implementation of foreign-financed projects, such as rural road and vocational training projects. Partially offsetting this was underspending of 4.8 percent in the domestically financed component of public investment.

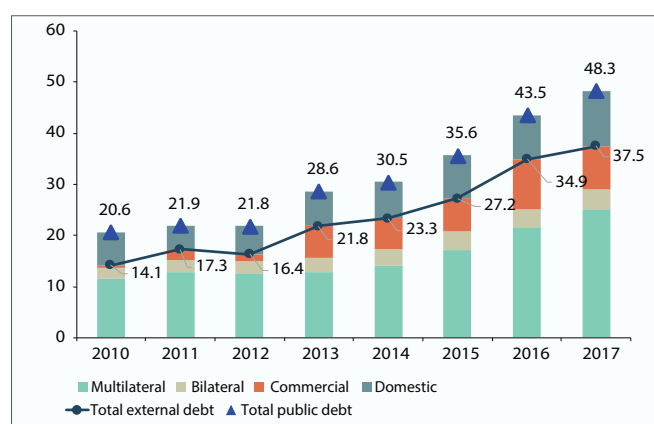
According to the 2018/19 budget law approved on June 30, 2018, both revenues and expenditures are expected to decline as a percent of GDP, leaving the deficit relatively unchanged. Tax and nontax revenues and external grants are expected to decline as a percent of GDP. Total expenditures are projected to decline by 0.7 percentage points of GDP driven by a combination of declining public investments and stable recurrent expenditures and net lending.

Rwanda's debt level has been rising since 2013. After the Heavily Indebted Poor Country and Multilateral Debt Relief Initiatives in 2005, Rwanda's debt level had remained stable at around 20 percent of GDP over the period of 2005-2012. Since 2013, there has been a sharp increase, with Rwanda's debt level more than doubling from 21.8 percent of GDP in 2012 to 48.3 percent of GDP in 2017 (Figure 1.10). External public and publicly guaranteed debt, including commercial loans and Eurobonds, contributed more than 80 percent of Rwanda's debt accumulation.

Higher primary deficits, government guarantees, and the real exchange depreciation are the main drivers of debt accumulation (Figure 1.11). Since 2012, Rwanda has seen a gradual increase in fiscal deficits going hand in hand with the decline in external grants. Fiscal deficits would have been higher without the decline in total fiscal spending that has taken place since 2012. This highlights the criticality of strengthening the revenue base over the long term for maintaining public services and for ensuring manageable risk of debt distress.

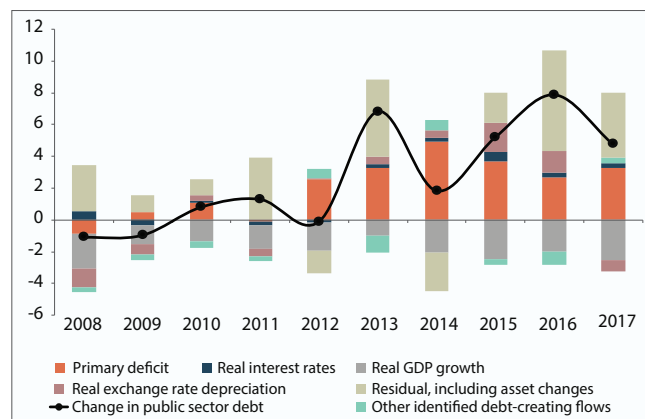
Risk of debt distress remains low. The 2018 joint IMF-World Bank debt sustainability analysis (DSA) assessed Rwanda as having a low risk of debt distress (IMF, 2018). The large repayment of Eurobonds in 2023

Figure 1.10: Rwanda's public and publicly guaranteed debt (Percent of GDP)



Source: MINECOFIN and DSA data.

Figure 1.11. Drivers of Rwanda's public and publicly guaranteed debt (Percent)



Source: MINECOFIN and DSA data

Note: Government guarantees are reflected in "residual, including asset changes"

results in a breach of conventional thresholds for debt repayment capacity (debt service-to-exports and debt service-to-revenue ratios) in DSA simulations. Although the breach appears to be temporary and manageable, it highlights the importance of strengthening Rwanda's fiscal and external buffers while growth momentum is strong.

6. Rwanda's macroeconomic outlook remains favorable with some downside risks

In the medium term, Rwanda's macroeconomic outlook is favorable, with GDP growth projected at 7 to 8 percent. This is in line with the projections of REU-12. Increased output is expected to be driven by higher agricultural yields, strong exports, and large infrastructure projects, such as the new airport currently being constructed. Mining sector is expected to remain relatively strong, although another major expansion like the one in 2017 is not expected. With a low inflation and a favorable external environment, monetary policy is expected to remain accommodative. Stronger portfolios are expected to allow banks to reverse the slow credit growth of the past two years and further support economic growth. Heightened demand for imports is expected to elevate the current account deficit, but it

is not expected to go significantly beyond 9 percent of GDP.

Rwanda's economic outlook is vulnerable to the weather. Agriculture production depends heavily on weather conditions as it became clear during droughts in 2016 and 2017. Droughts not only undermine the country's growth prospects but also are a major threat to poverty reduction as they push up food price inflation and reduce access of the poor to food. Floods pose another major risk.

The growth is also threatened by uncertainty in the global economy. Although global growth is currently strong, concerns are rising about the implications of tightening financing conditions for emerging economies, softening metal prices due to weaker demand from China, and escalating trade tensions. Rising oil prices may erode the gains Rwanda's main export products recorded in H1 of 2018.

The lack of private sector responsiveness to the improved business environment remains one of the long-term concerns. A vibrant, competitive, and innovation-driven private sector is seen as the engine of Rwanda's future growth. Government has

Table 1.4: Rwanda's medium-term macroeconomic projections
(Percent)

	2014	2015	2016	2017	2018 f	2019 f	2020 f
Real GDP growth, at constant market prices	7.6	8.9	6.0	6.1	7.2	7.8	8.0
Private consumption	7.8	18.2	-0.5	1.6	4.1	5.0	5.0
Private consumption	33.9	3.3	9.5	6.9	7.3	4.7	-3.2
Gross fixed capital investment	1.0	21.1	10.5	8.8	16.1	15.2	17.2
Exports, goods and services	7.2	6.3	12.9	33.6	14.3	13.5	14.8
Imports, goods and services	14.5	34.7	-1.1	10.1	10.8	9.5	8.8
Real GDP growth, at constant factor prices	7.6	8.5	6.1	6.8	7.2	7.8	8.0
Agriculture	6.7	5.0	3.9	6.6	6.0	5.3	5.0
Industry	11.0	8.9	6.7	4.2	8.2	10.1	12.0
Services	7.0	10.4	7.2	7.9	7.5	8.4	8.2
Inflation (consumer price index, annual average)	1.8	2.5	5.7	4.8	2.8	5.0	5.0
Current account balance (% of GDP)	-12.1	-14.7	-16.0	-6.8	-8.8	-9.1	-8.5

Sources: World Bank, *Macroeconomics and Fiscal Management Global Practice*, and *Poverty Global Practice*.
Notes: f = forecast. Forecasts are based on data available in August 2018.

continued the reforms as evidenced by Rwanda's rapidly improved ranking in the Ease of Doing of Business Index (Box 1.3). Nevertheless, this has not yielded the commensurate investment from the private sector. Rwanda's government-led economic model has relied heavily on public investments

funded by foreign savings. If Rwanda is to sustain high growth and become an upper-middle-income country by 2035, as envisaged in the Vision 2050, the private sector needs to scale up investments in productive tradable sectors—a move that will also require higher domestic savings.

Box 1.3: Doing business and Rwanda's private sector

Rwanda has made big strides in improving its business climate. Under the new standardized methodology¹², Rwanda ranks at 29 out of 190 in Doing Business 2019, the only low-income countries of the top 50 economies. In SSA, Rwanda ranks 2nd only after Mauritius (20). Since 2007, Rwanda has undertaken 58 regulatory reforms of which 53 reforms made it easier to do business (Box Table 1). Rwanda also ranks at 57 out of 160 in the World Bank's Logistics Performance Index¹³ 2018, being 3rd in SSA after South Africa (33) and Cote d'Ivoire (50).

Yet, the private sector responsiveness to the improved business climate has been relatively weak. Rwanda's Vision 2020 states "the emergence of a viable private sector that can take over as the principal growth engine of the economy is absolutely key." As Rwanda's economy develops and matures, the need for the private sector to play a leading role in achieving the rapid growth required to reach Rwanda's ambitious income aspirations only increases.

Access to finance, skills and the cost of energy are among the cross-cutting challenges to the private sector in Rwanda. High costs that undermine competitiveness of the private sector stem mainly from limited access to credit, high cost of energy generation and inadequate skills. Further strengthening market institutions is also critical for empowering the private sector to play a bigger role in investments, growth and job creation.

Box Table 1: Rwanda performs well on global business climate indicators

Indicators	DB 2019 rank	DB 2019 score	DB 2016 score	Changes in score
Registering Property	2	93.70	87.75	5.95
Getting Credit	3	95.00	90.00	5.00
Protecting Minority Investors	14	76.67	58.33	18.34
Paying Taxes	35	84.55	77.03	7.52
Starting a Business	51	91.39	82.92	8.47
Resolving Insolvency	58	57.20	47.82	9.38
Getting Electricity	68	78.72	60.04	18.68
Enforcing Contracts	78	59.54	53.06	6.48
Trading Across Borders	88	74.98	61.15	13.83
Dealing with Construction Permits	106	67.01	66.25	0.76
Overall	29	77.88	68.44	9.44

Sources: World Bank, Macroeconomics and Fiscal Management Global Practice, and Poverty Global Practice.

Notes: f = forecast. Forecasts are based on data available in August 2018.

¹² <http://www.doingbusiness.org/en/methodology>

¹³ The logistics performance index is the weighted average of the country scores on the six key dimensions: 1) Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs; 2) Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology); 3) Ease of arranging competitively priced shipments; 4) Competence and quality of logistics services (e.g., transport operators, customs brokers); 5) Ability to track and trace consignments; and 6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time. <https://lpi.worldbank.org/>

Low quality of human capital constitutes another concern for long-term growth. The government's aspirations to reach upper-middle-income status by 2035 will require dramatic improvements in human capital. Rwanda has made great achievements in health and education indicators, including reducing child and maternal mortality, reducing fertility rate, increasing primary school enrollment and gender parity. As reflected in the recently released human capital index (HCI), Rwanda – along with other countries – faces an array of several challenges. Rwanda scores 0.37 in HCI, which is one the lowest in the region. Among main challenges in human capital is the high level of stunting (discussed in the special topic of REU-12), low completion rates and learning outcomes, quality of teaching, and limited access to quality early childhood development services. In this

context, the special topic of REU-13 (current issue) discusses the criticality of human capital for Rwanda's development ambitions focusing on the challenges and the reform agenda in basic education.

In addition to the vibrant private sector and human capital, the Future Drivers of Growth study, which was jointly prepared by the Government of Rwanda and the World Bank, identifies other crucial reform areas for Rwanda's growth agenda. The report identifies four essential drivers of growth—innovation, integration, agglomeration, and competition—that will need to be supported by reforms in six high-priority areas: human capital, trade and regional integration, agriculture, competitive domestic enterprises, urbanization, and institutions (see Box 1.4).

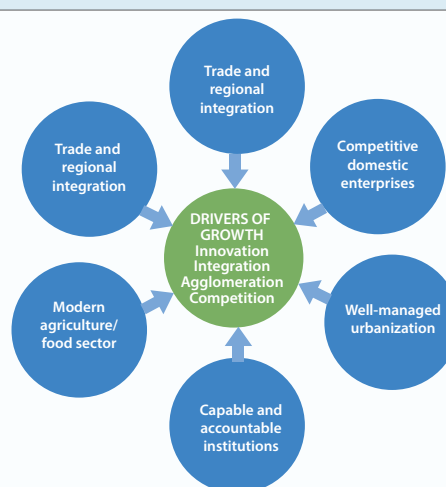
Box 1.4: Future Drivers of Growth in Rwanda: Innovation, Integration, Agglomeration, and Competition

In November 2018, the government of Rwanda and the World Bank Group launched a joint report “Future Drivers of Growth in Rwanda: Innovation, Integration, Agglomeration, and Competition”. The agreements of the joint report emanated from a March 2017 agreement between President Paul Kagame of Rwanda and Jim Yong Kim, President of the World Bank Group to provide important analytical inputs for Rwanda's Vision 2050. The report identifies four essential drivers of growth—innovation, integration, agglomeration, and competition—that would lay out path for Rwanda to upper-middle-income status by 2035 and high-income status by 2050.

Emerging from the devastation of the 1994 genocide, which itself followed three decades of economic stagnation, the country has seen its average income rise three-and-a-half-fold since. This rapid progress was made possible by the second-fastest growth of gross domestic product (GDP) per capita on the continent, sustained over two decades.

The identified four essential drivers of growth—innovation, integration, agglomeration, and competition—would necessitate boost from reforms in six high-priority areas: human capital, trade and regional integration, agriculture, competitive domestic enterprises, urbanization, and institutions.

Sources: World Bank.



PART TWO

SCHOOLING FOR LEARNING: STRENGTHENING RESILIENCE OF EDUCATION IN RWANDA



Summary

Rwanda aspires to be an upper middle-income country by 2035—an ambitious goal that will require continued dramatic improvements in basic education. Low-income countries that have achieved such a lofty goal share a common thread in their diverse development strategies: sustained investment over many decades to universalize basic education, with an initial focus on equipping all children with basic competencies in language, mathematics and science, and progressively aiming higher, for later cohorts to attain internationally competitive levels of learning. How Rwanda can build a similarly solid foundation to keep its economy growing rapidly over the next several decades is the focus of this note.

Rwanda has a functioning basic education system that must now aim higher, toward delivering schooling for learning.¹⁴ Realizing the desired result requires policies and programs that enable, encourage and sustain perseverance of effort by teachers and their managers, as well as by students and their parents. It also requires tackling some of the fundamental impediments to system performance: insufficient coordination on strategic actions for basic education, institutional inertia hampering initiative and innovation in the education system; gaps in the management of material and human resources, especially teachers and their instructional mentors; inadequate technical capacity; and patchy participation in the time-absorbing process of learning-by-doing for continuous improvement throughout the system. Fortunately, these challenges are not insurmountable. Two World Bank publications in 2018 highlight specific recommendations for action.¹⁵ For Rwanda, these implications suggest four priorities for action:

1. **Intensify efforts to improve early grade progression and foundational competencies.** Rwanda could aim explicitly to ensure that all children attend school regularly and progress from 1st grade to 4th grade without repeating, that completers of 2nd grade are orally fluent in Kinyarwanda and that completers of 4th grade are able to read with comprehension. Practical steps for implementation include: expanding access to pre-school, including better nutrition to reduce pervasive stunting among young children; tightening school- and district-level management of the early grade; capping class size at no more than 50 students per class by hiring new staff, and expanding affordable, proven models of early grade instruction.
2. **Remove two key impediments to learning and school continuation in basic education.** The first pertains to the language of instruction (LOI) which switches, under current policy, from Kinyarwanda to English from Grade 4 onward. Because of teachers' limited grasp of English, a more pragmatic and effective approach is to delay the transition to English, to Grade 5 or even Grade 6, while taking steps to create conditions for a successful switch in each school (e.g., through targeted teacher training packaged with remedial teaching, and well-sequenced textbooks and materials). The second impediment relates to costs and poor quality of services—the main reasons for the 18-percentage point dropout in the transition between primary and lower secondary schooling. Promising policy responses include: locating schools closer to rural habitations; pro-poor conditional cash transfers and related publicity campaigns on the benefits of schooling. Looking ahead, Rwanda may also consider: using technology to enable cost-effective teaching of

¹⁴ For key characteristics of the education system in Rwanda today see Govt. of Rwanda (2017).

¹⁵ Bashir *et al.* 2018; and World Bank 2018. The former offers an in-depth comparative perspective to frame Rwanda's reform agenda, highlighting experience elsewhere, particularly in Africa; the latter contextualizes this agenda in light of the country's long-term goals.

lower secondary mathematics and science and abolishing end-of-cycle examinations at Grade 6 as a structural impediment to school continuation.

3. ***Strengthen the professionalism of teachers, instructional leaders and their managers.***

Ample research findings from Sub-Saharan African countries suggest the following possible approaches to increase the competence of Rwanda's teacher workforce: (a) for serving teachers, provide structured teacher guides and competency-based training options, along with career progression pathways; (b) for low-performing teachers, offer options for improvement and exits for those falling short of minimum professional standards; (c) for prospective teachers, provide pre-service training aligned to the national curricula and priorities for student learning; and (d) for school directors and instructional leaders, strengthen career incentives and specific training for their role as managers, mentors and coaches of teachers. Other aspects of teacher management also require attention, notably: minimum qualifications for recruitment; teacher workload and staffing norms; and pay structure and pathways for career progression.

4. ***Increase public spending on schooling for learning and strengthen implementation capacity.***

Rwanda needs to spend more on basic education. An important priority is to ensure that all schools possess minimally conducive conditions for teaching and learning, based on an agreed package of these conditions. More resources will also be needed to cope with a significant projected increase in lower secondary enrollments in the coming years. Ensuring that resources do indeed reach schools will require better procurement and financial management at all levels of oversight. In core areas of education administration, MINEDUC's own technical capacity must grow to tackle its increasingly complex mandate. Measuring and

monitoring school progression and learning outcomes, especially through participation in regional or international studies, is essential for greater accountability throughout the system, based on objective benchmarks for results.

The discussion below presents the case for the foregoing recommended priorities. It contains two broad sections: the first, a succinct diagnostic summary of the current status of basic education in Rwanda; and the second, specific actions to steer the system in the desired direction.

1. **Status of schooling and learning in Rwanda**

Rwanda's education system has recovered remarkably from the 1994 genocide, a disaster that had left its schools destroyed, damaged or looted, and teachers and students traumatized if not killed. In the aftermath of the calamity, the system had to be "restarted from zero" (Cantwell 1997). Classrooms and entire schools had to be rebuilt, rehabilitated and refurbished; parents persuaded to return their children to school, and new teachers and other personnel recruited to replace those who fled or died (Obura 2003). The content of schooling had to be redefined for a new Rwanda, the work of teachers re-oriented accordingly, and the management of the system re-organized and re-established. Much progress has been achieved in the quarter century since 1994. The stock of functioning schools and classroom has increased in tandem with the increase in population; the curriculum has benefited from several rounds of revisions; and a system for recruiting and training teachers, staffing schools, and managing the teacher workforce is now in place. Rwanda has also institutionalized the process for reviewing and preparing policies and investment plans, for aligning donor financing for education, and for routine reporting of selected indicators of progress.

Sustained increases in incomes in post-genocide Rwanda provide a favorable context for continued development of the education system. The real per capita GDP had stagnated at less than \$430 for nearly a decade before the genocide but had climbed rapidly after 1994, surpassing the highest pre-genocide level by 2005 and more than doubling the 1998 level by 2015. The country has clearly been making extraordinary efforts to build a broad-based education system as its economic conditions improved. Enrollments in primary education grew rapidly, at a slightly faster pace than in the pre-genocide years. By 2002, the number of primary school children had swollen to 1.5 million, about 50 percent more than in 1992, the last year before the genocide for which enrolment data are available; and it grew further to some 2.4 million by 2012, an increase of nearly 60 percent in just 10 years.

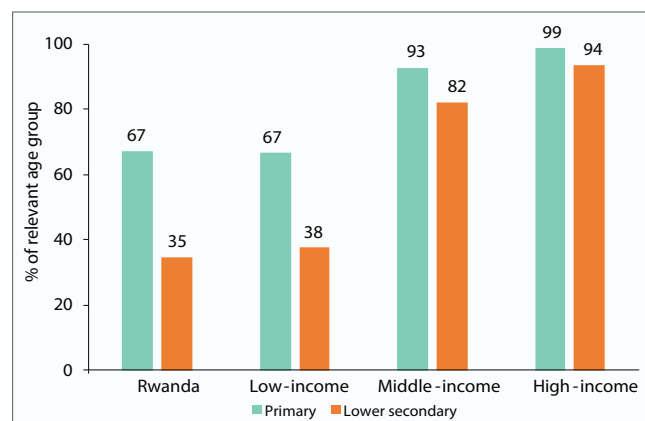
1.1. Coverage of basic education in comparative perspective

Based on gains in coverage and completion rates in primary education between 2000–2013, Rwanda today is in the second most advanced of four groups of sub-Saharan African countries. The four groups are defined according to three coverage-related indicators (see Box 2.1). The country grouping differentiates countries with “Established” systems, the top group, in which enrollments have stabilized in relation to the relevant school-age population, with only a modest share of this population still out of school, from those that lag behind to varying degrees (Box Figure 1). That Rwanda is in the second group—with an “Emerging” system—speaks favorably of the impressive gains in expanding basic education coverage despite its daunting challenges since the mid-nineties. Compared with its peers in the “Emerging” group, Rwanda has a gross enrollment ratio (GER) among the highest in the group—about 138 percent in 2013 (Box Figure 2). Its exceptionally high GER ratio is characteristic of countries with a

recent history of rapid expansion of coverage. Its out-of-school rate of 13.5 percent in 2013 had declined to just 4.1 percent in 2016.¹⁶

Yet, comparisons with middle and high-income countries whose ranks Rwanda aspires to join reveal the magnitude of the country’s unfinished agenda for coverage in basic education. Primary and lower secondary school completion rates are comparable to levels in other low-income countries but fall far short of the rates in middle- and high-income countries (Figure 2.1). The comparisons put in perspective the long the long ahead of Rwanda, especially in lower secondary education.

Figure 2.1: School completion rates in Rwanda compared with group averages for countries by income, 2016



Source: Data from World Development Indicators, 2017 (accessed at <http://wdi.worldbank.org/table/2.10#>)

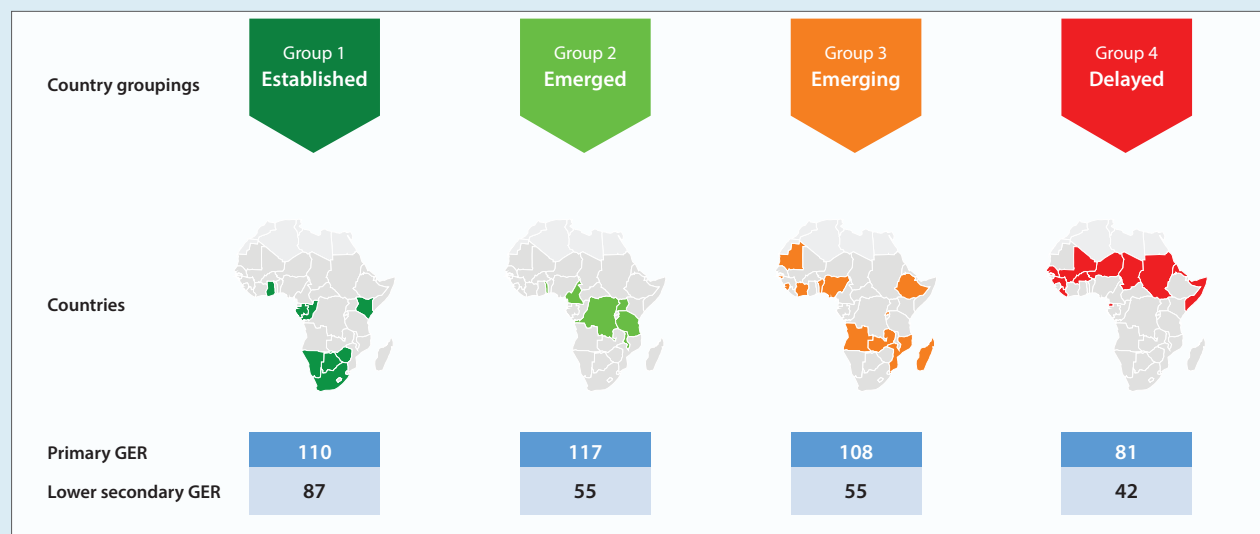
That Rwanda can aim higher to universalize basic education—which is compulsory in the country—is suggested by the experience of other sub-Saharan African countries. Bashir *et al.* (2018) provide comparative evidence, based on analysis of the latest available World Bank Living Standards Measurement Survey, that show relatively high rates of entry to first grade in Rwanda, with adjusted net intake rates in Grade 1 estimated at 89 percent. Progression in subsequent grades paint a direr picture, however: only 68 percent of each cohort of Grade 1 entrants eventually reach Grade 6, and 38 percent, Grade 9 (Figure 2.2). These patterns lag behind other countries,

¹⁶ The out-of-school rate for 2016 is from United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics (UIS) database, accessed 2 September 2018 at <http://data.uis.unesco.org>.

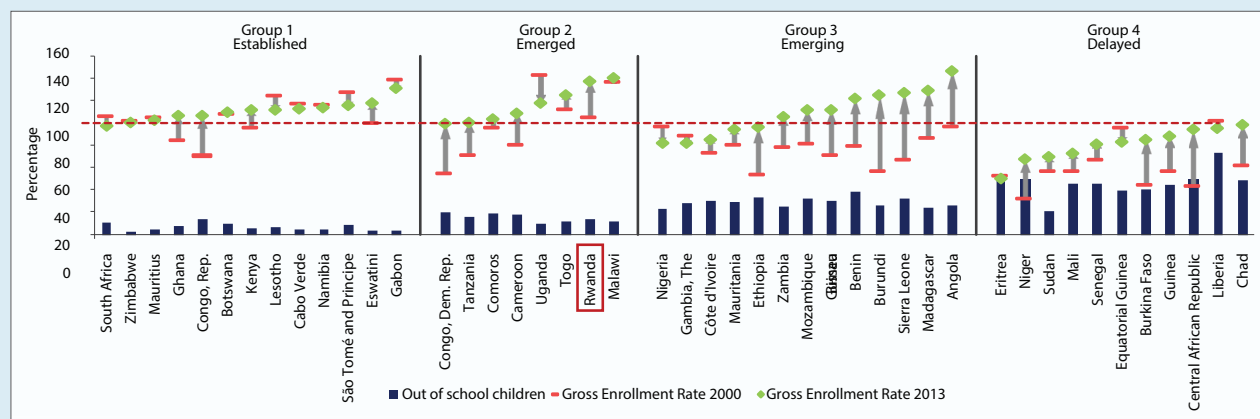
Box 2.1: Access to primary education in Rwanda and other Sub-Saharan countries, 2000-2013

Sub-Saharan African countries have followed divergent paths of educational expansion. Bashir *et al.* (2018) identifies four groups based on the primary GER in 2000 and 2013, the share of out-of-school children, and the retention rate (the latter two indicators for the latest available year). Rwanda is in the “Emerged” group, based on cutoff levels for these indicators (Box Figure 1).^{a/} Variation exists across countries in each group (Box Figure 2).

Box Figure 1: Gross enrollment ratios in four groups of Sub-Saharan African countries



Box Figure 2: Variation in indicators of access to primary education within each country group

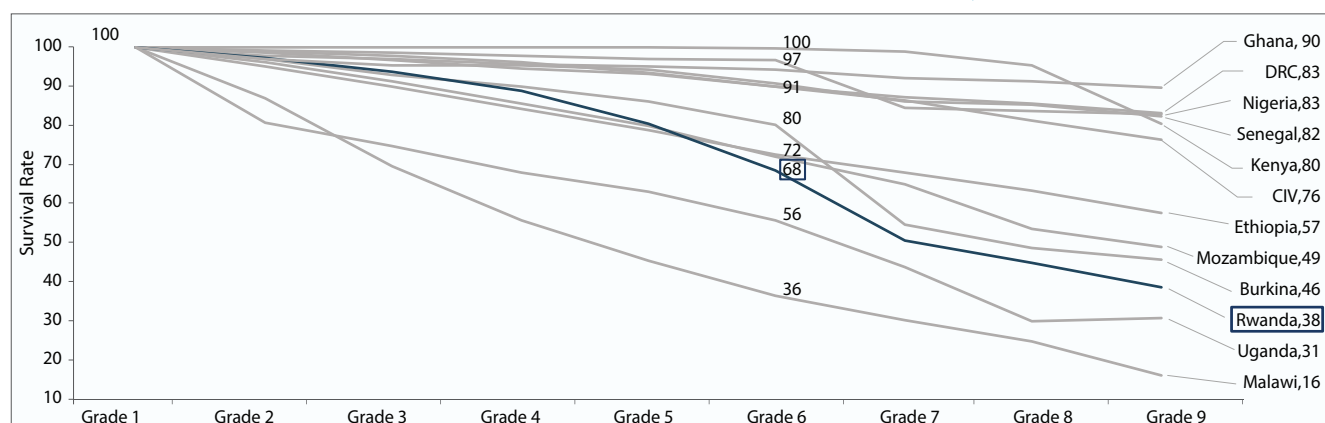


Source: Bashir *et al.* 2018.

^{a/} For simplicity, the Figure omits data on the retention rate which is part of the criteria for determining country group membership; those data are in chapter 1 of Bashir *et al.* 2018. Below are the cutoff thresholds for these indicators:

Four country groups:	Gross enrollment rate (%)		Out-of-school rate (%)	Retention rate (%)
	2000	2013		
1. Established	≥ 90	~ 100	≤ 20	~ 100
2. Emerged	≥ 90	≥ 90	≤ 20	≤ 80
3. Emerging	≤ 90	≥ 90	≥ 20	≤ 80
4. Delayed	≤ 90	≤ 90	≥ 20	≤ 80

Figure 2.2: School survival rates in Rwanda and other Sub-Saharan Countries, latest available year



Source: Bashir et al. 2018.

Note: estimates are based on microdata from the World Bank's most recent Living Standards Measurement Study.

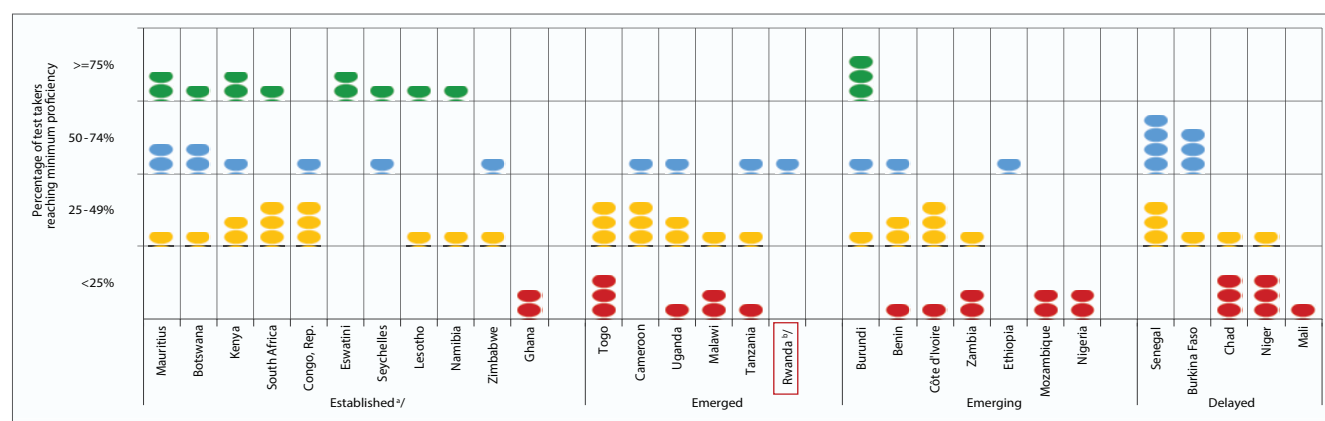
not only those in the “Established” group (e.g., Ghana and Kenya), but also those in the “Emerging” group (Nigeria and the Democratic Republic of Congo).

1.2. Learning levels

Rwanda has not participated in the learning assessments that many other Sub-Saharan countries take part in. Fragmentary evidence suggests that its children are probably learning too little. Figure 2.3 summarizes learning assessment results from international and regional assessments across sub-Saharan African countries. Countries in the leading “Established” group tend to perform better

with a greater frequency of tests in which more than 75 percent of the test-takers attain minimum levels of proficiency.¹⁷ The Figure includes Rwanda, based on the performance of 4th and 6th graders on a national test in 2011 which included items from the Early Grade Reading Assessment (EGRA) tests administered in other sub-Saharan African countries. Rwanda shows up as a country where 50-75 percent of 4th and 6th graders scored above the minimum proficiency level.¹⁸ This rosy picture turns dismal, however, when one considers that the minimum level is any score above zero and that the test comprises EGRA items calibrated for expected learning targets for 2nd and 3rd graders.

Figure 2.3: Too few students in Rwanda and other Sub-Saharan countries attain minimum learning levels



Source: Bashir et al. 2018.

Note: each of the 96 dots in the Figure represents an international or regional assessment in Reading, Mathematics, and Science, from early grade to lower secondary, and adult literacy; its color denotes the indicated share of test-takers attaining minimum proficiency on the assessment; see appendix table A1 for the assessments used to generate the data for this Figure.

¹⁷ Box 2.1 explains the basis for classifying countries in the “Established,” “Emerged,” “Emerging” or “Delayed” country group;

¹⁸ Rwanda's data show 4th and 6th graders' performance on an Early Grade Reading Assessment (EGRA) test designed for 2nd and 3rd graders' expected level of learning.

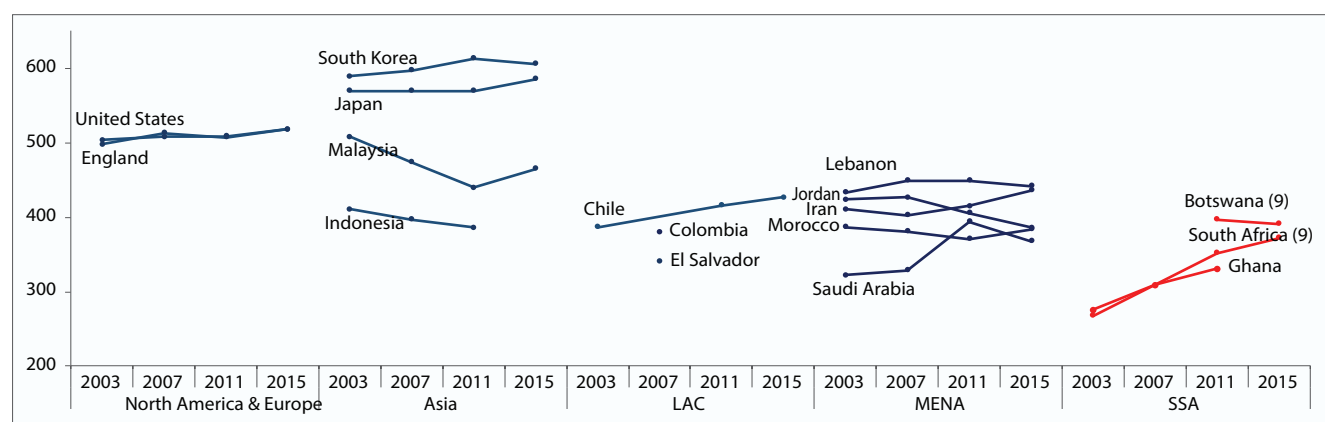
¹⁷ See appendix table A1 for a list of international and regional assessments in which Sub-Saharan African countries have been participating, and definitions and examples of minimum learning proficiency levels.

¹⁸ DeStefano et al. 2012.

Rwanda's own national tests reveal a very low level of learning among primary school students. The 2011 study cited above shows that only about 30 percent of 4th graders tested and less than 50 percent of 6th graders could read with comprehension a grade 2 level text; and that fully two-thirds of the 6th graders could not answer a single comprehension question in English, the language of instruction at their grade level. A 2014 Learning Achievement in Rwandan Schools (LARS) II study of primary pupils shows a consistent finding of low learning achievement: among the 2nd graders tested, only 45 percent met the grade level expectations in Kinyarwanda, and the average score for mathematics was only 33 percent; among 5th graders, only 45 percent met the grade level expectations for English, and the average score for mathematics was only 38 percent.¹⁹ These modest levels of learning are not unique to Rwanda. The Service Delivery Indicators (SDI) survey for Kenya, Tanzania, Togo, Uganda, Mozambique, Nigeria and Senegal, for example, reveal that at the end of 4th grade, less than 30 percent of the children tested could read a paragraph, except in Tanzanian where nearly 75 percent of children tested in Kiswahili, the local language of instruction, could do so.²⁰

In Rwanda, as in most of Sub-Saharan Africa, secondary students' learning outcomes have not been systematically and widely documented; comparative data exist for only four countries from the region. The four countries, all in the "Established" group, include: Mauritius, which participated in the 2009 Programme for the International Student Assessment (PISA plus) study; and Botswana, Ghana, and South Africa, which have taken part, since 2003, in the Trends in International Mathematics and Science Survey (TIMSS). Over time, TIMSS scores have declined slightly in Botswana, the country with the highest average score of the three countries and risen steadily in Ghana and South Africa to the level in Botswana (Figure 2.4). Globally, however, the three countries have among the lowest TIMSS scores, with none having an average score above 400, the low international benchmark.²¹ If the results for these "Established" group countries are modest, Rwanda's performance is also likely to be modest—especially because the foundations in primary education are weak.

Figure 2.4: Mathematics scores of 8th graders in Sub-Saharan Africa's "Established" countries lag behind those of their peers' elsewhere in the world



Source: Bashir et al. 2018.

Note: test-takers in Botswana and South Africa were 9th graders, as denoted by the number in parentheses.

¹⁹ ECD 2016, cited in Honeyman 2017.

²⁰ See Appendix Figure A1 for the data on learning outcomes in countries that participated in the SDI survey. Differences in the tests makes it difficult to compare learning levels in Rwanda to those in the SDI countries.

²¹ The low international benchmark of 400 for 8th grade mathematics maps to a low level of learning of the subject, one where student have some basic mathematical knowledge, can add and subtract whole numbers, and recognize parallel and perpendicular lines and familiar geometric shapes.

1.3. Disparities in basic education in Rwanda

Access to primary education is largely comparable by gender, income and place of residence but widens considerably in lower secondary education, especially by income and urban-rural residence.

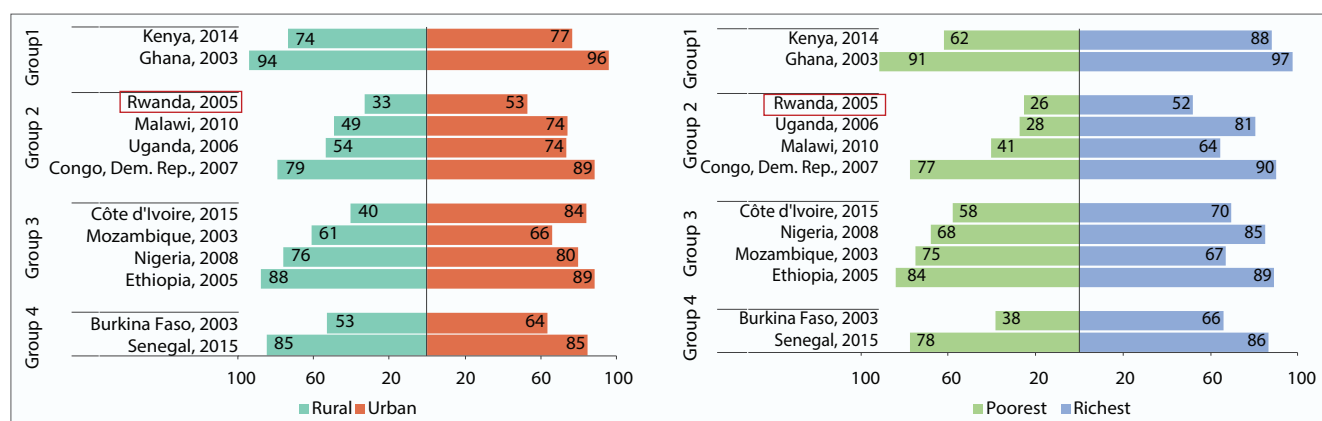
Rwanda stands out for achieving gender equality in access to both primary and lower secondary education in a region where bias favoring boys is common. There are, however, large rural versus rural gap: in lower secondary education: survey data for 2005—the latest available at this writing—show the gross enrollment ratio for this level at 82 percent in urban areas, compared with only 44 percent in rural areas. Differences in transition rates between primary and lower secondary education reveal equally wide gaps: 53 percent in urban areas, compared with 33 percent in rural areas; and 52 percent among the richest quintile, completed with just 26 percent in the poorest (Figure 2.5). As more recent survey data become available, it is critical to monitor trends in these gaps.²²

1.4. Building Rwanda's human capital base

Rwanda's basic education system is entering a new phase of development requiring a clear progression of focus from recovery and expansion to gains in completion rates and learning outcomes. Accelerating this progression in attention

would help Rwanda build the kind of workforce needed to attain the country's ambition for socio-economic transformation: rapid growth, good jobs, high incomes and shared prosperity. This shift has begun but it needs a boost from concentrated effort in several policy areas: (i) tackling the unfinished agenda of universalizing basic education with quality; (ii) ensuring effective management and support of teachers (iii) increasing financing of education and focusing spending and budget processes on improving quality and (iv) closing the institutional capacity gap.²³ While listed as separate domains for analysis and programming, policy coherence in the four areas is critical for success. An important reason is that the challenges are often intertwined, and solutions have spillover impacts. Low learning levels, especially in early grades, for example, may partly explain why students drop out of school prematurely. Improving learning is thus desirable not only for its own sake but also for its potential impact on school retention, and efforts to do so should be monitored accordingly. Looking forward, basic education in Rwanda is now entering a new stage of maturity, one in which learning outcomes is becoming as central as it is inseparable from the goal of universalizing nine years of schooling for all children, which is mandated under the law.

Figure 2.5: Transition rates between primary and lower secondary education by location and income group, Rwanda and other Sub-Saharan African countries



Source: based on latest available household survey data, as cited in Bashir et al. 2018.

Note: the numbers 1 to 4 on the left side of each panel denote the four country groups explained in Box 2.1 above; the numbers at the end of each bar, the transition rate between primary and lower secondary schooling, computed as the ratio of non-repeaters in the first grade | lower secondary education to non-repeaters in the last grade of primary education.

²² Data on learning gaps among Rwanda's primary and lower secondary students are unavailable as of this writing.

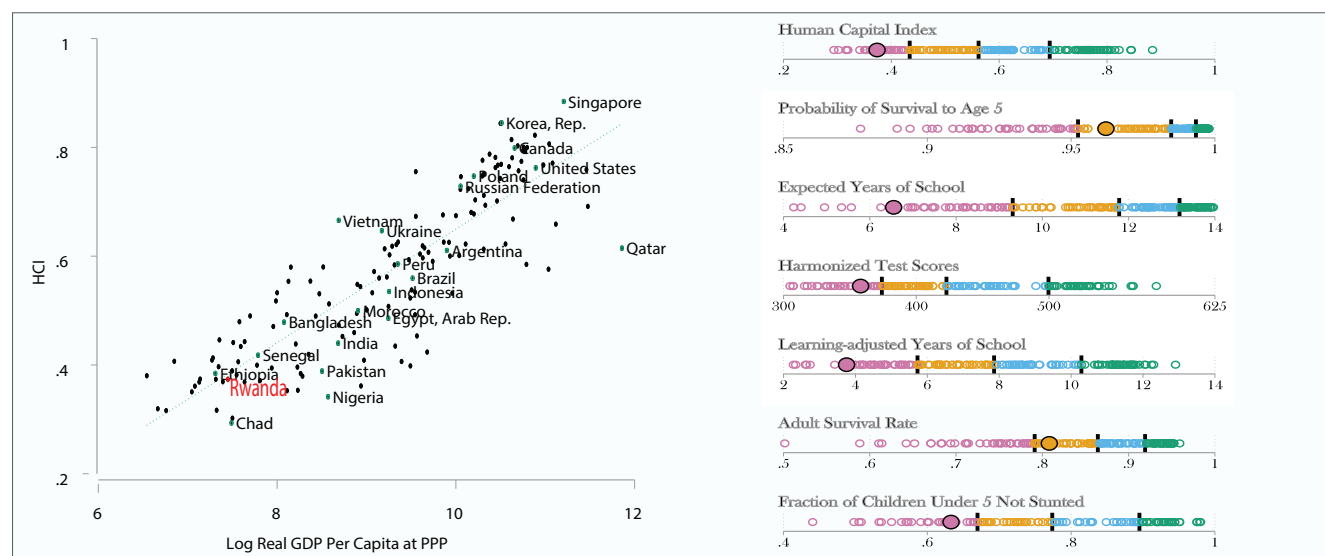
²³ Bashir et al. 2018.

The World Bank's newly-launched Human Capital Project (HCP) provides a comparative perspective that reinforces Rwanda's need to prioritize investment in basic schooling for learning.²⁴ The Human Capital Index (HCI)—developed as part of the HCP—measures for 157 countries the amount of human capital that “a child born today can expect to attain by age 18 ... [and thus] conveys the productivity of the next generation of workers compared to a benchmark of complete education and full health.” While Rwanda's overall HCI in 2017 is lower than the average for Sub-Saharan Africa, it is broadly in line with expectations for a country at its income level (Figure 2.6, panel a). Detailed information on the underlying components show, however, that the education-related indicators—especially expected years of school and learning-adjusted years of school—situate the country among the bottom 25 percent of countries globally (Figure 2.6, panel b). Children in Rwanda can expect to complete 6.5 years of pre-primary and basic education by age 18. However, when adjusted for learning, this

translates to only about 3.8 years, implying a learning gap of 2.7 years.

Noteworthy is that the HCI also highlights the high prevalence of stunting, a problem with well-known adverse consequences on the cognitive development of young children and their subsequent progress at school.²⁵ About 38 percent of Rwandan children under the age of five are stunted; the share rises to 50 percent among children in the poorest households and is surprisingly high at 25 percent among children from the top two wealthiest quintiles—a signal of its pervasiveness (World Bank 2018b). Causes include inadequate quantity and quality of food, frequent illnesses, poor maternal and child care practices, substandard access to health services and weather shocks that reduce the reliability of access to food. The government of Rwanda is taking major steps to turn the tide on stunting, by prioritizing food security, nutrition and early childhood development as foundational

Figure 2.6: Rwanda's human capital index and underlying components in comparative perspective, 2017



Source: World Bank 2018a, accessed 10/16/2018 at http://databank.worldbank.org/data/download/hci/HCI_2pager_RWA.pdf
a. Large circles denote Rwanda, small ones, other countries; thick vertical lines and color of circles denote quartiles of the distribution.

²⁴ Launched in October 2018, the World Bank's HCP seeks to raise awareness and increase demand for interventions to build human capital, with the aim of accelerating better and more investments in people. The Project has three elements (i) the Human Capital Index, (ii) a program to strengthen research and measurement on human capital; and (iii) support to countries that wished to speed up progress in raising human capital outcomes. For information on the HCP see www.worldbank.org/humancapitalproject.

²⁵ The previous Rwanda Economic Update documented the problem of stunting in detail. It laid the basis for the World Bank financed Rwanda Stunting Prevention and Reduction Project which was approved in early 2018 (details on the project may be found at: <http://projects.worldbank.org/P164845?lang=en>). The project is part of a multi-sectoral stunting reduction program, involving three projects totaling \$184 million (in nutrition, social protection, and agriculture) supported under a partnership between the Government of Rwanda and the World Bank, the Power of Nutrition, the Global Financing Facility and the Global Agriculture and Food Security Program.

issues in the National Strategy for Transformation and Prosperity (2017-2024). It has set a bold target for all districts to reach a 19% stunting rate by 2024, in line with the country's 2018-2024 Health Strategic Plan. A National Early Childhood Development Coordination Program was recently established under the leadership of the Prime Minister to ensure high-level coordination.

2. Achieving schooling for learning in Rwanda

Universalizing basic education with quality presents an enormous agenda for investment and policy reform. Priorities must, therefore, be established. These can be distilled by taking account of lessons from cross-country experience in SSA, and putting Rwanda's situation in comparative perspective, as was done in Facing Forward.²⁶ In the country's specific context, the following priorities warrant consideration:

- *Intensify efforts to improve **early grade progression and foundational literacy and numeracy** among 1st to 4th graders, complemented by investments to reduce stunting and support for early childhood development.*
- *Remove key impediments to learning and school continuation in basic education, by delaying to grade five, or even to grade six, the transition to English as the **language of instruction**, and by reducing the cost of schooling and the **quality of education services**.*
- *Strengthen the **professionalism** of teachers, instructional leaders and managers at all levels by enhancing teacher competence through training, ongoing support, and better-aligned incentives for teachers and their managers.*
- *Increase **public spending** on basic education and strengthen **implementation capacity**, by mobilizing and deploying the resources required to expand coverage with quality, and deepening MINEDUC's technical and operational capabilities in key areas.*

2.1 Improving early grade progression and foundational literacy and numeracy

Rwanda needs to ensure that 90-95 percent of its children attend school regularly and progress from grade one to grade four without repeating and that completers of grade two acquire oral fluency in Kinyarwanda, and completers of grade four, the ability to read with comprehension. Swollen enrollments in grade one relative to those in subsequent grades characterize Rwanda's basic education system, a feature it shares with other SSA countries. This "early-grade bulge" stems from the presence of overage and underage children in grade one, inconsistent school attendance, frequent repetition, and high dropout rates between grades one and two. However, the persistence of the bulge over decades—in Rwanda as in some other SSA countries—reflect an underlying dynamic of children stumbling in the early grades, attending school irregularly, repeating grades more frequently than official data suggest, and eventually leaving school with few cognitive skills.

That too many of Rwanda's youngest school goers are failing to progress in the early grades, essentially stuck in their first years at school, is confirmed by three indicators of early grade enrollment. The first of these indicators—the gross enrollment rate (GER)—has remain elevated for the past two decades (Figure 2.7, panel a; also shown are the data for Peru, a country that faced a similar bulge problem as Rwanda, and whose indicator have improved significantly between 1990 and 2000). Rwanda's GER of around 200 percent, compared with a median GER of 150 percent for SSA, signals a 100 percent over enrollment. The second indicator, the gross intake rate (GIR)—has remained at nearly 200 percent as well in the five years since 2005 (Figure 2.7, panel b), with recent declines to 120 percent in 2017 (Govt. of Rwanda 2017). High GIRs (which theoretically counts only new entrants in numerator)

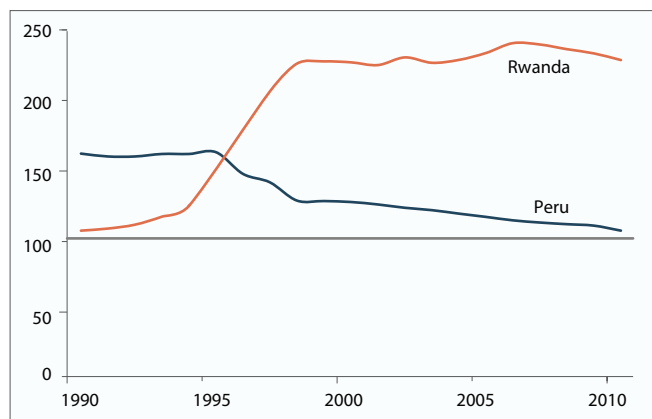
²⁶ The study highlights four priority areas for addressing the learning crisis in the region: (i) completing the unfinished agenda of universalizing basic education with quality; (ii) ensuring effective management and support of teachers; (iii) increasing financing of education and focusing spending and budget processes on improving quality; and (iv) closing institutional capacity gaps.

reflect large shares of over- and under-aged children entering grade one; persistently high GIRs suggest that many of the presumed new entrants to grade one may, in fact, include re-enrollees who are not counted as repeaters. The third indicator—the ratio

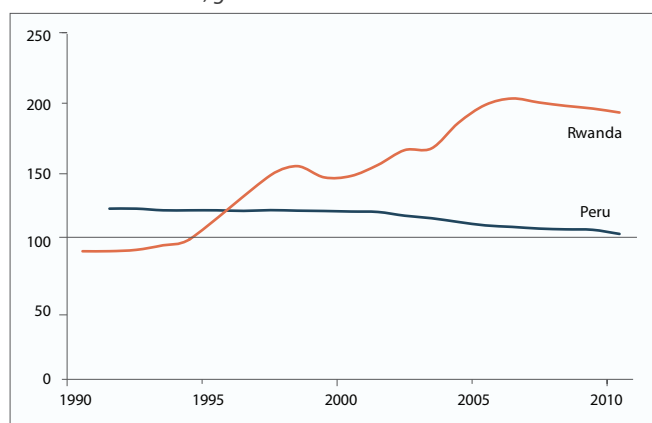
between grade two and grade one enrollments—has been stagnating in the 60-70 percent range between 1998 and 2010 (Figure 2.7, panel c), implying that a significant share of first graders fail to progress to grade two each year, but are instead exiting and re-entering grade one the following year.

Figure 2.7: Early grade enrollment indicators, Rwanda and Peru, 1990-2010

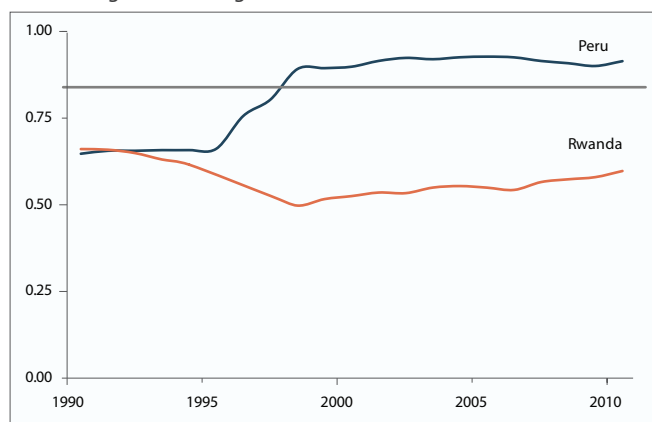
a. Gross Enrollment Rate (GER) in Grade 1^a



b. Gross Intake Ratio, grade one^b



c. Ratio of grade two to grade one enrollment



Source: Bashir *et al.* 2018.

a. Defined as total enrolment in grade one, including repeaters, compared with the population of the official age of entry to the grade.

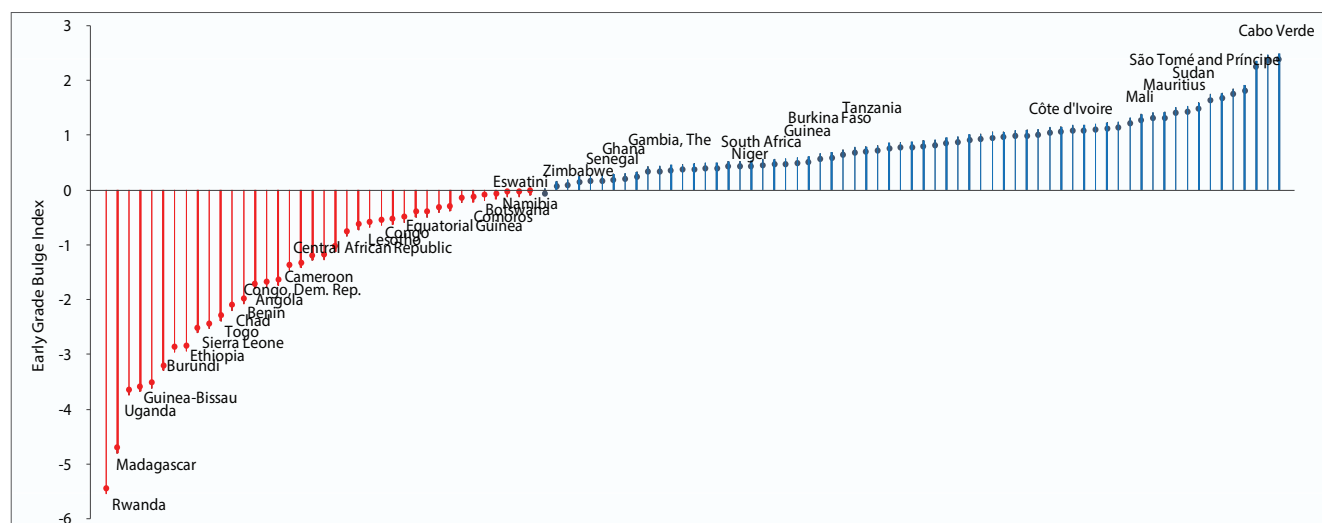
b. Defined as the total number of new entrants to grade one, regardless of age, as a percentage of the population of the official age of entry to the grade.

Rwanda has a highly unfavorable pattern of progression in grade one. Although the repetition rate is a more direct measure of the problem, determining it accurately (i.e., accounting for hidden repetition as well the open sort) requires combined household and school surveys that are rarely available. The Early Grade Bulge Index is an indirect measure, which needs only readily-available data on four indicators: the three presented above (i.e., the grade one GER and GIR, and the ratio of grade two to grade one enrollments) and coverage in pre-primary education. Such data are available for 103 low- and middle-income countries, a third of them in SSA. A high negative value in the index (below -2) can be taken as a sign of slow progress in early grades. Rwanda's Bulge Index, at -5.5, is the lowest among the 103 countries (Figure 2.8), reflecting a significant lack of progression in children's schooling beyond grade one.

Rwanda's excessive bulge index reflects high shares of underage children in grade one and exceptionally large classes, a situation with serious consequences for learning.²⁷ The problem stems in part from limited provision of pre-primary schooling: the corresponding gross enrollment rate for Rwanda in 2010 (the latest year for which comparative data are available) was 14 percent, compared with up to 30 percent among other countries with highly inefficient early grade progression. Recent data suggest the share has risen to 20 percent, which remains modest. As more children of preschool age enroll, they are put in grade one classes, as the dramatic rise in the share of underage children in this grade suggests (Figure 2.9, panel a). The trend

²⁷ Crouch and Merseth 2017.

Figure 2.8: Early grade “Bulge Index” rankings for 103 low- and middle-income countries



Source: Bashir et al 2018.

Note: the index is computed from principal components analysis of data for 2010 for four indicators: grade one GER and GIR, ratio of grade two to grade one enrollments, and the pre-primary coverage.

is likely to be sustained in a context of high fertility rates—averaging slightly above four live births per woman at present—and scarcity of affordable pre-primary education and childcare options. In this setting, primary schools are effectively forced to absorb large numbers of underage children, creating conditions of serious overcrowding. Although class size is not the only condition for improving learning, a class size exceeding 50 makes it virtually impossible to learn in the early grades.²⁸ The implicit absorption of preschoolers into grade one also ignores the fact that most primary school teachers in Rwanda are not equipped to provide developmentally appropriate instruction to underage children among their charges. The combined impact shows up in frequent repetition among both under-aged on on-time children in grade one: 50 and 39 percent, respectively (Figure 2.9, panel b). Predictably, learning outcomes are compromised, as the available data on test scores reported earlier, albeit scanty, suggest.

How Rwanda can do better

- **Expand access to early childhood development and preschool services.** Such services, including nutrition to reduce the pervasive stunting

among Rwanda's youngest children, is critical for promoting children's readiness to learn when they start grade 1. International research suggests that holistic interventions can support children to reach their full developmental potential (Engle *et al.*, 2007; Maalouf-Manasseh *et al.*, 2015).²⁹ Global experience shows that home-based rather than center-based approaches can be more effective in providing early stimulation and improving parenting skills. Rwanda has many home-based ECD programs that are now being scaled up with support under World Bank-financed operations as part of broader efforts by the country's development partners (World Bank 2018b; Appendix 1).

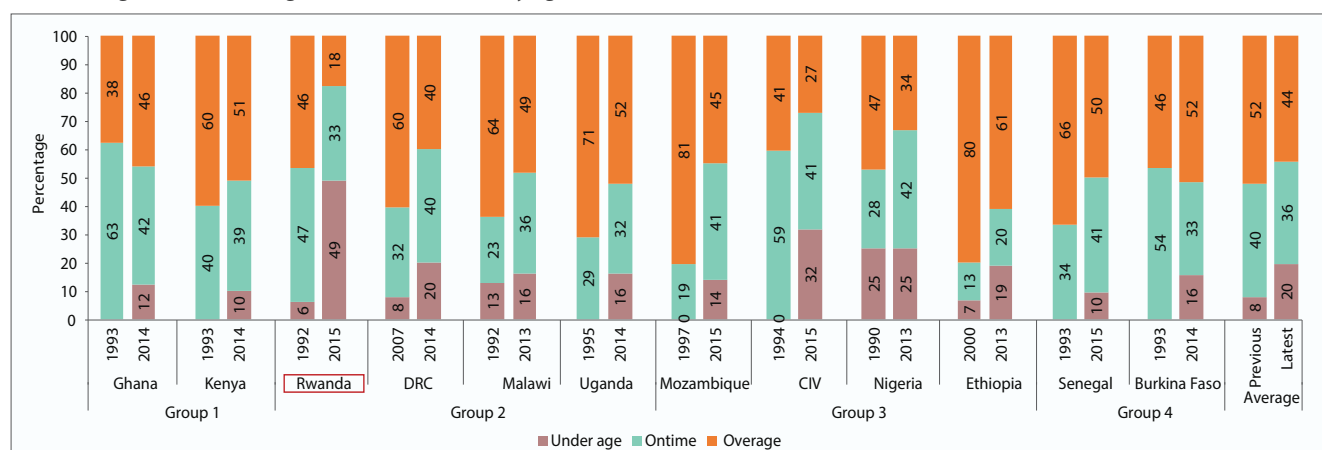
- **Tighten school- and district-level management of the early grade “bulge” by clarifying expectations on age-grade norms and monitoring key indicators closely for each school and district.** The highly specific focus has been used with success by Peru and South Africa to bring their early grade bulge problem under control within a decade or so. South Africa's experience is well-documented and provides key insights, particularly regarding

²⁸ Data on class sizes are unavailable for Rwanda as of this writing. Stefano *et al.* (2012) report, based on their small sample of 17 schools, class sizes in the range of 13 to 64 students, with 80 percent of the sample classes having between 30 and 50 students.

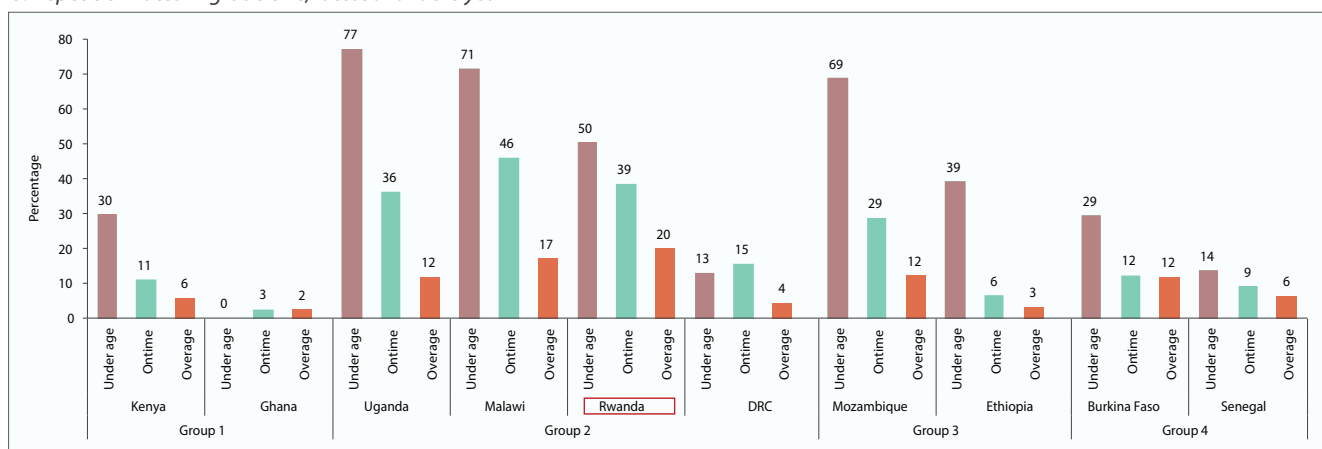
²⁹ Holistic early childhood development promotes mental and physical growth in diverse settings (e.g., homes, schools, and the community) through a wide range of activities, including childcare, nutrition for pregnant mothers and young children, and parenting education.

Figure 2.9: Grade one enrollments by age and repetition rates, Rwanda and other Sub-Saharan African countries, 1990s and latest available year

a. Percentage distribution of grade one enrollments by age



b. Repetition rates in grade one, latest available year



Source: Bashir et al. 2018.

policy implementation. Following its example, Rwanda might consider the following actions: (a) communicate clearly to each school explicit expectations on age-grade norms and require school managers to monitor and report student progression in early grades; (b) monitor annually at the national and local levels, the three indicators that show inefficient progression in early grades (gross enrolment ratio in grade 1; gross intake ratio in grade 1; and ratio of grade two to grade one enrollments). In addition, South Africa's success also stems from its efforts to cap class size in grades 1 and 2 at no more than 50 students to create minimally conducive conditions for teaching and learning. Given

Rwanda's high fertility rate, averaging just above 4 live births per woman at present, achieving the target for class size would require hiring more teachers or assistants, and possibly also substantial investments in additional classrooms. Identifying low-cost construction models will, therefore, require close attention.

- **Expand affordable, proven early grade instructional models so that all children are orally fluent in Kinyarwanda by end of grade two and reading with comprehension by end of grade 4.**³⁰ Examples of good instructional training programs are now available across Sub-Saharan Africa, often initiated by non-governmental organizations, including Literacy

³⁰ According to Abadzi (2008) fluency requires learners to read at 45-60 words per minute by the end of 2nd grade fluent. While the speed will probably differ in Kinyarwanda, it is unlikely to be significantly slower.

Boost in Rwanda (Friedlandher *et al.* 2016) and also in other SSA countries;³¹ and *Tusome* (“Let’s Read”) in Kenya.³² Building on its own experience and in view of the urgency of the challenge, Rwanda could consider the following practical strategies: (a) introducing an accelerated reading program in grade one, with pupil-workbooks, to teach the alphabet and phonemic awareness in 100 days; (b) providing a package of graded supplementary reading materials in Kinyarwanda to every class to practice reading; (c) changing instructional practice in early grades to encourage students to practice reading and numerical skills; and (d) providing teachers of students in early grades explicit training, along with simple teacher guides and on-going coaching and support.

2.2 Remove key impediments to learning and school continuation in basic education

Two key impediments are particularly relevant in Rwanda: the language of instruction and the costs and quality of schooling services.

2.2.1. Manage implementation of the language of instruction policy in a pragmatic fashion

Rwanda’s current language of instruction policy stipulates the use of Kinyarwanda in grades one to three, then English from grade four onward. Since independence in 1962, Kinyarwanda has been the language of instruction (LOI) in the first three grades of schooling. There have been significant policy shifts, however, regarding the LOI from grade four onward (Samuelson and Freedman 2010; World Bank, 2011). Until 1978, it was French; and during the country’s “Rwandazation” period (1978 to 1991), French was replaced by Kinyarwanda for instruction through grade 8. In 1991, in response to nationwide examination results indicating poor overall French

language ability, French was reinstated as the LOI. Following the genocide, a new policy allowing schools to use either French or English for instruction was in effect during 1996 to 2008. A new policy in 2008 made English the LOI from grade 4 through university. French, an official language of the country, is taught as a subject through university (Nzabalirwa, 2014; UNICEF 2016).³³

Most Rwandan children have not yet mastered reading in Kinyarwanda by grade four and could benefit from a delayed switch to English as the language of instruction to improve overall learning outcomes. There is agreement among education experts that children learn to read more efficiently when they do so in a familiar language (Nation 2006). Beyond acquiring basic literacy and numeracy skills, children also need to gain sufficient mastery of their own language to study more complex topics, including another language—a process that typically requires six years of schooling (Ouane and Glanz 2011; Trudell 2016). In the early grades, therefore, the goal is to get all children to the point where they can “read to learn.” That they can more easily get there when taught in a familiar language, usually their mother tongue or the local vernacular (referred to here as the home language), is demonstrated in data from 49 countries that participated in the 2011 Progress in International Reading Literacy Study (PIRLS) (Mullis *et al.* 2012). Data from SSA countries conform to this pattern (Figure 2.10). Children taught in the home language score significantly higher—in grade two, based on data for 10 Francophone countries, by an average of 0.63 standard deviations in mathematics, and 0.72 in reading; and in grade 6, based on data for 25 countries across the continent, they score higher by an average of 0.38 and 0.48 standard deviations,

³¹ The program is active in 30 countries around the world; for more information see: <https://www.savethechildren.org/us/what-we-do/global-programs/education/literacy-boost>

³² For more information see <https://www.usaid.gov/documents/1860/tusome-early-grade-reading-activity>.

³³ UNICEF 2016.

respectively, in the two subjects.³⁴ The impact of language persists to lower secondary education, as data for Botswana and South Africa, the only two SSA countries that participated in TIMSS 2015, show. Students who never use the language of the test at home score lower—significantly so in South Africa—a pattern consistent with international experience.

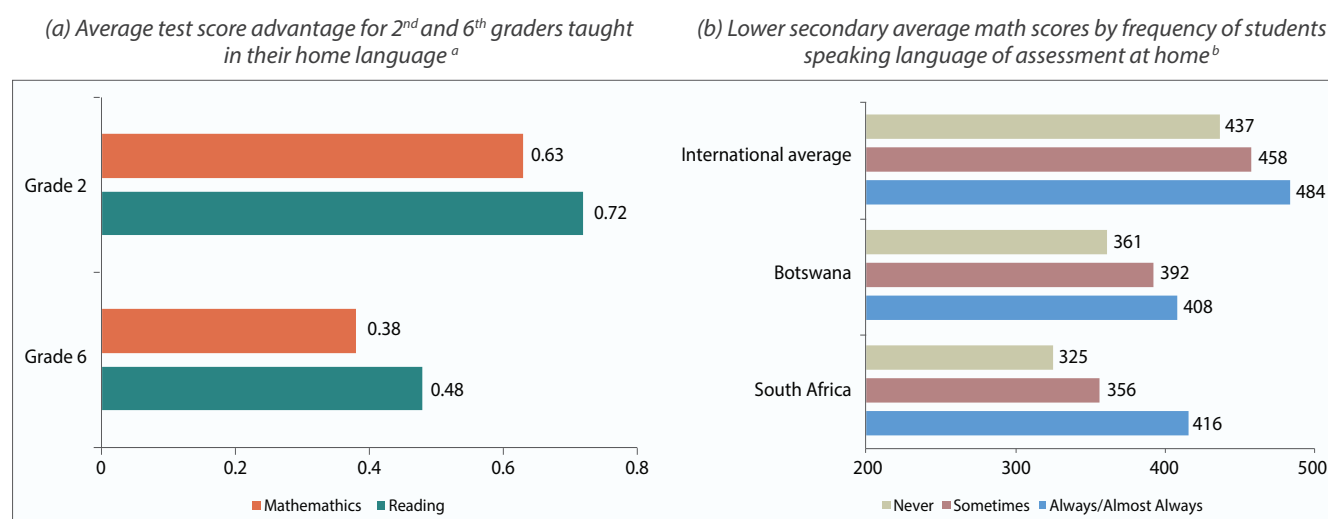
Most Rwandan teachers in the upper primary grades have only a rudimentary grasp of English themselves, complicating the switch to English as the language of instruction from grade four onward. According to a 2014 study only 43 percent of the teachers assessed had an “intermediate level” of competency in English.³⁵ In practice, therefore, instruction in the upper grades in Rwandan schools continue to be offered in Kinyarwanda. This de facto situation could be better managed, however, to take account of the practical constraints on implementing the country’s LOI policy. Making English a subject for the first 4 or 5 years of a child’s schooling, rather than the LOI throughout

the system from grade four onward, would help rationalize the deployment of English teachers, and enable more intentional and effective targeting of investments in teacher development to build up the cadre of teachers with the relevant competencies in English. More importantly, delaying the switch from Kinyarwanda would allow children to make better progress in their studies in all curriculum areas, including English as a subject.

How Rwanda can do better

- **Implement the existing LOI policy in a pragmatic manner, taking into account teachers’ current language proficiency and creating a systematic plan to address the gaps.** Such a plan would: assess teachers’ and students’ grasp of English in grade 4 against the relevant competency benchmarks; map out the distribution of teachers according to their language proficiency; target training and existing teaching materials accordingly; and continue to invest in curricula development and continuous

Figure 2.10: Language of instruction in basic education and test scores in Sub-Saharan Africa



Source: background analysis for Bashir *et al.* 2018.

a. The findings are based on 2014 PASEC data for 2nd and 6th graders from 10 francophone SSA countries, and on 2007 SACMEQ data for 6th graders from 15 countries in eastern and southern Africa. The x-axis is denominated in units of standard deviation.

b. Only two SSA countries, Botswana and South Africa, participated in TIMSS 2015. The data show the average mathematics scores of 9th graders in these countries and the international average for 8th graders in the 64 other countries or participating systems. The x-axis is denominated in TIMSS international score points, with the following benchmarks for performance levels: 625 for Advanced, 550 for Intermediate, and 400 for Low. Each benchmark is separated by 75 points.

Note: PASEC = Programme d’analyse des Educative de la CONFEMEN (Conference of Ministers of Education of French-speaking Countries). SACMEQ = Southern and Eastern Africa Consortium for Monitoring Education Quality. TIMSS = Trends in Mathematics and Science Study.

³⁴ The reduction in the impact of home language instruction in the higher grade is a pattern observed in other countries as well and may reflect higher rates of dropping out among underperforming students.

³⁵ Clist *et al.* 2015 cited in World Bank 2019.

assessments to improve the design of the program. Extending the period of transition to English could be considered for schools lacking conditions for immediate implementation. Such schools could be supported through targeted support (e.g., provision of remedial teaching for children with appropriately sequenced textbooks and materials). As important as the plan's technical soundness is public support for it, notably support from parents, teachers, and others. Consultation and buy-in from key stakeholders, along with evidence from what is going on in classrooms, is essential to guide resource deployment, and sustain implementation for results.

- **Scale up cost-effective models of English language training for teachers, including development of instructional materials.** Rwanda can draw on its own experience as well as those of other countries with successful results in implementing LOI policies. The Rwanda Education Board (REB) has been leading efforts, in collaboration with partners, to implement the country's LOI policy. Examples include: (a) the five-year Literacy, Language and Learning Initiative (L3) launched in 2011 with funding from USAID and technical support from the Education Development Center to develop instructional materials in Kinyarwanda and English and to improve teacher capacity; (b) the Literacy Boost program, supported by Save the Children and World Vision, with a focus teacher training and support, and community engagement (Friedlandher *et al.* 2016); and (c) the School-based Mentoring Program introduced in 2012 with support from the British Council to support teachers' use of English for instruction in the classroom.³⁶ All these programs can be distilled for ideas on scaling up across all schools. The experience of

countries such as Ethiopia and Tanzania could also be tapped to guide Rwanda's efforts in the coming years.³⁷

2.2.2. Removing barriers to higher rates of transition between grade 6 and grade 7

Supply- and demand-side factors work in combination to increase dropout rates between grades 6 and 7 in Rwanda and widen urban-rural and rich-poor gaps in participation rates in basic education. Supply-side factors include lack of nearby schools and poor-quality schooling; and demand-side ones, high out-of-pocket expenses and children's forgone labor at home, on the farm or in the family business. Recent household surveys in sub-Saharan African countries, including Rwanda, offer pertinent insights. Nearly 60 percent of Rwanda's lower secondary students in rural areas live more than 3 kilometers (or more than a half hour's walk) from the nearest secondary school—among the highest level among SSA countries (Figure 2.11, panel a). Although distance is rarely cited as a reason for dropping out (panel b), parents who send their children longer distances for school are likely reckon travel time among the costs of schooling. Costs of all kinds are in fact the single most often-cited reason—by 40 percent of Rwandan parents for boys, and 36 percent for girls. Quality issues add 26 and 23 percentage points, respectively, making these two factors the most prominent reasons given for dropping out.

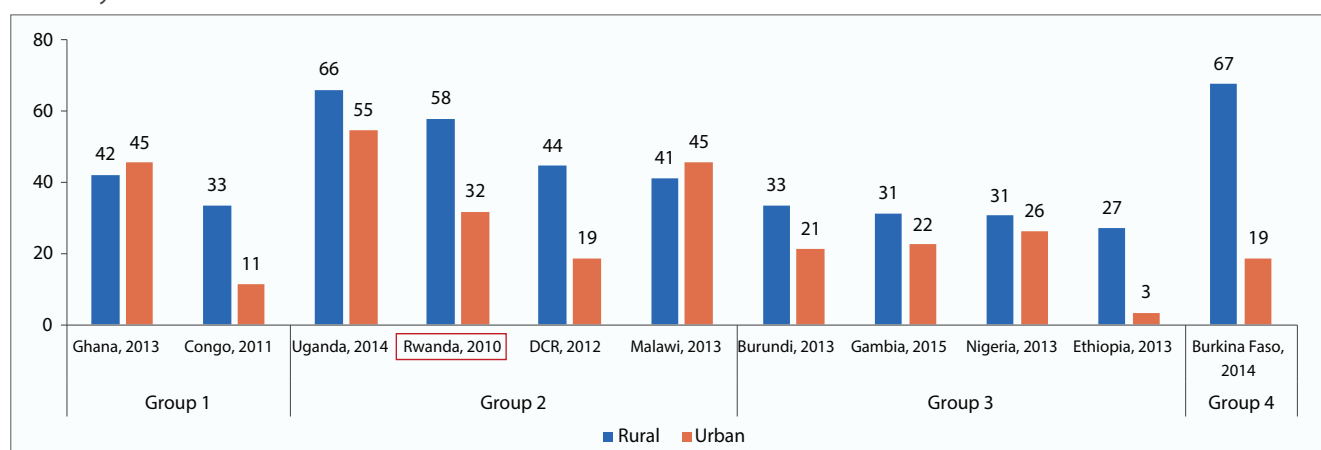
A further bottleneck to lower secondary education is the examination at the end of the primary cycle. In Rwanda, as in many SSA countries, this examination is considered “high stakes” because it regulates the access or placement of students into the next education level. Countries that have consolidated primary and lower secondary into a single “basic education” cycle of about nine years of schooling have typically eliminated examinations at the end

³⁶ For more details, see <https://www.britishcouncil.org/partner/track-record/rwanda-english-action-programme>

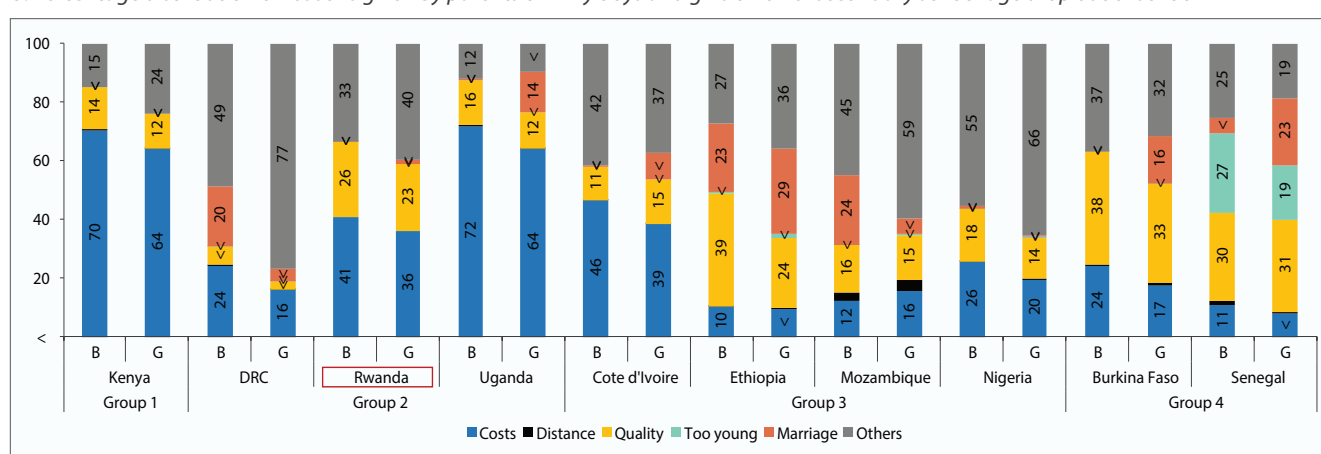
³⁷ See Appendix 2 for highlights of Ethiopia's experience with local language instruction.

Figure 2.11: Distance, cost, quality and other impediments to lower secondary schooling in Rwanda and other Sub-Saharan African countries, by country group, early to mid-2000s

a. Percentage of urban and rural children of lower secondary age living more than three kilometers or a half hour's walk from the nearest secondary school



b. Percentage distribution of reasons given by parents on why boys and girls of lower secondary school age drop out of school^a



Source: Bashir et al. 2018, based on analysis of the latest World Bank Living Standards Measurement Study (LSMS) and country Demographic and Health Survey (DHS) data. a. "Quality" regroups three reasons: (a) students do not see the value of education and are therefore not interested; (b) parents do not see the value of education and therefore do not want to send their children to school, or (c) student has failed an examination. Note: for definitions of country groupings see Box 2.1; the symbol "<" denotes percentages less than 10%; B=Boys; G=Girls.

of the primary cycle (Bashir et al. 2018). Removal of this structural impediment addresses several possible problems, including the misallocation of instructional time devoted to "teaching to the test;" erosion of the credibility of the examination system because of cheating and other malpractices; and manipulation of the process (e.g., schools limiting examination takers only to students who are likely to perform well) in ways that undermine equity goals in education. Botswana's experience illustrates the benefits of eliminating the end-of-cycle high-stakes examination: following abolition of its Primary School Leaving Examination in 1987, the effective transition rate from primary to lower secondary education jumped from 57 percent in that year, to nearly 90

percent by 1990. Mauritius, another Group 1 country, has also abolished its Certificate of Primary Education examination, starting in 2017, as part of its Nine Year Continuous Basic Education reform.

How Rwanda can do better

- **Reduce the costs of schooling and improve the benefits perceived by students and their families.** Options for raising transition rates from grade 6 to grade 7 and encouraging perseverance to grade 9, the end of basic education, include: (a) locating lower secondary schools closer to rural habitations, by reworking, if necessary, the school map for new schools or classrooms; (b) targeting conditional cash transfers to poor

households, especially in rural areas, to offset the direct and indirect costs of school attendance; (c) improving the conditions for teaching and learning in schools, especially those serving underprivileged populations, including separate toilets for girls, electricity supply, competent teachers, and learning resources; and (d) targeting the parents of at-risk children for communication campaigns about the benefits of schooling and addressing their concerns.

- **Use technology to enable the cost-effective teaching of lower secondary mathematics and science.** Like most Sub-Saharan African countries, Rwanda needs to prepare for a massive expansion of enrollments in lower secondary education, as more children complete primary schooling and continue to the next level. Traditional models of secondary schooling, with standard laboratory-based science instruction and a curriculum requiring intensive use of specialized teachers, may prove unaffordable to scale up; instead more cost-effective alternatives will be needed to accommodate the projected expansion of enrollments, including adding lower secondary grades to existing primary schools. Rwanda could build on its sunk investment in laptops for schools and systematically explore ways to leverage this technology to reduce service delivery costs while improving instructional quality. It could take advantage of, for example, open source online curricula materials, technology-aided methods to fill gaps in teacher knowledge, and big data approaches to embed formative assessment in teaching and learning in the classroom. Experimentation, with monitoring and evaluation, could help identify options suited for conditions in Rwanda.
- **Abolish the grade 6 national examination to improve the transition rates between the primary and secondary cycles.** In eliminating the examination Rwanda would be following

the example of countries like Botswana and Mauritius—both Group 1 countries—where the measure was adopted as part of the effort to universalize basic education. As Rwanda makes progress with improving continuation rates in the primary cycle and student learning, abolishing the grade 6 examination could also be considered to let more primary school leavers continue with their schooling for three more years.

2.3 Strengthening the professionalism of teachers, instructional leaders and their managers

Teachers are the main channels for service delivery; their professional competence is therefore paramount for achieving Rwanda's aspirations for basic education. Setting appropriate recruitment standards matter for the quality of entrants to the workforce. The work performance of teachers depends not only on their training and professional development, but also on the material and technical support offered by instructional leaders and school managers, and on the incentives embedded in opportunities for career progression.

2.3.1. Enhancing teachers' professional competence and their support they receive

Deficiencies in teachers' knowledge of subject content and of pedagogy, and as well gaps in practical teaching skills are a concern. Direct evidence of deficient teacher skills is sparse for Rwanda, but ample research findings exist from other countries that provides useful insight. Analysis of SACMEQ surveys shows a strong positive link between teacher subject knowledge and student test scores (Bietenbeck, Piopiunik, and Wiederhold 2017; Hungi 2011; Altinok 2013). Westbrook *et al.* (2013), in an extensive review of findings from numerous low- and middle-income countries, including many in SSA, show that students learn more when taught by teachers with good teaching skills (e.g., ability to adapt teaching to students' learning needs, use of

multiple strategies to engage students, including giving feedback, asking open-ended questions, and taking steps to create a conducive learning environment in their classroom). With regard to teachers' level of professional competence, the available data paint a sobering picture, including in countries in the "Established" group whose education systems are more mature than those of countries in the "Emerging" group in which Rwanda belongs. In Kenya—the country with the best results on the World Bank's Service Delivery Indicators (SDI) surveys—grade four teachers averaged only 63 percent correct on the language test, 77 percent on the mathematics test, and just 35 percent on the pedagogy test. Classroom observations also show the prevalence of teachers relying on a limited repertoire of basic teaching practices.³⁸

Tackling deficiencies in teachers' professional competence through "structured pedagogy" rather than in isolation is a promising way to boost student learning. Structured pedagogy is defined as a package of teacher training, ongoing teacher support, resources or materials for teachers, and classroom learning materials for students (Bashir *et al.* 2018). Rigorous evaluations in Kenya, Liberia, Mali, South Africa, and Uganda estimate that it boosts student learning outcomes by an average of 0.28 standard deviations, far ahead of the next most effective intervention, extra learning time, which delivers an impact of just 0.18 standard deviation (in Ethiopia). Recent studies in more than a hundred-multiple low-middle- and high-income settings highlight the effectiveness of certain types of teacher training. Such training if sustained over time instead of being offered sporadically through short-duration seminars on general topics; responds to teachers' specific needs; focuses on concrete tasks; includes mentoring for novice teachers and encourages peer learning (Evans and Popova 2016; Popova, Evans and Arancibia 2016).

Accessible and ongoing coaching of teachers by their school heads and instructional leaders has also emerged as a promising alternative to traditional models for teachers' professional development. Used with good results in developed countries, including China, Singapore and the US, systematic coaching is now also being tried in some SSA countries. In South Africa, it boosted student learning by more than double the size associated with more traditional teacher professional development (Cilliers and Taylor 2017). In Kenya, the government is repurposing existing school inspectors as coaches to teachers in schools (Gove, Poole and Pipe 2017). SACMEQ and PASEC countries implicitly recognize the role of school heads as coaches and instructional leaders by documenting how frequently they provide pedagogical advice to their teachers, or how frequently they meet with their teachers on quality issues (Bashir *et al.* 2018).

How Rwanda can do better

- **For serving teachers, equip them all with clear, easy-to-understand, structured teacher guides and offer a menu of competency-based training options and pathways for career progression.** It is important to link the teacher guides to student textbooks and other teaching materials, including formative assessment items. Offering a menu of training options recognizes that the teacher cadre is diverse in terms of teachers' initial level of knowledge about their subject and related pedagogy. The menu helps improve the match between teachers' professional development needs and the training they receive. It situates teachers along a career path they can follow in steps, with the potential of reaching levels of expertise sufficient to compete for expert positions in critical priority areas (e.g., early grade reading and mathematics, lower secondary mathematics, science and international languages). As such,

³⁸ Evidence on secondary school teachers' professional competence is rare. A small sample of Rwandan teachers—all with university degrees—took 40-item tests in mathematics and the sciences in 2018 pitched at the level of high school tests in the US, as part of their participation in the World Bank's Mathematics and Science for Sub-Saharan Africa (MS4SSA) initiative. Correct answers among them averaged about 70 percent.

the menu of training options becomes part of the incentive system for teacher development. It could help shift the onus of professional development toward greater ownership by the teachers themselves.

- **For low-performing serving teachers, provide pathways for improvement through training, mentoring and support, and allow for exits for those failing to reach minimum professional standards.** At present, very little information exists in Rwanda on how widespread the problem of low teacher professional competence is, and what specific problems the teachers face in their work. Such data would help establish minimum levels of professional competency and allow scarce resources to target low-performing teachers who can actually benefit from an investment to develop and strengthen their professional competency, whether through training courses, mentoring or intensive support.
- **For prospective teachers, offer pre-service teacher training aligned to the country's new competency-based curricula and priorities for student learning.** Pre-service teacher training is meant to equip new teachers for teaching jobs in Rwanda's schools. Proper governance is needed to ensure that the programs are attuned to the school curricula, the textbooks, materials, assessment tools, and instructional methods that the trainee teachers will actually be using in their prospective teaching jobs. Proper governance arrangement is also needed to link training programs more closely with the induction of new teachers into their first job and to facilitate the use of digital resources on exemplary teaching practices to compensate for the limitations one-on-one coaching for new teachers. Investment in faculty development can improve the technical quality of teacher training programs and the use of teachers as guest faculty can help boost the programs' practical relevance.

- **For school directors and instructional leaders, strengthen incentives and offer specific training for them to fulfil their role as managers, mentors, and coaches of teachers under their care.** Teachers become more effective by honing their teaching skills on-the-job with guidance from managers and instructional leaders who are accessible on-site, technically competent to offer the help needed and incentivized to do so. Rwanda might thus consider: (b) formalizing the roles and responsibilities for instructional leaders and new teacher mentors, including school heads, center- or district-based staff (i.e., DEOs, SEOs and inspectors); (b) designing dedicated training for school heads and academic advisors (or coaches); (c) filling leadership positions competitively; and (d) recognizing and rewarding high-performing leaders and ensuring systematic sharing of their expertise (e.g., mandatory rotation before promotion; salary top-up to oversee a local network of schools, etc.).

2.3.2. Professionalizing teacher recruitment and fostering career development and progression

Many of Rwanda's school teachers have modest educational qualifications, reflecting the impact of rapid expansion of teacher recruitment in the past. From 2000 and 2013, the number of teachers in Rwanda grew by 1.5 times in primary education, and 4.6 times in secondary education, the latter among the fastest rates in SSA (Bashir *et al.* 2018). The expansion helped staff schools with additional teachers to accommodate the large increases in student enrollments; its rapid pace, especially at the secondary level, might have adversely affected the quality of the teacher workforce. The latest available household and labor force survey data reveal that only a third of Rwanda's primary school teachers in 2011/12 had at least a diploma-level qualification, compared with 100 percent in Tanzania and 88 percent in Uganda—countries in the same

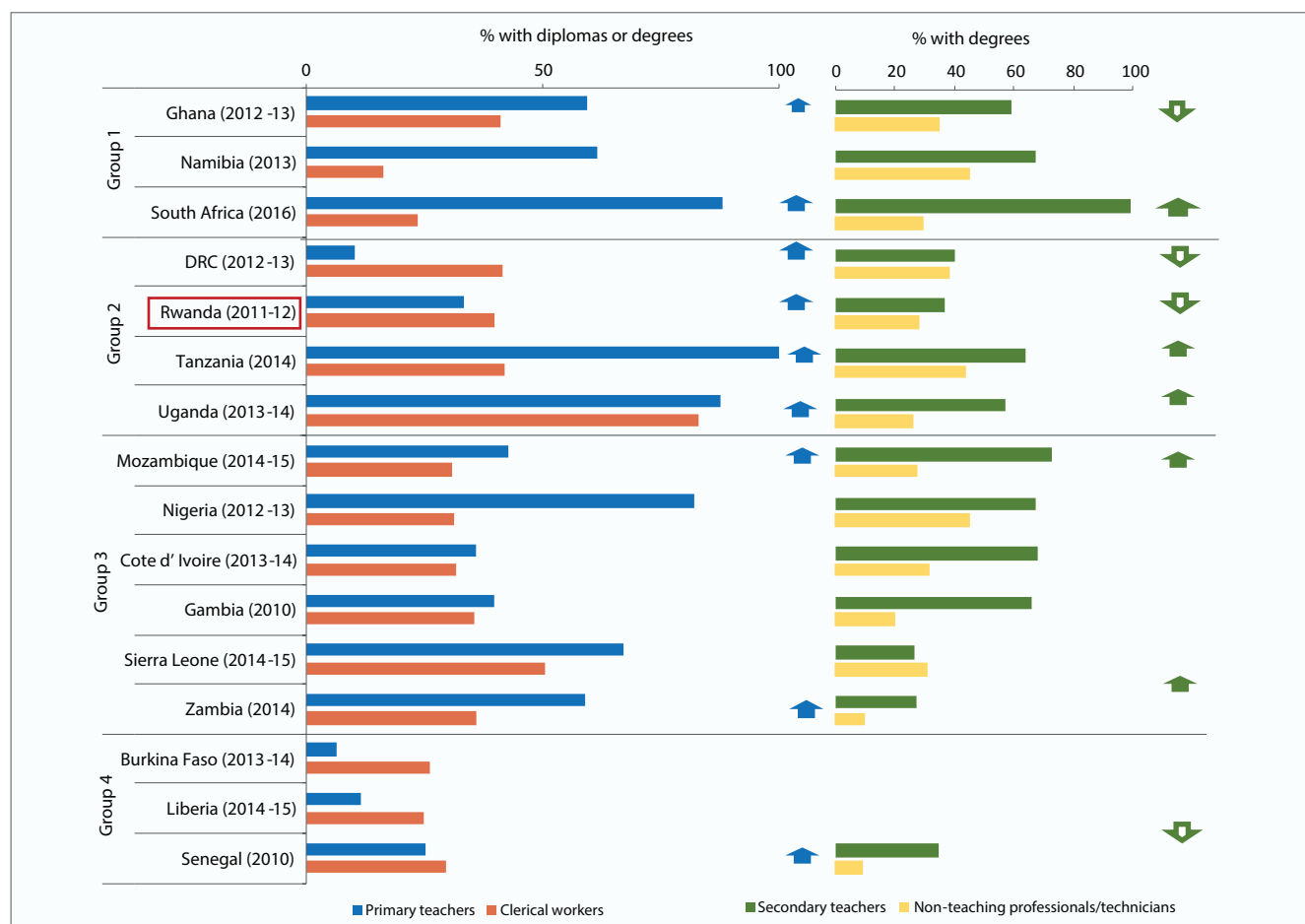
“Emerged” group as Rwanda (Figure 2.12).³⁹ Rwanda is, moreover, among the few in the sample of 16 SSA countries with similar survey data where the tertiary-educated is a smaller share among primary school teachers than among clerical workers. At the secondary level, about 37 percent of Rwanda’s teachers have a university degree (a decline from 2005, a previous survey year), compared with 64 in Tanzania and 57 in Uganda. About 36 percent of Rwanda’s secondary teachers have only a secondary education themselves (Bashir *et al.* 2018).

In many SSA countries, an upper secondary education is the official minimum qualification

threshold for primary teachers (Bashir *et al.* 2018).

The 17-country Teacher Education and Development Study in Mathematics (TEDS-M), conducted in 2008, suggests that this threshold might indeed makes sense in light of concerns about teacher quality. The study tested future mathematics teachers—on content and pedagogical knowledge—at the end of their training programs (Tatto 2013). The test result for Botswana—the only SSA country in the study—is revealing. The country’s trainee teachers had all completed at least upper secondary school, yet they were among the lowest-scoring group in the study, averaging about half a standard deviation below the centerpoint score. Bashir *et al.* 2018 show that their

Figure 2.12: Share of teachers and other educated workers with tertiary education in Rwanda and selected Sub-Saharan African countries, by group, early to mid-2010s



Source: Bashir *et al.* 2018

Note: The Figure shows results based on analysis of country household labor force survey for the year indicated in parentheses following the country name. See Box 2.1 on the four country groupings.

³⁹ Since the 2011/12 survey, two new household's surveys were conducted in 2013/14 and 2016/17. Neither of the two surveys was available for analysis at the time of analysis for Bashir *et al.* (2018) and their results are therefore not reported here. However, because the focus here is on the stock of primary school teachers, the profile is likely to have changed relatively little since the 2011/12 survey.

low score correlates with the low scores of Botswana's students on the Trends in International Mathematics and Science Study (TIMSS). In an effort to boost the quality of the teacher workforce, countries such as Ethiopia and Ghana have established upper secondary education as the minimum qualification for primary school teachers.⁴⁰ These countries have taken steps to allow serving teachers to meet the minimum standard through multi-year in-service upgrading programs.

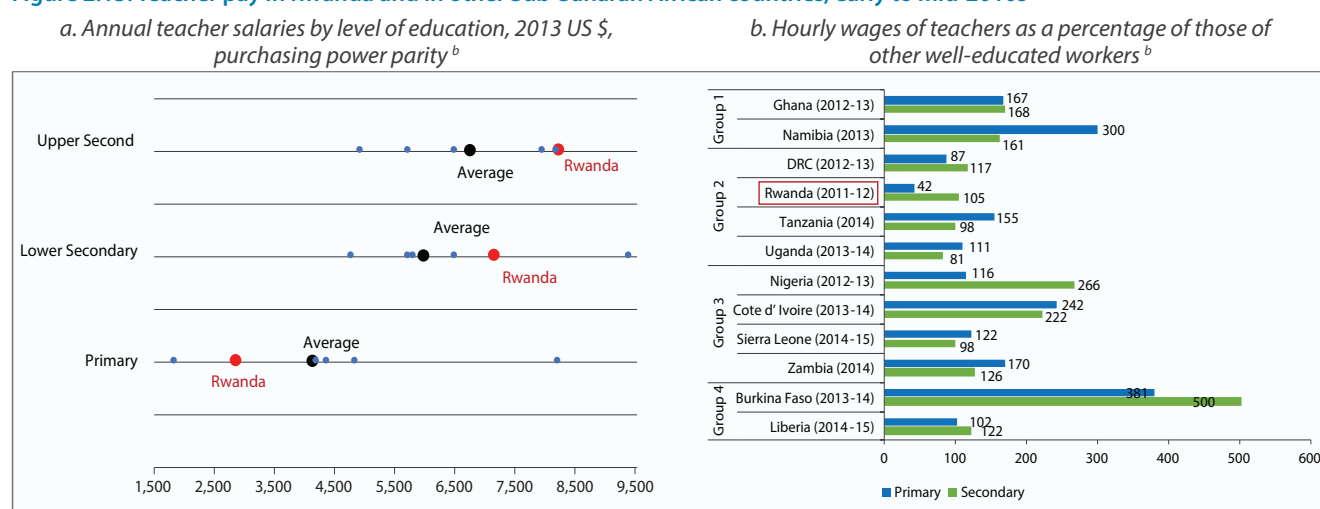
The pay of primary school teachers in Rwanda is modest, reducing the profession's attractiveness to better-qualified candidates. Cross-country data show that primary school teachers in Rwanda receive just two thirds the average salary of primary teachers in low-income African countries—much lower than the salaries of primary teachers in Tanzania, Uganda, and Burundi (Figure 2.13, panel a). By contrast, Rwanda's secondary school teachers—in both lower and secondary levels—earn about 20 percent more than their peers in the region. Evidence from Rwanda's household and labor force surveys show a consistent pattern of modest pay for primary school teachers: they earn just 42 percent that of clerical workers, the lowest rate across SSA countries (Figure 2.13, panel b).

By contrast, the wages of Rwanda's secondary school teachers are competitive with that of their peers in professional or technical jobs. Schools and teachers commonly report that pay is low and welcome their ability to access to other benefits, including low-interest loans (Muyombano and Mbabazize 2016). The modest pay of Rwanda's primary teachers does not seem to have increased absenteeism, a rampant problem in many other SSA countries. Yet it can reduce motivation, particularly when the prospects for career progression are limited, and affect the quality of new entrants into the profession. The large pay differential between primary and secondary teachers also makes it harder to attract good candidates to teach in primary schools. Finally, it is also useful to take note of the workload of Rwanda's primary school teachers: they are assigned by subjects, not classes, and typically teach two shifts of students each day that school is in session.

How Rwanda can do better

- **Raise minimum qualification standards for teacher recruitment in primary education.** Focusing on primary school teachers is pertinent in Rwanda's context in light of their particularly weak educational profile. Raising the minimum

Figure 2.13: Teacher pay in Rwanda and in other Sub-Saharan African countries, early to mid-2010s



Source: Govt. of Uganda-UNESCO-IIEP 2014 cited in World Bank 2019 for panel a; Bashir et al. 2018 for panel b.
a. Blue dots refer to the following Saharan countries: Burundi, Central Africa Republic, Sudan, Tanzania and Uganda.
b. Primary teachers relative to clerical workers; secondary teachers, to professionals and technical workers.

⁴⁰ See Bashir et al. 2018 (Box 4.5) on Ghana's experience, and Appendix 3 on Ethiopia's experience.

to at least an upper secondary education is likely to give teaching a boost in status. But it is clearly insufficient by itself to boost learning outcomes; the broader issue is about standards for teacher content knowledge, skills, and dispositions. Thus, unless the content of upgrading programs addresses these issues, and are reinforced by subsequent professional support and incentives for continuous professional growth, simply raising the minimum qualification would only increase the wage bill and produce limited, if any, gains in teacher effectiveness and student learning. More work also needs to be done to identify cost-effective options for the upgrading program.

- **Agree on staffing norms and use them to rationalize teacher deployment.** Staffing norms are the standard tool for minimizing the influence of political and other pressures that may weaken the link between student enrollments and the allocation of teachers. Including them in the toolkit for teacher management would help reduce the prevalence of overcrowding in some schools (which likely implies overworked teachers) while other schools have a surplus of teachers. The result is a more equitable and efficient distribution of the resources represented by the teacher wage bill in the budget. As Appendix 4 explains, significant scope for improvement, based on district-level data showing only a loose relationship between the number of students and staff allocations.
- **Review the pay structure of teachers, allow for greater career progression, and invest in ongoing teacher professional development.** A general increase in teacher salaries may seem logical in light of evidence on the modest pay of teachers, especially those in primary schools. Budget constraints are likely to make such an increase infeasible, but a general increase

may also be inadvisable because of its likely weak influence on teacher performance and its tenuous link to student learning.⁴¹ A better approach is a pay structure that rewards teachers for their professional skills and impact on learning, one that enhances incentives for teachers to upgrade their content knowledge and pedagogical skills, and to give more attention to their students' learning progress. When combined with investments in ongoing teacher training and support, the arrangement can help clarify career tracks for teachers, school heads and instructional leaders, and offer concrete benchmarks defined around student learning needs and outcomes to contextualize the incorporation of performance-based bonuses in teacher performance contracts (*imihigos*).

2.4 Increasing public spending on basic education and strengthening implementation capacity

Universalizing basic education with quality will require more government spending, as well as smarter use of the resources to provide quality-enhancing inputs. Strengthening MINEDUC's capabilities in core areas of education administration will matter for success in expanding schooling for learning under tight budget constraints. Key functions include planning, budgeting, and procurement; curriculum development; human resource management; data collection and applications; and use of learning outcomes as a tool for accountability throughout the system.

2.4.1. Mobilize and deploy resources to universalize basic education with quality

Rwanda has a well-rated system for public expenditure planning and budgeting and for budget execution. The 2016 Public Expenditure

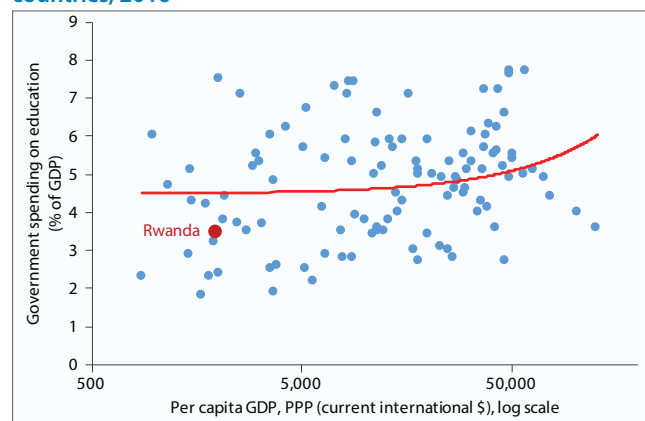
⁴¹ During 2006-2015, the Indonesia government implemented a certification program that doubled the salaries of teachers who went through it. According to a rigorous evaluation, the pay increase significantly "improved teachers' satisfaction with their income, reduced the incidence of teachers holding outside jobs, and reduced self-reported financial stress. Nevertheless, after two and three years, the increase in pay led to no improvement in student learning outcomes" (De Ree et al. 2018).

and Financial Accountability (PEFA) ratings improved on Rwanda's already favorable scores in 2010 (PEFA 2017).⁴² In 2016, Rwanda scored A on the orderliness (budget calendar); B on participation (guidance on budget preparation) in the annual budget process; B on multi-year planning, budgeting and spending—a technically more complex process; and A on comprehensiveness and transparency of the budget. Rwanda's education sector plans are seen a positive model for other countries in SSA. Its budget execution capacity is also well-rated: B or B+ on the predictability of the availability of funds for commitment of expenditure, the effectiveness of payroll controls, and the effectiveness of internal controls on non-salary expenditure.

This robust financial management system has enabled Rwanda to improve some aspects of the material and learning conditions in schools. In 2017, practically all primary and secondary schools have toilets, nearly 60 percent have tap water, and hydroelectric supply is available in more than 55 percent of primary schools and in more than 70 percent of secondary schools. The number of primary pupils per textbook ratio ranges from one to four for mathematics, Kinyarwanda and English, depending on grade; in the lower secondary grades, the ratio ranges from one to four, depending on subject. Computers are available in nearly 70 percent of the primary schools and 85 percent of secondary schools; the internet is accessible in 25 percent of primary schools, and in more than 40 percent of secondary schools; ICT is used for teaching and learning in 44 percent of primary schools, and 60 percent of secondary schools and science kits have been distributed to 37 percent of primary schools and 66 percent of secondary schools (Govt. of Rwanda 2017). Beyond the global averages, it would be important to document their distribution across schools and classrooms.

Yet, from a cross-country perspective, Rwanda underspends on education, especially on primary education. As Figure 2.14 illustrates, Rwanda is below the regression line that relates government spending on education as a share of GDP and per capita income. Moreover, public spending on primary education in Rwanda, at 30 percent of total spending on education in 2014, is also significantly smaller than the regional average of nearly 50 percent for SSA countries in Groups 2, 3 and 4 which, like Rwanda, have yet to establish full coverage of primary education. Correspondingly, spending per primary student in Rwanda is relatively modest: \$103 (in constant 2013 purchasing power parity dollars), compared with a regional average of \$208 for SSA; and less than 20 percent the level of spending on secondary education in Rwanda. The modest level of per capita spending on primary education in Rwanda translates into relatively modest pay for teachers, as documented earlier; it also implies limited resources for quality-enhancing inputs, particularly professional development opportunities for teachers and the provision of ongoing teacher support.

Figure 2.14: Relation between public spending on education as a percentage of GDP and per capita income across countries, 2016



Source: Data from World Development Indicators 2017, accessed at <https://datacatalog.worldbank.org/dataset/world-development-indicators>
 Note: the red line is the linear regression relating the y-axis and x-axis variables.
 PPP=purchasing power parity.

⁴² The 2016 PEFA scores reflect the ratings using the "Upgraded Framework" and were directly comparable on only 14 dimensions to the scores based on the 2011 framework. The score improved for three sub-components and remained unchanged for the remaining 11 dimensions (PEFA 2017).

How Rwanda can do better

- **Ensure a minimum package of teaching-learning materials and facilities for all schools and classes, and budget accordingly.** Vietnam is an example of a country that developed a set of school standards which was used for budgeting purposes (World Bank 2011a). These standards ensured that all schools were equitably treated and that schools in disadvantaged areas received compensatory funding. Defining the contents of this minimum package appropriate to Rwanda's content is as essential as the task of coordinating the logistics of implementation, to ensure the arrival of integrated packages of materials (e.g., teacher guides and associated student workbooks, science kits, etc.) required by teachers to do their work effectively.
- **Review and improve procurement and financial management at all levels.** Better oversight of these budget-related processes would help ensure that all schools have the resources to provide minimally conducive teaching and learning environments to their students. Because poor quality services is a particularly important reason for student dropout in Rwanda, addressing the problem through closer attention to procurement and financial management, from the center to the school level, can have a high payoff in boosting school continuation and learning. Rwanda has made progress in improving schools in terms of basic facilities (e.g., water, toilets, etc.). More needs to be done to fill other gaps, particularly in the “softer” areas relating to teachers, viz., ongoing training, professional development and support from instructional leaders and mentors. Procurement of such inputs may require more coordination of effort across agencies (e.g., the Finance and Education ministries) as well as more specialized expertise for managing the contracts.

- **Undertake long-term, policy-sensitive projections of school expansion to plan budgets and implementation strategy.** Like most SSA countries striving to universalize basic education, this goal, Rwanda must prepare for a massive increase in lower secondary school enrollments—possibly a doubling of students over the next 15 years. The budget implications will depend on various parameters, including assumptions about delivery models, and the cost of material inputs, and teacher salaries and their workloads. Long-term projections of alternative scenarios provide a critical tool for strategic decision-making that links budget decisions to implementation follow through (see Mingat, Ledoux and Rakotomalala 2010 for an example of such projections).

2.4.2. Augmenting MINEDUC's capacity in critical areas of education administration

Across countries in Sub-Saharan Africa, weak capacity in the Ministry of Education and its regional and district offices is often the single biggest constraint to improving the quality of education. Key technical skills are often very scarce or lacking in quality—such as those for curriculum and materials development, learning assessment, design of teacher training programs, and so on. Data are collected but often not used or publicized. Ministries of Education lack the capacity to develop legal frameworks and regulations; design human resource policies which address incentives and accountability issues; manage coordination among various institutions and engage in negotiations with different stakeholders. Yet all these capacities are required if the goal of quality basic education is to be met.

In SSA countries, including in Rwanda, efforts to develop the capacity of Ministries of Education tend to be haphazard, fragmented and dependent on donor-financed projects that focus on discrete

activities. The World Bank's regional study *Facing Forward* identifies five key domains of particular vulnerability: (a) generation and use of data; (b) technical capacity in areas linked to improving quality at the system level; (c) coordination of institutions to align resources and inputs for successful classroom outcomes; (d) accountability and incentives encompassing central administration and service providers at the local level, especially at the school and teacher levels; and (e) negotiation and consensus building with stakeholders that affect the implementation of policy decisions.

Rwanda's ministry of education, MINEDUC, has made considerable, albeit variable, gains in building capacity in the five domains highlighted in *Facing Forward*, the World Bank's regional study.

Regarding data generation and use, Rwanda has a functioning Education Management Information System (EMIS) that collects, consolidates and publishes basic data on students, teachers and schools in a timely manner.⁴³ Data gaps remain, however, as the EMIS reports contain no data on education finance and student learning which are collected in separate stand-alone data systems. Regarding technical capacity, Rwanda's institutions are less mature than those in Group 1 countries—Botswana, Mauritius and South Africa, and also those in Ghana and Kenya, which lag behind them. But it has set up the Rwanda Education Board (REB) with a clear mandate and responsibility for education quality. The REB has produced a competency-based curriculum now being implemented in schools, and it is increasingly involved in efforts to develop teaching materials for use in schools (e.g., in lower secondary mathematics and science). It tracks student learning through the Learning Assessment Learning Achievement in Rwandan Schools (LARS). As of this writing, the country does not participate in any regional or international assessments of student learning.

Regarding coordination across institutions to align resources and inputs, Rwanda shares this problem with countries with limited mastery to manage the inherently long chain of decision-making in a labor-intensive sector as education.

For example, although a continuum of options for teacher training could encompass both prospective and serving teachers, its design and implementation requires coordination between teacher training colleges and the University of Rwanda-College of Education—institutions responsible for pre-service teacher training—and REB, which is responsible for in-service teacher training on an ongoing basis—an expectation that may be difficult to sustain in the absence of specific attention by policymakers.

Regarding accountability and incentives, teacher management is a particular source of difficulty arising.

In Rwanda, the problems stem, in part, from overlaps in the mandates of MINEDUC and the Ministry of Local Government (MINALOC) (e.g., Honeyman 2017). MINALOC decides on teacher appointments, deployment and evaluation, but REB sets standards for teacher performance and student learning outcomes. In the absence of agreed processes for coordination, reporting and accountability between the central and local actors, teachers receive unclear signals about their work and their focus on student learning weakens accordingly. Finally in the last area of capacity—on negotiations and consensus building—contentious issues in other SSA countries that require this competence include: engaging teacher unions to reach agreement on teacher pay, working conditions, and performance evaluation (e.g., Kenya); and with local authorities about staffing (e.g., Malawi), procurement and logistics management to ensure that schools receive the teachers and materials they require to function effectively.

⁴³ Statistical reports are available at MINEDUC's website at: <http://mineduc.gov.rw/resource/statistics/>

How Rwanda can do better

- **Create and implement a medium-term program to boost MINEDUC's core capabilities for policy and program implementation.** Especially important at this stage of educational development in Rwanda are functions pertaining to planning and budgeting; financial and project management; data collection and data usage for monitoring and evaluation; and human resource management.⁴⁴ A systematic program for capacity building—sustained over multiple years—would engage nationals in learning by doing to gain hands-on, authentic experience in policy design and implementation. Such experience enlarges the participants' own capacity for problem-solving and contributes to building the ministry's corporate capabilities. The Financial Sector Reform and Strengthening (FIRST) Initiative—funded by five bilateral donors, the World Bank and the International Monetary Fund—offers an instructive example.⁴⁵ An external evaluation in 2014 noted its positive impact on capacity building among the participating countries which includes Rwanda.⁴⁶ Resources must be allocated for this type of capacity building effort, whether from donors or domestically financed; and the support must be provided for a sustained period of time. The medium-term program also provides a context for encouraging peer learning, knowledge exchange, and cooperation through communities of learning among policy-makers and educators at multiple levels—regional, national and local.
- **Develop graduate-level programs at the University of Rwanda to train education specialists in key technical domains.** Such programs would help build a pipeline of specialists with the relevant skills to advance the country's learning agenda. Their potential scope is broad: curriculum development including language of instruction policy and new subjects (e.g., computer science); teacher training, professional development and support; textbook and learning materials development, production and distribution; learning assessment; school leadership and instructional support to teachers; school construction; and integration of ICT-enabled instructional practices in the classroom. The programs will require careful scoping to ensure alignment with the country's priorities for student learning, an appropriate governance for quality assurance, and adequate funding for program delivery.
- **Participate in regional or international studies on student learning.** Because Rwanda has not taken part in these studies, the country lacks an external benchmark for judging the quality of its human capital and its evolution over time. Rwanda could consider, for example, participating in the learning assessments conducted by the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), which covers 16 education systems in the region. Doing so has several benefits: reveal in an objective manner the competitiveness of Rwanda's workforce vis-à-vis workers elsewhere; give policymakers and other stakeholders highly pertinent information for accountability purposes and increase the clarity of the country's learning goals.

⁴⁴ Rwanda has a functioning Education Management Information System (EMIS) to support many of these functions. Efforts to strengthen it can focus on connecting it to other sources of pertinent data, particularly data on learning outcomes collected elsewhere (e.g., by the Rwanda Education Board or district-level offices); on collecting and publishing key indicators associated with Rwanda's early grade "bulge" and tracking progress in tackling the problem at various levels of administration, including at the school level; and on publicizing the results of evaluations of efforts to universalize education with quality.

⁴⁵ Fredriksen (2016).

⁴⁶ DPMG 2014 noted, for example, that "executing agencies were able to ... produce development strategies, draft new laws and regulations" and so on. Appendix 5 extracts details from the Rwanda-specific evaluation to highlight the specific ways in which the FIRST Initiative helped build the capacity of Rwanda's financial sector.

2.5 Prioritizing reforms toward schooling for learning throughout basic education

Averting, and indeed overcoming, Rwanda's looming crisis of learning in basic education requires a reform agenda that delivers quick "wins" while building the underlying institutional capabilities to sustain systemic progress. Quick wins provide concrete examples of tangible impact on the schooling and learning of Rwanda's youth; they are vital for sparking enthusiasm and strengthening momentum for action by all stakeholders—students, teachers, parents, community leaders, and government officials. The experience thus gained, when codified through intentional learning-by-doing at all levels of service delivery, including among leaders, can help deepen institutional capabilities and supply the practical know-how for steering and spreading successful implementation throughout the system.

The dynamism of the reform process precludes an iron-clad, pre-determined recipe of short-, medium- and long-term actions. Yet, pragmatic considerations (e.g., urgency of the problem and readiness for action), along with expectations about visible progress and their multiplier effects, can guide

the choice of priorities among the actions discussed above. Table 2.1 summarizes the foregoing ideas for Rwanda's reform agenda and proposes a possible prioritization of actions in the short- medium- and long-term, as a starting point for dialogue among key stakeholders. Some of the actions can be started immediately to take advantage of a maturation of ongoing dialogue and experience, or of readily available tools for implementation.⁴⁷ Others require more preparatory work, intense dialogue, and cross-ministerial commitments of resources, and agreed assignment of decision-making authority.⁴⁸ They will, accordingly, take more time, not only to get started but also to traverse the full chain of activity linking actions to visible gains in student progression and learning. Conditions can be expected to evolve during implementation, making constant vigilance and flexible responses to emerging opportunities and possible setbacks integral to the process of policy reform. An annual stock-taking of progress, with reflections on the validity of underlying assumptions and possible need for adjustments in strategy and methods, must, therefore, be part of Rwanda's national project to improve schooling for learning in basic education.

⁴⁷ For example, agreement exists on the need to improve learning in the early grades, and many models for early grade instruction are available, some of them already implemented with success in Rwanda, albeit on a limited scale. Rwanda also has a functioning Education Management Information System which can, with possible minor adjustments, provide the school-level data required for closer monitoring and management of the early grade bulge problem.

⁴⁸ For example, school-level data will need to be gathered on the availability of a minimum package of materials and the presence of conducive conditions (including teacher competency) to inform the design of implementation strategies for investments in school and classroom construction, in-service teacher training, and in application of norm-based teacher deployment. Regarding cross-ministerial action, key among these are those relating to teacher pay and incentives, which require close collaboration with the Ministry of Finance; and control of teacher employment, deployment and promotion or dismissal (which require close collaboration with the Ministry of Local Government). In addition, engagement with teachers and with parents is essential as the success of the government's decisions depends on their sustained support and cooperation.

Table 2.1: A possible prioritization of Rwanda's reform agenda toward schooling for learning

Priority areas and related actions		Time-Frame		
		Short 1-2 years	Medium 3-5 years	Long 5+ years
A	Improve early grade progression and foundational learning			
A1	Expand access to early childhood development			
	a. Intensify efforts to reduce stunting among pre-primary children	X	X	
	b. Expand public, community-based pre-school and school readiness programs	X	X	
A2	Tighten school- & district-level management of the early grade bulge			
	a. Use age-grade norms in grade 1, and monitor key indicators closely for each school	X		
	b. Cap class size at 50 or fewer in grades 1 and 2 by hiring more teachers/assistants		X	X
A3	Expand affordable models of early grade instruction			
	a. Use accelerated reading program in grade 1, and provide reading materials to all classes	X		
	b. Change instructional practices by training early grade teachers and providing materials	X	X	
B	Remove two key impediments to learning and school continuation in basic education			
B1	Manage implementation of Language of Instruction (LOI) policy in a pragmatic fashion			
	a. Assess English proficiency of grade 4 teachers and students against benchmarks, and develop a school map of teachers' proficiency to target training and provision of materials	X	X	
	b. Identify and scale up cost-effective models of English language training for teachers, including the development of instructional materials	X	X	
B2	Reduce cost of schooling and enhance the benefits perceived by students and their families			
	a. Offer lower secondary education closer to students' homes	X	X	X
	b. Use technology for cost-effective teaching of lower secondary mathematics and science			
	c. Abolish the end-of-Grade 6 national examination		X	X
C	Strengthen professionalism of teachers, instructional leaders, and their managers			
C1	Enhance teachers' professional competence and the support they receive			
	a. For <u>serving teachers</u> : teacher guides, competency-based training and career pathways	X	X	X
	b. For <u>low-performing teachers</u> : pathways for growth and exits for persistent laggards		X	X
	c. For <u>prospective teachers</u> : better alignment of pre-service training with their future work		X	X
	d. For <u>school directors and instructional leaders</u> : better incentives and customized training	X	X	
C2	Professionalize teacher recruitment and foster career development and progression			
	a. Raise minimum qualification standards for teacher recruitment in primary education		X	X
	b. Agree workload and staffing norms to rationalize deployment, reduce double-shift teaching	X	X	X
	c. Review pay structure of teachers, allow for career progression, invest in teacher training		X	X
D	Increase public spending on basic education and strengthen implementation capacity			
D1	Mobilize and deploy resources to universalize basic education with quality			
	a. Define and cost minimum package for all schools and budget for it	X	X	
	b. Review and improve procurement and financial management at all levels	X	X	
	c. Conduct policy-sensitive projections of school expansion to assess budgets and strategy	X	X	X
D2	Augment MINEDUC capacity in critical areas of education administration			
	a. Strengthen core capabilities (e.g., planning, budgeting, procurement, data, HR, etc.)	X	X	
	b. Develop graduate-level programs at University of Rwanda in selected technical domains		X	X
	c. Participate in regional or international studies on student learning	X	X	X

3. Conclusion

Rwanda has come a long way over the past quarter century in educational development.

It has made a clear transition from recovery in the aftermath of the genocide, to a new phase of institutional strengthening to achieve schooling for learning for all young children in the country. There remains much to be done, however. Far too many children currently drop out before completing nine years of basic education and they are learning too little at school; the combined impact of these problems is to compromise the quality of the country's future workforce. According to the World Bank's newly-launched Human Capital Project, Rwanda's Human Capital Index is particularly weak in the education-related sub-components. The country is aware of the challenges and has responded with relatively sound overarching policies and plans.

The key now is to increase attention to implementation. Rwanda can aim higher and deliver better results. In this regard, the World Bank's regional study, *Facing Forward*, offers ideas

for consideration, based on experience from sub-Saharan Africa and elsewhere. Four broad priorities appear especially relevant for Rwanda. First, improve early grade progression and foundational literacy and numeracy; second, remove critical impediments to school progression and learning, key among them the transition to English as the language of instruction, and cost- and quality-related barriers to schooling; third, strengthen the professional competence of teachers, their managers and instructional leaders; and fourth, increase public spending on basic education and ensure wise use of the budget to deliver schooling for learning—by strengthening MINEDUC's capacity in key areas of education administration, including accountability through benchmarking of student learning. The country can engage actively in tackling these challenges through learning-by-doing. Doing so will deepen its capacity to sustain the reform momentum, which would be essential to firmly establish the country's human capital base for its socio-economic transformation in the coming years. Persevering toward this goal is as essential as it is promising.

APPENDIXES

Appendix Table A1: International and regional learning assessments in Sub-Saharan Africa

Assessment ^{a/}	Grade ^{b/}	Countries	Subjects	Minimum Proficiency	Examples of Minimum Proficiency
PISA+	Age 15	Mauritius	Reading	Level 2 and above	Reading: can locate and recognize main idea in text, interpret and integrate parts of text.
			Math		Math: can solve problems using whole numbers.
			Science		Science: can make literal interpretations of the results of scientific inquiry.
TIMSS	8	Botswana, Ghana, South Africa	Math	Low International Benchmark and above	Math: has some knowledge of whole numbers and decimals.
			Science		Science: has some basic knowledge of biology, chemistry, physics, and earth science. Interprets simple pictorial diagrams and applies basic knowledge to practical situations.
PASEC	2, 6	10 Franco-phone countries	Reading	Level 3	Reading (grade 6): can combine, extract and locate implicit information.
			Math	Level 2	Math (grade 6): can answer brief arithmetic, measurement and geometry questions.
SACMEQ	6	16 education systems	Reading	Level 4	Reading: can read text, and link and interpret disparate information in the text.
			Math	Level 4	Math: can translate verbal or graphic information into simple arithmetic operations; can use multiple different arithmetic operations on whole numbers, fractions and/or decimals.
SDI	4	7 countries	Reading	--	Reading: can read a sentence aloud
			Math		Math: can solve a word problem
EGRA	2, 3	9 countries ^{c/}	Reading	--	Oral reading: obtains any score above zero

Source: Bashir *et al.* 2018.

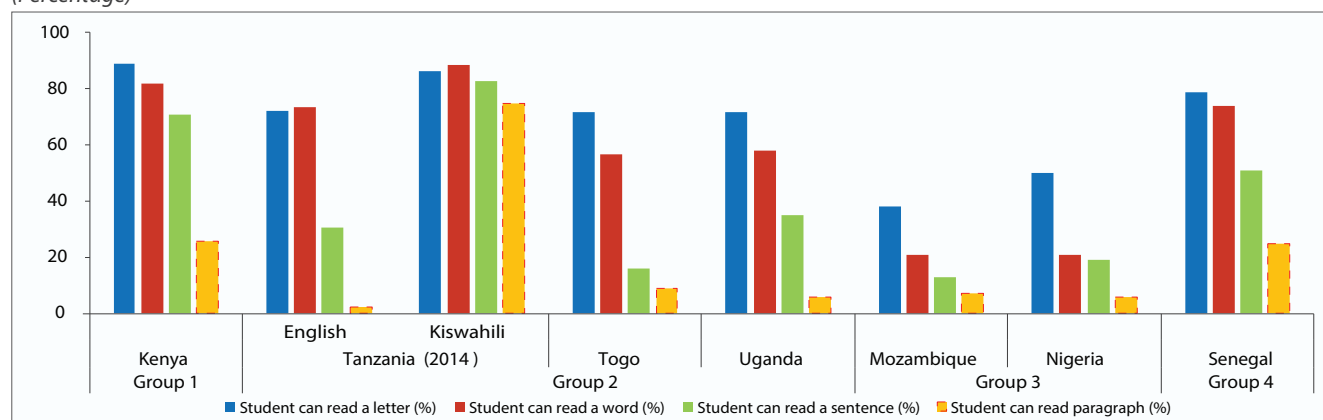
^{a/} The assessments in this column refer to Programme for International Student Assessment (PISA; the plus sign refers to 10 additional participating countries in 2009); Trends in Mathematics and Science Survey (TIMSS); *Programme d'Analyse des Systèmes Éducatifs des Pays de la Conférence* (PASEC); Southern African Consortium for the Measurement of Educational Quality (SACMEQ); Service Delivery Indicators (SDI); and Early Grade Reading Assessment (EGRA).

^{b/} For PISA+, the test-takers were 15-year-olds.

^{c/} Includes Rwanda where 4th and 6th graders took an EGRA test for assessing 2nd and 3rd graders' reading proficiency.

Appendix Figure A1: Percentage of Grade 4 completers who can read a letter, word, sentence and paragraph, selected sub-Saharan Countries, 2000s

(Percentage)



Source: Bashir *et al.* 2018.

Note: data are from the Service Delivery Indicators surveys conducted during the 2000s; see Box 2.1 in the text for explanations about the four country groupings.

Appendix 1: Rwanda's Home-Based Early Childhood Development Services

The World Bank is collaborating with other partners to support the Government of Rwanda's effort to reduce stunting through a multisectoral program comprising the Stunting Prevention and Reduction Project and Strengthening Social Projection Project, both effective from 2018. Early childhood development (ECD) serves, among others, as an entry point, in line with the government's new ECD policy. Both projects have components aiming at strengthening services provided through home / community-based ECD / childcare sites. The experience of several NGOs in Rwanda (i.e. Imbuto Foundation, CARE International) found that the home / community-based model is cost-effective, encourages parental involvement, and represents a good option for reaching children too young to attend ECD centers.

Home / community-based ECD sites supported under the projects are expected to serve as models in their communities with caregiving provided by parents, fostering ownership and building solidarity. Caregiving is envisaged to be provided by a lead caretaker selected by parents and one rotating assistant (possibly a beneficiary of the Expanded Public Works home / community-based model). Parents are expected to contribute to the functioning of the home/community-based ECD groups through in-kind contributions (e.g., ingredients for nutritious meals to be provided to children daily). Home / community-based ECD groups will receive support from Community Health Workers and other community-based proximity service volunteers (agriculture, Water, Sanitation and Hygiene (WASH), friends of the family), to disseminate messages most efficiently to groups of mothers. Implementation will be gradual to allow for learning and corrective action.

The project funds: training of caregivers; equipment and basic supplies; hand washing stations and latrines (as needed); and small grants. Each home/community-based ECD group is expected to comprise 10-15 children, up to five years of age. The package of services includes early learning and stimulation, parenting/childcare education, hygiene and sanitation education, and complementary feeding and cooking demonstrations. Mothers with children under two years old represent a special target group, given the importance of reaching children in the 1,000-day window. Parents of young children up to 24 months are expected to visit a home/community-based ECD site in their neighborhood to discuss challenges and share practical solutions.

Source: World Bank (2018c)

Appendix 2: Ethiopia's Experience in Countrywide Teaching in Local Languages

The Context: A Microcosm of Polyglot Sub-Saharan Africa

More than 90 languages are spoken by Ethiopia's estimated 92 million people. However, as in many other Sub-Saharan African countries, there are several large language groups, together with a large number of languages spoken by a relatively smaller number of people.

Oromo and Amharic together are spoken by about 63 percent of the population. Somali and Tigrinya are spoken by about 5–6 percent of the population, with other language groups being spoken by about 1–2 percent of the population. The Southern Nations, Nationalities, and Peoples (SNNP) Region is the most linguistically diverse state, with an estimated 56 languages and 31 used as languages of instruction.

In one respect, however, Ethiopia differs from much of the region: Because it did not have a long history of colonialism, the use of English or other European languages is not as widespread among the population as in many other Sub-Saharan African countries (World Bank 2017).

Language-of-Instruction Policy and Key Results

With the advent of a new government in 1991, Ethiopia adopted one of the most comprehensive language-of-instruction (LOI) policies in the region. The Education and Training Policy of 1994 called for the use of the mother tongue as the language of instruction in grades one through eight, as well as for primary teacher training to be in the relevant language. All students learn Amharic as a national language, although the policy does not indicate when the study of this language should begin. English is taught as a subject from grade one and is the LOI from grade nine onward. In practice, the states have the right to determine the grade in which English can be introduced as language of instruction, and some have introduced it in grade five or grade seven. Before the 1994 policy, all Ethiopian students were taught in Amharic.

An analysis of Ethiopia's national learning assessments in science, mathematics, and English at the end of grade eight in 2000 and 2004 found that children who were taught in the mother tongue for eight years of primary education consistently performed better than those who were taught in the mother tongue for five years and in English in the upper-primary grades (Heugh *et al.* 2007).

In SNNP, children who had learned first in the mother tongue performed better on grade five mathematics and literacy tests in English. The study used data from the Young Lives project and exploits two sets of differences in policy implementation: (a) children transfer to English language instruction in grades seven or nine in other states, and (b) a substantial number of children in SNNP are taught in a language that is not their mother tongue (Seida 2017).

Another study found that the introduction of the mother-tongue-based instruction policy in schools had a positive effect on primary school completion rates (Ramachandran 2012). The study used the Amharic language group as the control group (which faced no change after the 1994 policy) and compared it with the Oromo language group in four regions of the country where, after 1994, students could get primary schooling in their own language. Using data from the 2011 Demographic and Health Survey, the analysis showed that the change led to an increase of 0.75 to 1 year of schooling.

Language Policy Implementation

Ethiopia's "trilingual" policy (mother tongue, Amharic, and English) has been implemented nationally, albeit with variation across states, through the preparation and production of textbooks and learning materials in mother tongue, training of teachers in mother-tongue instruction, and examinations conducted in the language of instruction. By 2017, 51 languages had been adopted as LOI, compared with only Amharic before 1994.

All donors have supported the policy. About 106 million textbooks in seven mother tongues for primary grades and an additional 37 million supplementary materials were printed in the past 10 years under the donor-funded General Education Quality Improvement Program (Phases 1 and 2). For other languages, regions have printed their own textbooks. Because teachers are recruited by districts (woredas), native-language teachers are more easily trained and deployed according to specific language requirements.

Appendix 3: Ethiopia's Experience in Upgrading Primary School Teachers' Qualification

Ethiopia's 1994 Education and Training Policy specified new qualifications for teachers. Teachers in Grades one to four (the lower primary or first cycle) were required to possess a certificate-level qualification (10 years of general schooling plus one year of teacher training); teachers in Grades five to eight (the upper primary or second cycle) were required to possess a college diploma (10 years of general school plus three years of teacher training). The new policy presented an enormous challenge of scale, as the majority of teachers—about 85 percent in 1996—were certificate holders. Continuing concerns about the ability and skills of teachers led the government to adjust the policy in 2004/05. In that year, the Ministry of Education discontinued the 1-year certificate program and required new teachers for both cycles of primary education to be trained through the 3-year diploma program.

The policy change in 2004/05 also targeted serving teachers, thus triggering a greatly expanded program of teacher upgrading to meet the new minimum standards of qualification. Serving teachers with only a certificate-level qualification could upgrade to diploma-level qualification through a 3-year in-service program. The program requires participants to learn through self-study modules; participate in two face-to-face tutorials annually, each lasting three days; and receive six weeks of residential training each summer for the three-year duration of the program.

The scale of the upgrading program was massive. In 2004/05, only 3% of the country's 110,945 first-cycle teachers, and 55% of its 60,134 second-cycle teachers had a diploma or higher qualification. In 2016/17, the shares of such teachers have grown significantly: to 73% among the country's 247,115 first-cycle teachers, and 95% among its 193,206 second second-cycle teachers. Because salaries are linked to teachers' educational qualification, the upgrading exercise has increased the government's wage bill for teachers. In the decade from 2006/07 to 2016/17, spending on teacher wages rose more than nine times, driven mainly by a 7.6-fold increase in the number of teachers with at least a diploma-level qualification, and a nearly two-fold increase in the aggregate size of the teacher cadre.

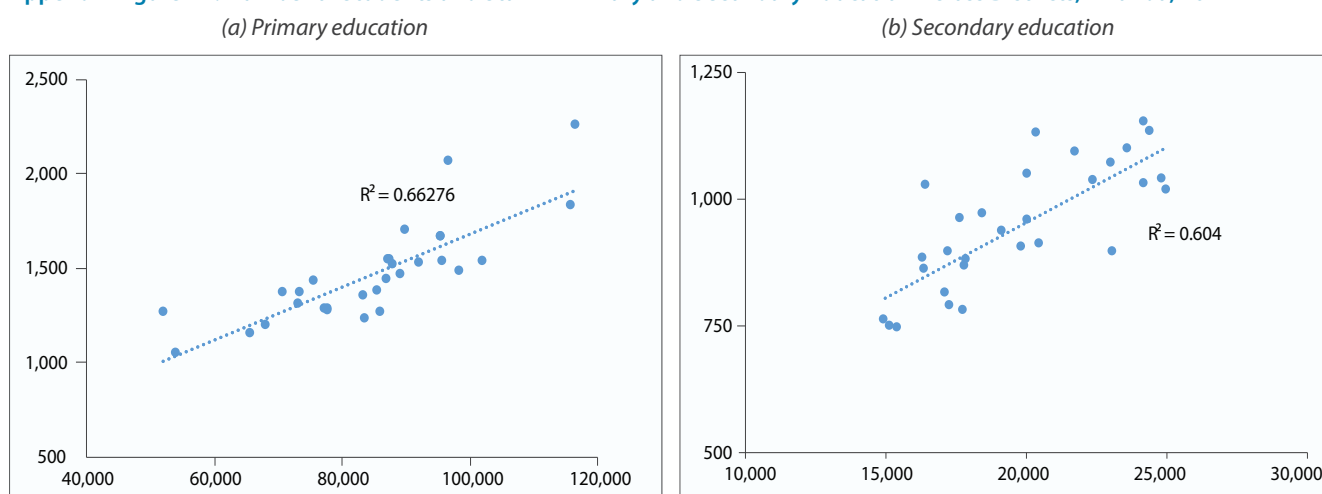
The increase in teachers' educational qualification has raised the status of teachers. More work has to be done to assess whether the modality of providing the upgrading program can be made more effective. Further, as other research shows, unless the content of the upgrading program addresses the question of changing teacher behavior in the classroom, and unless these changes are reinforced by continuous professional support as well as by greater monitoring and accountability, upgrading qualifications alone is unlikely to lead to gains in student learning.

Source: Govt. of Ethiopia (1994, 2010); World Bank (2008) and staff notes.

Appendix 4: Randomness in Staffing of Schools across Regions in Rwanda

When teachers are allocated across schools with little regard to enrollments, it creates highly variable conditions for teaching and learning. The better-staffed schools can operate with favorable pupil-teacher ratios and take advantage of material resources to provide conducive environments for teaching and learning, while the worst-off schools typically struggle to do the same, often without success, in overcrowded classrooms. Analysis of school-level in Bashir *et al.* (2018) document the prevalence of inconsistent teacher allocation across schools in SSA countries.⁴⁹ For Rwanda, recent school-level data are unavailable, but the district-level information provides some insight. These data suggest that while the number of teachers and other personnel in a district is correlated to the number of students in the district, the relationship is relatively loose in both primary and secondary education, as the corresponding regression R² statistic suggests (Appendix Figure A2). Because of the aggregate nature of the data, the evidence is suggestive and needs to be confirmed with more detailed analysis of school-level data. Tightening the consistency of teacher distribution would help ensure that all schools are adequately staffed to reduce overcrowding in the classrooms. The budget execution process provides a useful tool for this purpose, but success will depend on agreed staffing norms established through informed negotiations among key stakeholders and decision makers at the local level.

Appendix Figure A2: Number of Students and Staff in Primary and Secondary Education Across Districts, Rwanda, 2017



Source: analysis of data for 2017 in Government of Rwanda (2017).

Note: the x-axis denotes the number of students; the y-axis, the number of staff. The data refer to all schools and all staff; the R² statistic is share of staffing variation explained by variation in number of students enrolled in the district.

⁴⁹ Bashir *et al.* 2018 use school-level data (typically from 2006-2015) to compare teacher allocation across countries. For each country for which such data exist, they estimate a linear regression relating the number of teachers to the number of students and use the regression R² to denote the consistency of the relationship between the two variables; the complement, 1-R², denotes the influence of factors other than a school's enrollment on the number of teachers on staff. In Bashir *et al.* 2018 1-R² is called the index of randomness. In primary education, the index ranges from less than 0.20 (e.g., Lesotho, Mauritius, and Zimbabwe, all Group 1 countries), to as high as 0.80 (e.g. Benin and Zambia, both Group 3 countries). In secondary education, it ranges from less than 0.10 in Zimbabwe, to a high of about 0.50 in Mozambique and the Democratic Republic of Congo.

Appendix 5: Building Capacity in Rwanda's Financial Sector

An evaluation of the Financial Sector Reform and Strengthening Initiative (FIRST) project in Rwanda, prepared by the University of Southern California's Development Portfolio Management Group, contains the following assessment of the project's impact on various aspects of capacity in the country's financial sector:

"Over the past decade, the financial system in Rwanda has become stronger, more diversified, stable, and inclusive. Financial Sector Reform and Strengthening Initiative (FIRST) projects have contributed in a substantial way to that outcome. In Phase I and Phase II, FIRST financed 10 projects in Rwanda, two [Financial Sector Development Strategies] FSDSs and eight operational Technical Assistance (TA) grants. Total commitments amounted to just under \$3 million. Two projects executed by the International Monetary Fund (IMF) focused on bank regulation and supervision. Two of the other six projects dealt with insurance regulation and supervision, one focused on regulation of savings and credit cooperatives (SACCOs) and part of another project supported pension regulation and supervision. Other FIRST funds went to improve the payments systems, establish a credit bureau and implement recommendations made in the [Financial Sector Development Plan] (FSDP) I report ...

"Though catalytic in form, the many grants to Rwanda functioned more like a programmatic grant. The concentration of effort in the field of regulation and supervision and with multiple grants covering a specific area turned the individual grants into a more coherent program, making the whole something more than the sum of the individual parts. The focus on financial regulation and supervision will continue with the Phase III programmatic grant. Specifically, the new grant will support strengthening of the legal and regulatory framework for banking and insurance, increase supervisory capacity for banking, insurance, pensions, microfinance, and SACCOs and develop a crisis preparedness and contingency planning framework. One element in the programmatic grant is designed to strengthen supervision capacity for SACCOs, building largely on what has been done earlier but shifting to risk-based supervision. This is an example of a programmatic approach undertaken by FIRST in response to recommendations made by prior evaluations

"Because the National Bank oversees most financial market supervision, the projects contributed substantially to the strengthening of that institution. Training of National Bank staff was an important component of several of the projects. However, the National Bank has had problems retaining trained staff. Much of the value of training may be lost if those people leave. Hence the policies and labor practices of the client may be central to a project's longer-term success and should be considered as part of any training program. This raises a broader issue: training may not be enough to strengthen institutions if existing policies and practices undermine the institutions' strength."

Source: USCDPMG (2014).

REFERENCES

- Abadzi, H. (2008). *"Efficient Learning for the Poor: New Insights into Literacy Acquisition for Children,"* International Review of Education 54:581–604.
- Altinok, N. (2013). *"The Impact of Teacher Knowledge on Student Achievement in 14 Sub-Saharan African Countries."* Paper commissioned for Education for All (EFA) Global Monitoring Report 2013/14, Teaching and Learning: Achieving Quality for All. Paris: United Nations Educational, Scientific, and Cultural Organization.
- Bashir, S.; M. Lockheed; E. Ninan; and J.P. Tan. (2018). *"Facing Forward: Schooling for Learning in Africa."* Washington, DC: World Bank.
- Bietenbeck, J., M. Piopiunik, and S. Wiederhold. (2017). *"Africa's Skill Tragedy: Does Teachers' Lack of Knowledge Lead to Low Student Performance?"* Journal of Human Resources. doi:10.3368/jhr.53.3.0616-8002R1.
- BNR. (2017). New regulation on credit classification and provisioning. National Bank of Rwanda - Regulations: <https://www.bnr.rw/index.php?id=275>
- BNR. (2018a). Exchange Rate Archives. Kigali. <https://www.bnr.rw/index.php?id=89>
- . (2018b). External Sector Statistics. Kigali. <https://www.bnr.rw/index.php?id=123>
- . (2018c). Financial Sectors Statistics. <https://www.bnr.rw/index.php?id=335>
- . (2018d). Monetary Survey Statistics. Kigali. <https://www.bnr.rw/index.php?id=292>
- . (2018e). Monthly Interest Rates. <https://www.bnr.rw/index.php?id=268>
- . (2018f). Press Release: The National Bank of Rwanda maintains Key Repo Rate at 5.5% in 2018Q4. Kigali. https://www.bnr.rw/fileadmin/user_upload/Press_Release.pdf
- Bold, T.; D. Filmer; G. Martin; E. Molina; B. Stacy; C. Rockmore; J. Svensson; and W. Wane. (2017). *"Enrollment Without Learning: Teacher Effort, Knowledge, and Skill in Primary Schools in Africa,"* Journal of Economic Perspectives 31 (4): 185-204.
- Cantwell, N. (1997). *"Starting from zero: The promotion and protection of children's rights in post-genocide Rwanda, July 1994-1996."* Innocenti Insights. Florence, Italy: International Child Development Centre, UNICEF.
- Cilliers J, Taylor S, (2017). *"Monitoring Teachers and Changing Teaching Practice: Evidence from a Field Experiment,"* Georgetown University.
- Clist, P.; B. Whitty; J. Holden; P. Abbot; K. Latimer; K. Reid; and C. Boyd. (2015). *"Evaluation of Results-Based Aid in Rwandan Education: Final Evaluation Report,"* Kigali, Rwanda: Upper Quartile and Rwanda Institute of Policy Analysis and Research.
- Crouch, L. and K.A. Merseth. (2017). *"Stumbling at the first step: Efficiency implications of poor performance in the foundational first five years,"* Prospects 47 (3): 175–196.
- De Ree, J.; K. Muralidharan; M. Pradhan; and H. Rogers. (2018). *"Double for nothing? Experimental evidence on an unconditional teacher salary increase in Indonesia,"* Quarterly Journal of Economics, 133(2):993-1039.
- DeStefano, J.; W. Ralaingita; M. Costello; A. Sax; and A. Frank. (2012). *"Early grade reading and mathematics in Rwanda: Final report (p. 3),"* Research Triangle Park, NC: RTI International.
- EDC (Education Development Center). (2016). *"Early-Grade Literacy in Rwanda: Taking Stock in 2016,"* Waltham: EDC.
- Engle, P. L.; M. M Black; J. R. Behrman; M. Cabral de Mello; P. Gertler; L. Kapiriri; Young, M.E. 2007. *"Strategies to Avoid the Loss of Developmental Potential in More than 200 Million Children in the Developing World."* Lancet 369(9557):229-242.
- Evans, D.K.; A. Popova. (2016). *"What Really Works to Improve Learning in Developing Countries? An Analysis of Divergent Findings in Systematic Reviews,"* World Bank Research Observer, 31 (2): 242–270.
- Fredriksen, B. (2016). *"Improving the Performance of Education Systems in Sub-Saharan Africa: Capacity Development through Increased Technical and Knowledge Support,"* Discussion paper, Washington D.C.: World Bank:
- Friedlandher, E.; A.P. Niyibizi; S. Cozzolino; and S. Malik. (2016). The Literacy Boost Program and its Implementation in Rwanda. In E. Friedlander and C. Goldenberg (eds.), *Literacy Boost in Rwanda: Findings from a Two Year Randomized Control Trial*. Stanford, CA: Stanford University.
- Gove, A.; M.K. Poole; and B. Pipe. (2017). *"Designing for Scale: Reflections on Rolling Out Reading Improvement in Kenya and Liberia,"* New Directions for Child and Adolescent Development 158, (25-41), Wiley Online Library.

- Government of the Federal Democratic Republic of Ethiopia (1994). Education and Training Policy. Addis Ababa: Federal Ministry of Education.
- Government of the Federal Democratic Republic of Ethiopia (2010). Education Sector Development Program IV (ESDP IV) 2010/2011 – 2014/2015: Addis Ababa: Federal Ministry of Education.
- Government of the Federal Democratic Republic of Ethiopia (various years). Education Statistics Annual Abstract. Addis Ababa: Federal Ministry of Education.
- Government of Rwanda. (2017). *“Education Statistics,”* Kigali, Rwanda: Ministry of Education (<http://mineduc.gov.rw/resource/statistics/statistical-year-books/>).
- Heugh, K., C. Benson, B. Bogale, and M. A. G. Yohannes. 2007. *“Final Report Study on Medium of Instruction in Primary Schools in Ethiopia.”* Study commissioned by the Ministry of Education, Federal Democratic Republic of Ethiopia, Addis Ababa.
- Honeyman, C. (2017). *“Accountability practices and policies in Rwanda’s education system,”* country case study prepared for the 2017/8 Global Education Monitoring Report on Accountability in education; Meeting our commitments, Paris: UNESCO (ED/GEMR/MRT/2017/C1/9).
- Hungi, N. (2011). *“Accounting for Variations in the Quality of Primary School Education.”* SACMEQ Working Paper 7, Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), Gaborone, Botswana.
- IMF. (2018). Rwanda: Ninth Review Under the Policy Support Instrument. IMF Country Report No. 18/167, Washington, DC.
- Kraft M.A.; D. Blazar; D. Hogan. (2017). *“The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence,”* Harvard University.
- Maalouf-Manasseh, Z.; I. Oot; and K. Sethuraman. 2015. Giving Children the Best Start in Life: Integrating Nutrition and Early Childhood Development within the First 1,000 Days. Washington, DC: FHI 360/FANTA.
- Muyombano, A. and M. Mbabazize. (2016). *“Contribution of Umwalimu Savings and Credit Cooperative (Umwalimu Sacco) On Socio-Economic Development of Teachers in Rwanda,”* International Journal of Scientific and Research Publications 6 (12) December.
- NAEB. (2018). Monthly Reports. Kigali. <http://www.naeb.gov.rw/index.php?id=174>
- Nation, I. (2006). *“How Large a Vocabulary Is Needed for Reading and Listening?”* Canadian Modern Language Review 63 (1):59-82.
- Mingat, A.; B. Ledoux; and R. Rakotomalala. 2010. Developing post-primary education in Sub-Saharan Africa: assessing the financial sustainability of alternative pathways, Africa Region Human Development series, Washington D.C.: The World Bank.
- NISR. (2018a). Consumer Price Index (CPI)-September 2018. <http://www.statistics.gov.rw/publication/consumer-price-index-cpi-september-2018>
- . (2018b). Labour Force Survey Report (August 2017). Kigali: NISR. <http://www.statistics.gov.rw/publication/labour-force-survey-report-august-2017>
- . (2018c). Seasonal Agricultural Survey Report - Season A 2018. Kigali. <http://www.statistics.gov.rw/publication/seasonal-agricultural-survey-report-season-2018>
- . (2018d). GDP - National Accounts (Fiscal Year 2017/18). Kigali: NISR. <http://www.statistics.gov.rw/publication/gdp-national-accounts-fiscal-year-201718>
- . (2018e). GDP National Accounts (Second Quarter 2018). Featured Reports, Kigali. <http://www.statistics.gov.rw/publication/gdp-national-accounts-second-quarter-2018>
- Nzabalirwa, W. (2014). *“Rwanda: An Overview,”* in Charl Wolhuter (ed.), Education in East and Central Africa. New York: Bloomsbury.
- Obura, A. (2003v). *“Never again: Educational reconstruction in Rwanda,”* UNESCO International Institute of Educational Planning, Paris: UNESCO.
- Ouane, A.; and C. Glanz, eds. (2011). Optimising Learning, Education and Publishing in Africa: The Language Factor—A Review and Analysis of Theory and Practice in Mother-Tongue and Bilingual Education in Sub-Saharan Africa. Hamburg: UNESCO Institute for Lifelong Learning (UIL); Tunis: Association for the Development of Education in Africa (ADEA).
- PEFA (Public Expenditure and Financial Accountability) Secretariat. (2017). *“PEFA Assessment Report of Rwanda (2016),”* PEFA Secretariat, Washington D.C.
- Popova A.; D.K. Evans; and V. Arancibia. (2016). *“Training Teachers on the Job: What Works and How to Measure It,”* Policy Research Working Paper 7834, World Bank, 2016.

- Ramachandran, R. 2012. *“Language Use in Education and Primary Schooling Attainment: Evidence from a Natural Experiment in Ethiopia.”* Working Paper No. 2012/34, Institut d’Economia de Barcelona (IEB).
- RBD; BNR; NISR; PSF. (n.d.). Foreign Private Capital Census Reports (2010-2017). <http://www.statistics.gov.rw/datasource/foreign-private-capital-census>
- RRA. (2015). RRA Strategic Plan 2015/16-2017/18. http://www.old.rra.gov.rw/IMG/pdf/rra_strategic_plan_2015-2018_for_publication.pdf
- Samuelson, B.; S. Freedman. (2010). *“Language policy, multilingual education, and power in Rwanda,”* Language Policy 9 (3): 191-215.
- Seida, Y. 2017. *“The Impact of Learning in Mother Tongue First: Evidence from a Natural Experiment in Ethiopia.”* Paper, International Growth Center, London School of Economics and Political Science.
- Tatto, M. T., ed. 2013. The Teacher Education and Development Study in Mathematics (TEDS-M) Policy, Practice, and Readiness to Teach Primary and Secondary Mathematics in 17 Countries. Amsterdam: International Association for the Evaluation of Educational Achievement (IEA).
- Trudell, B. (2016). *“The Impact of Language Policy and Practice on Children’s Learning: Evidence from Eastern and Southern Africa.”* Impact review commissioned by the United Nations Children’s Fund (UNICEF) Eastern and Southern Africa Regional Office, UNICEF, New York.
- Ugandan Ministry of Education and UNESCO – IIEP Pôle de Dakar. (2014) *“Teacher Issues in Uganda: A shared vision for an effective teachers policy”* Paris: UNESCO.
- USCDPMG (University of Southern California’s Development Portfolio Management Group). (2014). *“Financial Sector Reform and Strengthening Initiative’s (FIRST) Phase II Evaluation; Final Report.*
- Westbrook J., N. Durrani, R. Brown, D. Orr, J. Pryor, J. Boddy, and F. Salvi. (2013). *“Pedagogy, Curriculum, Teaching Practices and Teacher Education in Developing Countries.”* Final Report, Education Rigorous Literature Review, Centre for International Education, University of Sussex, Brighton, UK.
- World Bank (2008). General Education Quality Improvement Program (GEQIP) Program Appraisal Document Report No.: 45140-ET, Washington D.C.: The World Bank.
- World Bank Group (Macroeconomic, Trade & Investment, Poverty & Equity). (2018). Macro Poverty Outlook: Country-by-country Analysis and Projections for the Developing World. http://macro-povertyoutlook.worldbank.org/mpo_files/mpo-am18.pdf
- World Bank. 2017. *“Country Partnership Framework for the Federal Democratic Republic of Ethiopia for the Period FY18–FY22.”* May 22, 2017. Report No. 115135-ET, World Bank, Washington, DC.
- World Bank Group. (2018a). Africa’s Pulse, No. 18, October 2018: An Analysis of Issues Shaping Africa’s Economic Future. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/30455>
- . (2018b). Global Economic Prospects: The Turning of the Tide? Washington, DC: World Bank Group. Retrieved August 2018, from <https://openknowledge.worldbank.org/handle/10986/29801>
- . (2018c). Prospects-Global Monthly, September edition. World Bank, Development Economics. World Bank. <http://pubdocs.worldbank.org/en/762431537476208633/Global-Monthly-Sep18.pdf>
- World Bank. (2011a). *“Vietnam. High-Quality Education for All by 2020. Vol. 1: Overview/Policy Report,”* Washington D.C.: Human Development Department East Asia and Pacific Region.
- World Bank. (2011b). *“Rwanda Education Country Status Report: An Education System in Transition; a Nation in Transition.”* Washington, DC: World Bank.
- World Bank. (2018a). *“Human Capital Project. Country Brief for Rwanda,”* Washington D.C.: World Bank (at <http://www.worldbank.org/en/publication/human-capital>
- World Bank. (2018b). Rwanda Economic Update, Tackling Stunting: An Unfinished Agenda, Washington D.C.: World Bank
- World Bank. (2018c). Rwanda Stunting Prevention and Reduction Project, Project Appraisal Report No: PAD2536, Washington D.C: World Bank.
- World Bank. 2019. *“Future Drivers of Growth in Rwanda: Innovation, Integration, Agglomeration, and Competition.”* Conference Edition. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO

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