

# Rwanda Economic Update

June 2018 | Edition No. 12

## *Tackling Stunting: An Unfinished Agenda*





# **Rwanda Economic Update**

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*Tackling Stunting: An Unfinished Agenda*

*June 2018*



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## ACRONYMS

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<b>BNR</b>	National Bank of Rwanda
<b>CAD</b>	Current Account Deficit
<b>DHS</b>	Demographic Health Survey
<b>DPEM</b>	District Plans to Eliminate Malnutrition
<b>EAC</b>	East Africa Community
<b>ECD</b>	Early Childhood Development
<b>EMDEs</b>	Emerging Markets and Developing Economies
<b>FDI</b>	Foreign Direct Investment
<b>FY</b>	Fiscal Year
<b>GDP</b>	Gross Domestic Product
<b>GEP</b>	Global Economic Prospects
<b>ICT</b>	Information and Communication Technology
<b>IMF</b>	International Monetary Fund
<b>MINECOFIN</b>	Ministry of Finance and Economic Planning
<b>MPFSS</b>	Monetary Policy and Financial Stability Statement
<b>NECDP</b>	National Early Childhood Development Coordination Program
<b>NEER</b>	Nominal Effective Exchange Rate
<b>NISR</b>	National Institute of Statistics of Rwanda
<b>NPL</b>	Nonperforming Loans
<b>PIH</b>	Partners in Health
<b>REER</b>	Real Effective Exchange Rate
<b>REU</b>	Rwanda Economic Update
<b>Rwf</b>	Rwandan Franc
<b>SSA</b>	Sub-Saharan Africa
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNECA</b>	United Nations Economic Commission for Africa
<b>UNICEF</b>	United Nations Children's Fund
<b>US\$</b>	United States Dollar
<b>USA</b>	United States of America
<b>VAT</b>	Value-added Tax
<b>WDI</b>	World Development Indicators
<b>WFP</b>	World Food Program

## FOREWORD

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Welcome to the 12<sup>th</sup> edition of the Rwanda Economic Update (REU). The REU, 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.

The 12<sup>th</sup> edition of REU was jointly prepared by World Bank Group teams Rwanda Macroeconomics, Trade and Investment Global Practice, and Health, Nutrition and Population Global Practice. The teams were led by Aghassi Mkrtchyan (Senior Economist) and Miriam Schneidman (Lead Health Specialist). Peace Aimee Niyibizi (Economist) contributed to the analysis of recent macroeconomic developments. Jonathan Kweku Akuoku (Consultant) and Meera Shekar (Lead Health Specialist) contributed to the selected topic. The REU-12 was prepared under the general guidance of Diarietou Gaye (Country Director), Abebe Adugna (Practice Manager), Magnus Lindelow (Practice Manager) and Yasser El-Gammal (Country Manager). Rogers Kayihura (Communications Officer), Nancy Umwiza (Team Assistant) and Karima Ladjo (Program Assistant) supported the team. Naoko Kojo (Senior Economist), Tihomir Stucka (Senior Economist), and Paul Jacob Robyn (Senior Health Specialist) were peer reviewers.

Although this Economic Update does not represent the official views of the Rwandan authorities, the macroeconomic division of the Ministry of Finance and Economic Planning (MINECOFIN) was engaged in its formulation and provided valuable comments; the World Bank teams appreciate their contributions.



## EXECUTIVE SUMMARY

### *Recent Economic Developments*

**Rwanda's economy rebounded in the second half of 2017.** The rebound, driven by improved export performance and revitalized agriculture, pushed annual growth to 6.1 percent and led to upward revisions of the growth projections for 2018 and 2019. However, although growth is currently recovering and is more balanced, it will most likely continue to be below the high rates achieved during the 2013–15 investment push.

**Agriculture and services drove growth as construction remained subdued.** In 2017 favorable weather brought a substantial pick-up in agriculture, and growth in services accelerated to 8 percent. Industrial growth is slow because construction has continued to contract. On the demand side, mirroring positive developments in agriculture, private consumption went up, modestly (after falling in 2016). For the second year in a row, in 2017 net exports contributed to growth, suggesting that recent growth has become more balanced.

**Rwanda experienced a major external adjustment in 2017.** A mix of factors, among them prudent demand management, a more competitive exchange rate, higher prices for commodity exports, and continued expansion of nontraditional exports, helped to reduce the current account deficit (CAD) from more than 15 percent in 2016 to about 7 percent in 2017, a level in line with historical data before the investment push worsened external imbalances. This allowed the National Bank of Rwanda (BNR) to build up official foreign exchange reserves.

**Inflationary pressures subsided in the second half of last year and the exchange rate was relatively**

**stable.** With food production higher and food prices lower, headline inflation was reduced to just 0.7 percent by December 2017 after peaking at 8 percent in February. The relative stability of the nominal exchange rate has helped to slow inflation. Thus, the National Bank of Rwanda (BNR) was able to pursue an accommodative monetary policy with a third rate cut of the policy rate in December 2017. Credit growth, which had already bottomed out, is showing signs of opening up.

**The fiscal stance expanded slightly in the first half of FY 2017/18.** Domestic revenues did quite well, though taxes on international trade fell short of projections because of weak imports. The increase in public outlays was driven by net lending and capital spending. The government accumulated some domestic arrears, but they add up to no more than an estimated 0.8 percent of GDP. In 2017, public external debt hit 48 percent of GDP. Rwanda's risk of debt distress remains low.

**The World Bank Group projects the GDP growth to accelerate to 7.2 percent in 2018, to 7.5 percent in 2019 and 7.8 percent in 2020.** These projections are higher than those in the REU released in December 2017 because of the growth momentum evident in exports and agriculture and the notable narrowing of external imbalances. A more competitive exchange rate is already a solid support for nontraditional exports, an important source of future growth. The government's renewed commitments to scaling up investments in agriculture will enhance that sector's medium-term outlook. Monetary policy is expected to continue to support growth in credit. The fiscal deficit for 2018–20 is expected to be around 4 percent of GDP, with the CAD holding at about 8 percent.

**Yet, risks remain.** The possibility that poor weather will affect agriculture, which is mainly rain-fed, is a major concern considering the growth slowdown in the second half of 2016 and the first half of 2017. In the second agricultural season of 2017, only 4.6 percent of the intensively cropped land was irrigated. Externally, a reversal in the global recovery could depress prices of Rwanda's main exports. In addition, the private sector's unenthusiastic response to the improved investment climate is a major threat to growth sustainability. The recent growth slowdown has exposed the limitations of the public-investment-led model and heightened the importance of the private sector.

### **Tackling Stunting: An Unfinished Agenda**

**Rwanda has met or exceeded most Millennium Development Goal targets.** However, chronic although malnutrition or stunting (*Kugwingira*), which signals that children are growing too slowly, has declined from about 50 percent (2005) to 38 percent (2014/2015) of children under 5, is still a major outlier. Stunting tends to be an invisible problem in Rwanda, depriving children of their right to grow, thrive, and reach their full potential. Stunting delays cognitive development and lowers educational attainment and lifetime earnings. Children who are stunted are trapped early in a vicious cycle of poverty, because their brain development had been compromised by the time they reached the age of two and the damage is largely irreversible. Childhood stunting increases the potential for intergenerational transmission: mothers who were malnourished are more likely to have stunted children. Stunting also deprives the economy of quality human capital that is critical to attaining Rwanda's aspiration to become a middle-income country.

**Chronic malnutrition is pervasive, with stunting levels of high (> 30 percent) or very high (>40 percent) public health significance in most districts.** Not surprisingly, stunting rates are highest

among the poorest households and those living in rural areas (nearly 50 percent), but even about 25 percent of children from the top two wealth quintiles suffer, which suggests that poverty is not the only predictor of stunting; stunting rates also vary by mother's education level, nutritional status, and parity: children of mothers with no education or only primary schooling have double the rates (40 percent) of children whose mothers have secondary or higher education (19 percent). As for parity, stunting rates among poor households are over 40 percent for the first two birth orders and 50 percent for fourth-order births, because younger children are weaned earlier and families struggle to meet the nutritional needs of a growing number of children.

**Over the past 15 years, there have been encouraging trends in many of the underlying causes of malnutrition—care practices, environmental health, food adequacy—but gaps persist.** The most significant improvements occurred in care practices, such as coverage of antenatal, facility delivery, and postnatal practices with gaps narrowing for all wealth quintiles. While access to water and sanitation facilities has generally improved, about 91 percent of poor households still do not have a handwashing station and about 60 percent do not treat water before drinking. Exclusive breastfeeding for infants under six months is well over 80 percent. Suboptimal complementary feeding practices for 6–24-month-old infants (e.g., only 18 percent have a minimum acceptable diet; less than 50 percent benefit from minimum meal frequency; and 29 percent have minimum dietary diversity) increase the risk of micronutrient deficiencies and exposure to infections and coincide with a higher prevalence of stunting. Only 24 percent of children under 2 receive adequate care; 37 percent have adequate environmental health, and 34 percent have a minimally acceptable diet. *Less than 4 percent have access to all three critical dimensions.*

**The government has renewed its political commitment to eliminate stunting.** Authorities have set a bold target for all districts to reach a 19 percent stunting rate by 2024, in line with the 2018–24 Health Sector Strategic Plan. A National Childhood Development Coordination Program was recently established under the leadership of the Prime Minister to ensure high-level coordination. The government plans to leverage results-based approaches, bolster accountability, and draw on successful community-led initiatives, such as that of Kirehe district. Kirehe stands out in terms of the strong bottom-up planning, effective use of *imihigo* contracts, and performance-based incentives for health facilities. The district's scale-up of best-buy interventions led to a dramatic decline in the stunting rate in five years, from 50 to 29 percent.

**Rwanda has an opportunity to bend the arc of history on stunting.** The World Bank estimates that

US\$27.3 million a year for 10 years is needed to scale up a comprehensive package of evidence-based nutrition-specific interventions. Over the 10 years this package would avert nearly 200,000 cases of stunting and 1.5 million cases of anemia in women. To attain these goals, the government needs to: (1) adopt a pro-poor approach, targeting the poorest children under 2 years of age during the critical 1,000-day development window; (2) mobilize parents, mayors, and policymakers to buy into the stunting reduction agenda; (3) expand domestic financing, better align resources to results, and improve tracking of all spending on stunting by all sectors; and (4) generate evidence about what works and how it can be scaled up. Rwanda can create a positive virtuous cycle of producing a generation of well-nourished children who grow, thrive, and reach their full potential, contribute to human capital development, and contribute to future economic growth.





## PART ONE

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# RECENT ECONOMIC DEVELOPMENTS

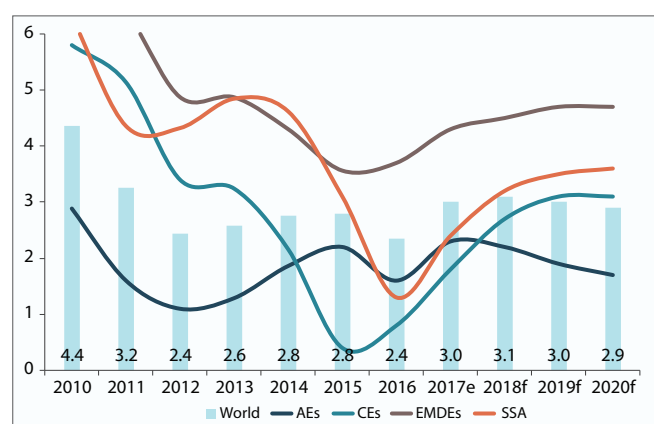


## 1.1 Globally and Regionally, Economies are Recovering

*Global economic activity firmed up in 2017 as investment and trade strengthened. The global upturn was broad-based. Growth in Sub-Saharan Africa accelerated in 2017 but remains low overall. In 2018, global growth is expected to sustain momentum, but risks of financial market disorders, mounting protectionist sentiment, and geopolitical tensions are rising.*

**Global economic activity firmed up in 2017.** The global economy entered a broad-based cyclical recovery supported by both a rebound in investment and trade and greater confidence as the effects of the collapse of commodity prices gradually dissipate. Global output is estimated to have expanded by 3 percent in 2017—a significant acceleration in growth from the 2.4 percent in 2016, and the highest global growth recorded since 2011 (Figure 1.1). The World Bank’s Global Economic Prospects report (January 2018) projects the global growth to edge up to 3.1 percent in 2018 but is clouded by concerns about possible financial market disorders, mounting protectionist sentiment, and geopolitical tensions.

**Figure 1.1: Global and regional economic growth (Percent)**



Source: World Bank 2018.  
Notes: AEs: Advanced economies; EMDEs: Emerging markets and developing economies; CEs: Commodity exporters; SSA: Sub-Saharan Africa.

**The 2017 global upturn was broad-based, with growth picking up in both advanced and emerging economies.** In advanced economies (AEs) output is estimated to have expanded by 2.3 percent—0.7 percentage points higher than the year before—with improvements across the board bolstered by higher

capital spending and drawing down of inventories. Their economic recovery has stimulated demand from AEs, which has boosted global trade and the activity of commodity exporters. Real GDP growth for the latter is estimated to have been 1.7 percent in 2017, having grown on average at above 1 percent since 2014. For emerging markets and developing economies (EMDEs) as a group, output growth accelerated to 4.3 percent in 2017, above the 3.6–3.7 percent in 2015–16.

**Growth also picked up in Sub-Saharan Africa (SSA) generally.** Reflecting a modest recovery in Angola, Nigeria, and South Africa, the region’s largest economies, SSA’s output is estimated to have grown from 1.3 percent in 2016 to 2.4 percent in 2017. Per capita income, however, continued to contract in 2017 as the population grew faster than domestic output. Growth in SSA is projected to gradually rise to 3.2 percent in 2018 and average 3.6 percent for 2019–20. Per capita income growth is thus expected to turn positive, though not enough to reduce poverty.

**Despite the improved growth outlook, within SSA economic performance varied.** Oil producers in the Central African Economic and Monetary Community continued to struggle with the effects of the earlier oil price collapse. For some oil exporters (e.g., Chad, Republic of Congo, and Equatorial Guinea), real GDP had contracted for at least two consecutive years through 2017. For metals-exporting countries, growth recovered as mining output and investment responded to a rise in the prices of metals and agricultural products but was held back by the poor business environment for nonmetals. Growth in non-



resource-intensive countries—mostly agricultural exporters like Rwanda—was quite stable and supported crop production. However, activity slowed

in some countries, as in Côte d'Ivoire due to lower cocoa prices and Kenya and Uganda because of drought.

## 1.2 Rwanda's Economic Performance in 2017

### 1.2.1. Real GDP growth strengthened in the second half of 2017

*After a 12 month-slowdown, growth in Rwanda accelerated in the second half of 2017. The recovery was driven by agriculture and services growth, with construction as the only major sector where growth was subdued. On the demand side, the rebound was driven by solid performance in exports and recovery of growth in private consumption.*

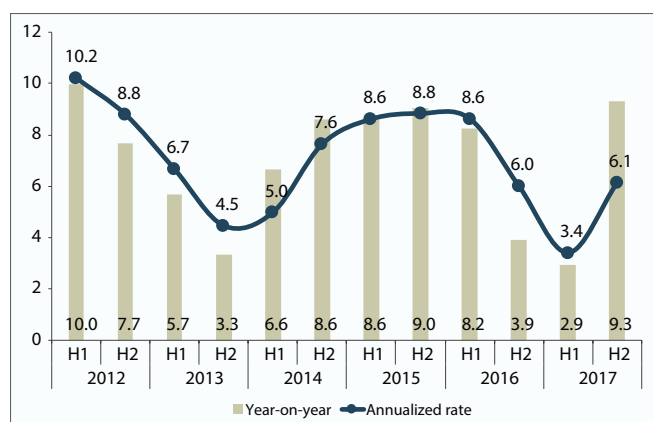
**In the second half of 2017, economic growth accelerated dramatically.** After sliding to a year-on-year 2.9 percent in the first half, growth rebounded to 9.3 percent in the second half, for annual growth of 6.1 percent (Figure 1.2). The rebound was driven by a strong recovery in agriculture, robust growth in exports, and resumption of growth in private consumption, which had fallen in 2016. The 6.1 percent growth in 2017, slightly up from 6 percent in 2016, outperformed the 5.2 percent projection.

**In 2017, growth was healthy in agriculture and services, while construction continued to drag down industrial growth (Figure 1.3).** Growth sped up in services from 7.2 percent in 2016 to 8 percent and

in agriculture from 3.9 to 6.6 percent. Both domestic and external demand contributed to the recovery in growth momentum. However, industrial growth fell from 6.7 percent in 2016 to 4.2 percent because of subdued construction activity, due in part to the completion of large-scale infrastructure investment in 2016.

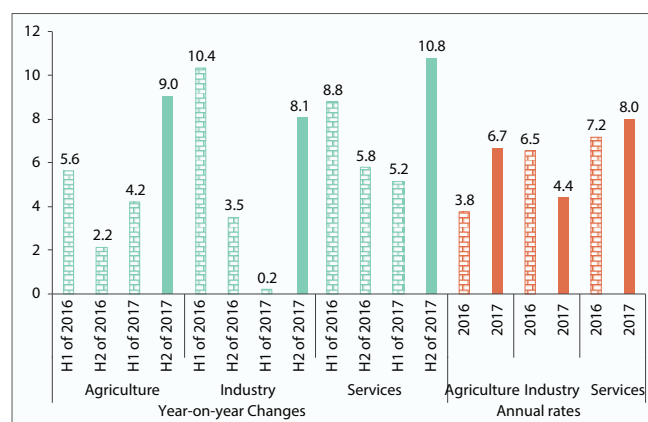
**The recovery in agriculture was led by food crops for domestic consumption; production of export crops trailed.** Favorable weather supported a substantial pick-up in the production of food crops, which account for about 60 percent of Rwanda's agricultural output. According to Seasonal Agricultural Surveys 2017,<sup>1</sup> production went up by 10.5 percent in Season B<sup>2</sup>

**Figure 1.2: Real GDP growth, Rwanda, 2012-17**  
(Percent)



Source: National Institute of Statistics of Rwanda (NISR).

**Figure 1.3: Real GDP growth by sector, 2016-17**  
(Percent)



Source: NISR data.

<sup>1</sup> Available at <http://statistics.gov.rw/datasource/seasonal-agricultural-survey-2017>.

<sup>2</sup> Rwanda has three agricultural seasons, mostly conditioned on rainfall: Season A is September through February; Season B March through June; and Season C July through September.

of 2017 after falling by 14.5 percent the year before. This followed the 3.5 percent increase in Season A after falling by 8.7 percent the year before. Overall, after dropping by 11.5 percent in 2016, production of food crops went up by 6.5 percent. Meanwhile, yields of export crops rose only 2.4 percent, slightly lower than the 2.5 percent registered in 2016.

**Manufacturing output rose by 6.7 percent in 2017, slightly up from 6.6 percent a year ago.** Food and textiles, which account for about 40 percent of manufacturing output, expanded by 14.5 percent and 21.7 percent, respectively, making them the largest contributors to manufacturing growth. Their robust growth, stronger than in 2016, reflects recent government efforts to boost these sectors through incentives incorporated into the Made in Rwanda program and a concerted focus on these strategic sub-sectors by the Rwanda Development Board. In contrast, in 2017 the beverage and tobacco subsectors, which account for 25 percent of manufacturing output, contracted 7.7 percent.

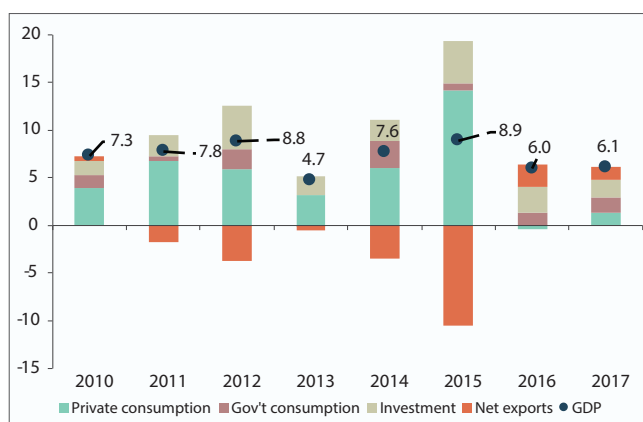
**Since completion of large-scale projects in 2016, construction has been restrained, but mining and quarrying have rebounded.** In the second year of adjustment, in 2017 construction contracted 3.2 percent, after averaging 15 percent annual growth for 2011–15. In contrast, in 2017 mining and quarrying grew by 20.8 percent, becoming the single largest source of industrial growth by contributing 2.9 percentage points to industry's 4.2 percent growth. Key factors were rising international prices for traditional minerals (coltan, cassiterite, and wolfram) and recent investments in the mining sector.

**Services expanded by 8 percent but subsector performance was uneven.** Contributing most was professional and administrative services, which grew by 22.4 percent. These services have been supported by the launch of investment projects for the new

airport. Growth in information and technology was also significant at 12.7 percent, up from 8.5 percent a year before. Other sectors that performed well were transport, financial, and hospitality (hotel and restaurant) services. However, a drop in private consumption suppressed retail and wholesale trade. Overall, services expanded by 8 percent and accounted for more than 60 percent of Rwanda's 6.1 percent GDP growth in 2017.

**On the expenditure side, net exports grew at the fastest rate in ten years and made a healthy contribution to growth (Figure 1.4).** Exports grew by 33.5 percent in 2017 in real terms—the highest rate in more than 10 years—outperforming imports growth. This positive contribution for the second consecutive year illustrated the more balanced nature of recent slower growth in contrast with the strong domestic demand-led-growth of 2012–15. After falling by 0.5 percent in 2016, private consumption rose by 1.7 percent because of higher food production and consumption in rural areas. Government consumption again grew at a high rate, 10.7 percent in 2017. Meanwhile, investment growth continued to decelerate after the high investment push in construction in 2013–15. In 2017, investment grew by 6.5 percent, compared to average growth of 13.3 percent in 2013–15.

**Figure 1.4: Demand-side contribution to GDP growth, 2017**  
(Percent)



Source: NISR data.

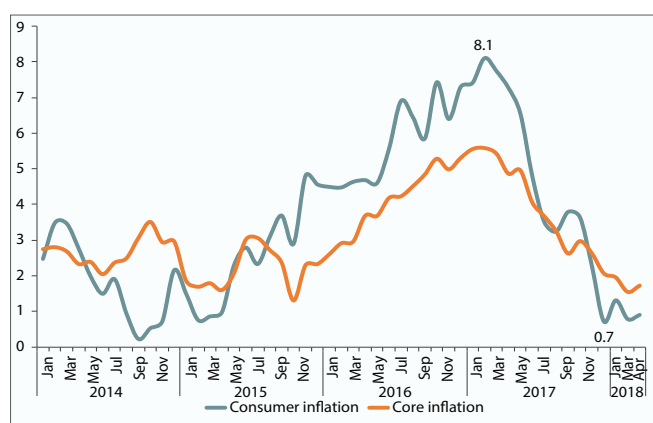


### 1.2.2. Monetary Policy: The Central Bank has gradually eased its policy stance

*Inflationary pressures eased in 2017, leaving room for further easing of monetary policy. The Central Bank of Rwanda, BNR, cut the policy rate to its lowest levels since its introduction in August 2005. However, monetary and credit conditions stayed relatively tight.*

**Inflationary pressures dissipated in the second half of 2017 (Figure 1.5).** In December 2017, inflation was just 0.7 percent after peaking at 8.1 percent in February (year-on-year). Core inflation, which excludes food and energy, also declined, from 5.6 percent (year-on-year) in February to 2.0 percent in December.

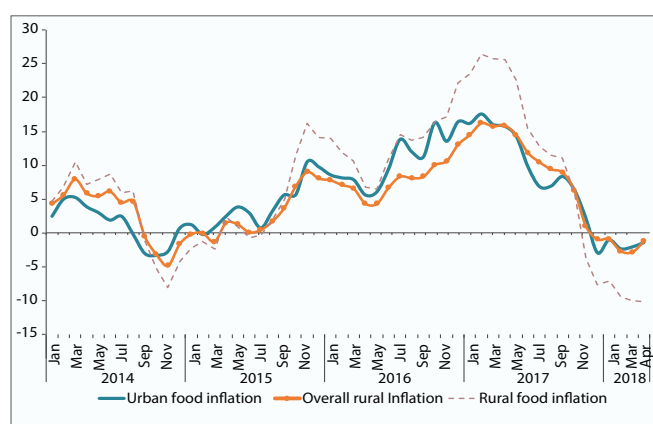
**Figure 1.5: Headline and core inflation, 2014–18**  
(Percent)



Source: NISR data.

**Food inflation declined to –0.7 percent in December 2017 from 17.6 percent in February as Rwanda recovered from the 2016 drought (Figure 1.6).** The fall in food prices has been more noticeable

**Figure 1.6: Rural and food prices inflation, 2014–18**  
(Percent)

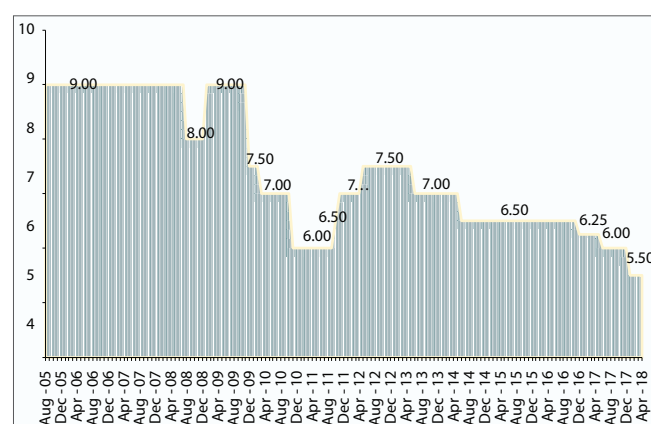


Source: NISR data.

in rural areas, where food items constitute the bulk of the consumption basket. Notably, rural food inflation was negative at –7.6 percent in December 2017 from its recent peak of 26.4 percent in February. Overall rural inflation was negative at –1.0 percent in December 2017, down from the peak of 16.2 percent in February. In the first quarter of 2018, both rural and food inflation rates remained negative.

**In 2017, subdued inflationary and currency pressures made it possible for BNR to gradually ease monetary policy (Figure 1.7).** Effective December 2016, the BNR reduced its policy rate, the key repo rate, by 25 basis points to 6.25 percent after keeping it unchanged at 6.5 percent for 30 months (June 2014–November 2016). As inflation eased further, in June 2017 BNR cut the policy rate by another 25 basis points. In the second half of 2017 the environment continued to be conducive as inflation continued its downward path and a large external adjustment moderated pressures on the exchange rate. In December 2017, the policy rate was further reduced by 50 basis points to 5.5 percent, the lowest level since it was introduced in August 2005.

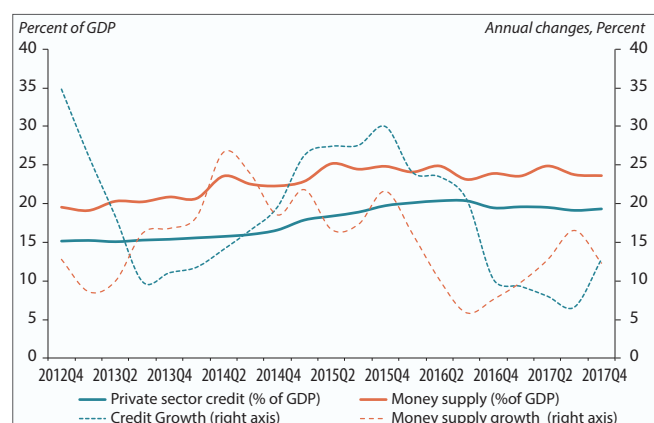
**Figure 1.7: Central Bank policy rate, 2005–17**  
(Percent)



Source: BNR data.

Despite the gradual monetary easing, monetary and credit conditions have stayed relatively tight (Figure 1.8). Monetization of the economy declined as the ratio of the money supply, M3, to GDP, fell from 23.9 percent at the end of 2016 to 23.6 percent at the end of 2017. Though depressed in the first half of 2017, growth of credit to the private sector began to respond to improved conditions and reached 13.2 percent by year end, up from less than 8 percent at midyear. Meanwhile, in 2017 credit available to the private sector held at about 19 percent of GDP.

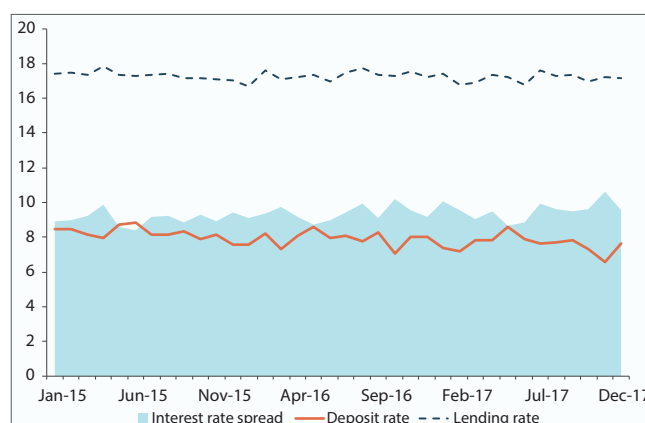
**Figure 1.8: Monetary and credit conditions, 2012–17**  
(Percent)



Source: BNR data.

Bank lending and deposit rate changes were more muted in 2017 (Figure 1.9). Lending rates averaged 17.2 percent, almost unchanged from 2016, but the average deposit rate declined from 7.9 percent in 2016 to 7.6 percent in 2017, slightly increasing interest rate spreads (lending rates minus deposit rates) to 9.5 percent by December. In the first quarter of 2018, however, the spread has narrowed.

**Figure 1.9: Bank lending and deposit rate dynamics, 2015–18**  
(Percent)



Source: BNR data.

#### 1.2.4. Financial Sector: Banking indicators are sound despite rising vulnerabilities

*Rwanda's financial sector is still healthy though some risks have arisen. Thanks in part to continued expansion of mobile-based financial services, Rwanda ranks second in SSA after Mauritius in terms of financial inclusion.*

**Rwanda's banking sector indicators are sound.** In 2017 the sector continued to be well-capitalized; since September 2016 it has had a Tier 1 capital adequacy ratio of about 20 percent against a minimum prudential requirement of 10 percent. At year-end, the ratio of liquid assets to total deposits was 43.7 percent against the 20 percent requirement. However, bank nonperforming loans (NPLs) were 7.6 percent in December 2017, unchanged from 2016, though the patterns varied. The mortgage sector, the main recipient of bank credit, saw its NPL ratio slip from 5 percent in 2016 to 4.5 percent by year-end 2017, and agriculture NPLs dropped from 22.7

to 10 percent. However, manufacturing, trade, and hotel NPLs went up. In 2017, the BNR adopted more prudential regulations to ensure the soundness and efficiency of Rwanda's financial sector (Box 1.1)

**Mobile based-financial services continued to boom.** As in other EAC countries, mobile money is now a regular feature of Rwandan life. Active mobile money holders rose from 3,333,349 in 2016 to 3,774,438—more than 40 percent of total mobile phone subscribers and nearly 33 percent of Rwanda residents. Ten banks and one microfinance institution offer mobile banking services. By December 2017,

1,158,944 mobile banking users were registered—nearly 15 percent of mobile phone subscribers and nearly 10 percent of residents. Among mobile financial services currently available are cross-border transactions, payments for government services, and micro savings.

**Mobile-based-financial services are spearheading financial inclusion.** According to Finscope for 2016,<sup>3</sup>

using mobile money has helped to reduce the share of adults who do not use any financial products or services, formal or informal—the “financially excluded” group—from 28 percent in 2012 to 11 percent in 2016. The shift was driven by access to formal nonbank financial products, mainly those offered by mobile money services. In 2016, in SSA Rwanda ranked second only to Mauritius in terms of financial inclusion.

#### Box 1.1: Strengthening Rwanda’s financial sector

**In 2017, major prudential initiatives were launched to make Rwanda’s financial sector both stronger and more efficient.** Among them were:

- A new banking law that brings Rwanda into full compliance with Basel core principles, enhances licensing procedures, and harmonizes laws affecting the financial sector within the EAC
- Regulation to enable banks to promptly identify and monitor nonperforming loans and better manage credit risks
- Reforms to enable banks to prudently manage credit concentration risk
- Regulation updating requirements for and the responsibilities of external auditors of financial institutions
- A regulation to ensure effective oversight of the insurance business based on the nature, scale, and complexity of the insurer being regulated
- An antifraud directive to ensure the confidence of shareholders, policyholders, and beneficiaries in the insurance sector.

#### 1.2.3. The Balance of Payments: Robust performance in exports has improved Rwanda’s external position

*Rwanda’s external position has improved substantially, halving the current account deficit. In 2017 the current account deficit reached single digits (as a percent of GDP). The combination of subdued domestic investment demand, a more competitive exchange rate, and strong external demand for nontraditional exports resulted in sizable growth in exports. Imports were more subdued because investment demand was low.*

**After three consecutive years of growing imbalances, the external position improved substantially in 2017.** The current account deficit (CAD) has more than halved, from 15.9 percent of GDP in 2016 to 6.8 percent in 2017, due to the combination of a more competitive exchange rate, subdued domestic investment demand, improvements in international prices and growth in non-traditional exports. The narrowing of the

trade deficit, from US\$1,310 million (15.5 percent of GDP) in 2016 to US\$872 million (9.6 percent of GDP) contributed the most to reduce the CAD in 2017. Deficits in the services and income accounts also dropped, from 6.6 percent of GDP to 3.8 percent. With these developments, the CAD is now in line with historical trends before the investment push of 2013–15 (Table 1.1).

<sup>3</sup> See <http://statistics.gov.rw/publication/finscope-rwanda-2016>.

Table 1.1: Rwanda's balance of payments, 2013-2017

	2010	2011	2012	2013	2014	2015	2016	2017
<b>Current account</b>	<b>-427</b>	<b>-469</b>	<b>-747</b>	<b>-556</b>	<b>-943</b>	<b>-1,201</b>	<b>-1,342</b>	<b>-622</b>
	(-7.4)	(-7.1)	(-10.2)	(-7.3)	(-11.8)	(-14.5)	(-15.9)	(-6.8)
Goods Trade	-787	-1,105	-1,274	-1,151	-1,269	-1,237	-1,310	-872
(% GDP)	(-13.6)	(-16.8)	(-17.4)	(-15.1)	(-15.9)	(-15.0)	(-15.5)	(-9.6)
Exports	297	464	591	703	723	682	727	1,050
Imports	1,084	1,569	1,864	1,854	1,992	1,919	2,036	1,922
Services & income (net)	-221	-162	-106	-146	-252	-501	-557	-346
(% GDP)	(-3.8)	(-2.5)	(-1.4)	(-1.9)	(-3.2)	(-6.1)	(-6.6)	(-3.8)
Travel, net	125	163	203	215	220	115	124	140
Transport, net	-321	-355	-265	-309	-331	-310	-308	-206
Current transfers	581	798	632	741	578	536	524	596
Remittances (inflows)	98	166	175	162	175	153	167	208
Government (inflows)	503	675	463	582	420	392	366	402
<b>Capital account</b>	<b>286</b>	<b>197</b>	<b>171</b>	<b>235</b>	<b>337</b>	<b>300</b>	<b>190</b>	<b>190</b>
(% GDP)	(4.9)	(3.0)	(2.3)	(3.1)	(4.2)	(3.6)	(2.2)	(2.1)
<b>Financial account</b>	<b>279</b>	<b>533</b>	<b>397</b>	<b>661</b>	<b>649</b>	<b>690</b>	<b>967</b>	<b>554</b>
(% GDP)	(4.8)	(8.1)	(5.4)	(8.7)	(8.1)	(8.3)	(11.4)	(6.1)
Direct investment	251	119	255	258	311	220	219	245
Portfolio investment	8	88	6	2	1	8	4	-72
Other investment	21	327	136	402	337	462	744	-382
General government	52	207	93	523	287	350	359	341
Other sectors	-8	71	15	-115	49	39	393	-6
<b>Net errors and omissions</b>	<b>-66</b>	<b>-27</b>	<b>-34</b>	<b>-111</b>	<b>-133</b>	<b>183</b>	<b>169</b>	<b>-31</b>
<b>Overall balance</b>	<b>72</b>	<b>234</b>	<b>-212</b>	<b>228</b>	<b>-90</b>	<b>-29</b>	<b>-10</b>	<b>93</b>
(% GDP)	(1.2)	(3.6)	(-2.9)	(3.0)	(-1.1)	(-0.3)	(-0.1)	(1.0)

Source: BNR and NISR data.

**Goods exports rose in 2017 by about 45 percent, surpassing US\$1 billion for the first time.** Mineral exports, encouraged by favorable international prices and markets for nontraditional minerals, were the main contributors to export growth. They more than doubled, generating about 36 percent of Rwanda's earnings from goods exports. The value of nontraditional minerals exported, such as beryllium, unwrought lead, and gemstones, more than tripled, from US\$80 million in 2016 to US\$248 million, and accounted for almost 25 percent of total goods exports. The export value of traditional minerals like tin, coltan, and wolfram went up by 44 percent, driven by both higher prices and higher export

volumes. Other nontraditional exports including horticulture improved their performance. The value of the two main crops exported, coffee and tea, rose by about 22 percent due to higher international prices; their export volumes did not change.

**Imports were subdued in 2017, as domestic investment demand lessened.** Overall, Rwanda's import bills contracted by 5.6 percent in 2017, mainly due to a drop in imports of capital goods, which accounted for about 29 percent of goods import values and declined by 12.4 percent in 2017. The decline was mainly the result of a 20 percent drop in imports of machines, devices, and tools

linked to completion of major investment projects in 2016. Consumer goods other than food, which accounts for 18 percent of goods imports (CIF), declined by 9.5 percent. Leading the slide was a 16.1 percent decline in imports of clothing after tariffs were increased on imports of second-hand clothes and shoes in a bid to promote locally produced apparel. In contrast, food imports shot up by 23.1 percent and energy imports rose 11.4 percent.

**Both services and income balances improved in 2017 (Table 1.1).** Exports of services, driven by transport and travel, grew at a vigorous 20.5 percent. Exports of transport services more than doubled, from US\$92 million in 2016 to US\$194 million. This partly reflects a better methodology for capturing service transactions with nonresidents. As in previous years, travel services continued to grow at healthy rates, this time by 12.4 percent. There was a steep decline in imports of services related to construction; the services deficit dropped from US\$557 million (6.6 percent of GDP) in 2016 to US\$346 million (3.8 percent).

**In 2017, capital and financial flows exceeded the CAD, allowing for some accumulation of foreign exchange reserves.** Net foreign direct investment (FDI) rose to US\$245 million (about 2.7 percent of GDP) but remained well below the 2014 peak. Net portfolio flows turned negative after a Rwanda Social Security Board investment abroad. Net government

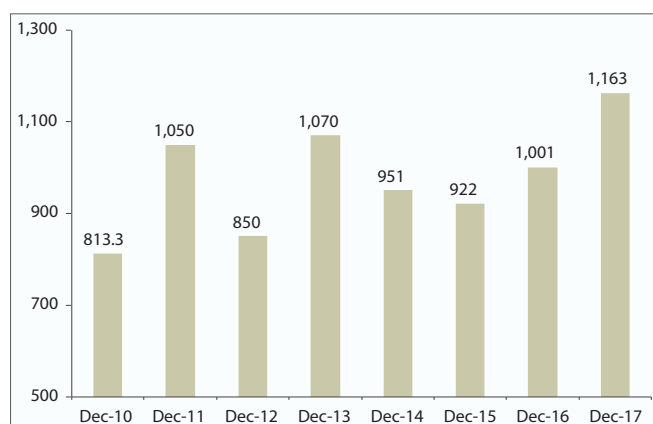
external and government-guaranteed borrowing amounted to US\$381 million (4.2 percent of GDP), down from US\$744 million (8.8 percent) the year before as major construction projects were completed. Long-term borrowing in 2017 was mainly budget- and project-related (US\$369 million).

**After falling for two consecutive years BNR international reserves increased in 2017 (Figure 1.10),** rising to about US\$1.2 billion and illustrating the success of Rwanda's efforts under the two-year adjustment program, which was supported by the IMF. The import cover of reserves moved up from 4 months in 2016 to 4.2 months.

**The Rwandan franc was relatively stable in 2017.** After dropping almost 10 percent in 2016, the franc depreciated only 3.1 percent against the US dollar (Figure 1.11). Moreover, monthly movements have also stabilized. This reflected improved external balances that allowed the BNR to accumulate official foreign exchange reserves. As a result, Rwanda's official foreign exchange reserves as of 2017 surpassed the level they had reached before the aid crisis of 2012.

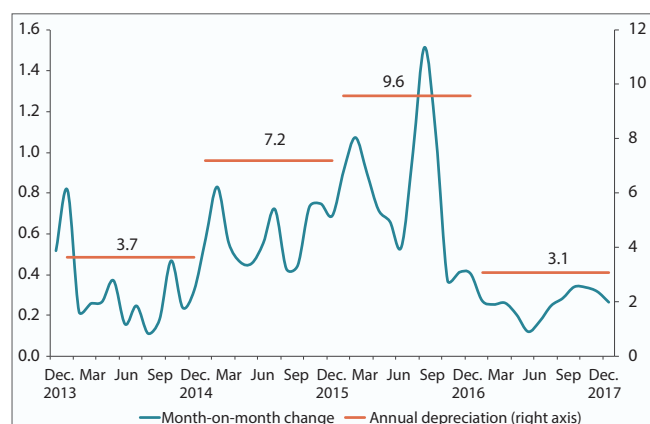
**Although its fall against the US dollar was modest, the Rwandan franc depreciated in real effective terms by about 8 percent (Figure 1.12).** The real effective exchange rate (REER) rose by 8.2 percent in 2017, mostly due to depreciation against

**Figure 1.10: Gross international reserves, 2010–17**  
(US\$ million)



Source: BNR data.

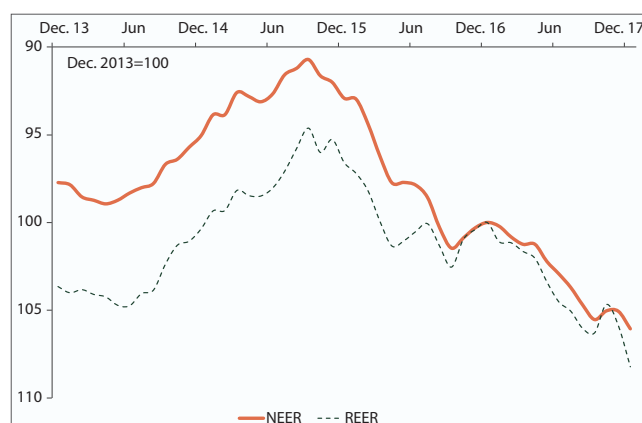
**Figure 1.11: Value of the Rwanda Franc against the US Dollar, 2013–17**  
(Percent)



Source: BNR data.

currencies of trading partners other than the USA<sup>4</sup> (for example, 15.7 percent against the euro, 12.3 percent against the British pound, and 6.3 percent against the South African rand). The franc also depreciated slightly against other currencies in the region. Moreover, the inflation differential with Rwanda's trading partners was 2.7 percent on average in trading partners versus 0.7 percent in Rwanda. These two factors contributed to the depreciation of the real effective value of the franc.

**Figure 1.12: Indices of real and nominal effective exchange rates**



Source: BNR data.

### 1.2.5. Fiscal Policy Developments in FY2017/18

*In the first half of the FY2017/18, Rwanda's fiscal position slightly expanded. Revenue performance was strong. Higher spending was driven mostly by net lending. In 2017, Rwanda's public debt continued to rise. The risk of external debt distress remains low.*

#### Recent Fiscal Developments and the Outlook for FY2018/19-2020/21

**In the first half of FY2017/18 (July-December 2017), the fiscal deficit increased slightly.**<sup>5</sup> Although total revenues were 0.5 percentage points of GDP higher than in the same period the year before, government spending and net lending grew faster (Table 1.2). By yearend-2017, the FY2017/18 budget execution report showed Rwf35 billion in arrears (on a budget mid-way through execution). Total budget arrears as of March 2018 are estimated at less than 0.8 percent of GDP.

**Revenue collection improved in the first half of FY2017/18 (Table 1.2).** Total collections went up from 17.4 percent of GDP in the same period a year earlier to 17.7 percent. An improving economy and continuing administrative measures, such as VAT audits, carried out in the first half of the fiscal

year contributed to the increase. Both indirect and direct taxes fared better than expected. Taxes on international trade, however, were 10.2 percent lower because of fewer imports. Nontax revenue exceeded the target by 12.6 percent, mainly because of higher collections of local government fees.

**The increase in public outlays was driven by net lending and capital spending (Table 1.2).** Net lending more than doubled in nominal terms in July-December 2017, reaching 2.4 percent of GDP—1.1 percentage points higher than in the same period a year earlier. Domestically financed capital expenditures<sup>6</sup> increased over the previous year by 0.5 percentage points of GDP. In the current fiscal year, actual spending exceeded budget due to excess spending on Global Fund projects and front-loading of spending on the strategic petroleum reserve facilities. The latter drew on accrued deposits from the strategic petroleum reserve levy that BNR

<sup>4</sup> The BNR uses the currencies of 10 trading partners in computing REER and NEER: Uganda, Kenya, Tanzania, Burundi, the United States, the Euro Area, South Africa, Sweden, Switzerland, and the United Kingdom.

<sup>5</sup> Rwanda's fiscal year runs from July 1 to June 30.

<sup>6</sup> The government of Rwanda identifies two components of capital spending, financed domestically and financed from foreign sources, based on whether they go through the government's financial management system. The government is still finding it difficult to compile accurate disbursement figures for the foreign-financed component, so as actual data it usually reports original projections.



**Table 1.2: Rwanda's central government finances, FY 2015/16–2017/18**

	FY2015/16	FY2016/17	FY2016/17 (July-Dec.)	FY2017/18 (July-Dec.)
<b>Revenue and grants</b>	<b>24.4</b>	<b>22.7</b>	<b>22.2</b>	<b>22.6</b>
Total revenue	18.4	18.0	17.4	17.7
Tax revenue	15.8	15.5	14.8	14.9
Non-tax revenue	2.6	2.5	2.6	2.7
Grants	5.9	4.6	4.8	5.0
<b>Expenditure</b>	<b>27.5</b>	<b>27.3</b>	<b>26.2</b>	<b>26.9</b>
Current expenditure	14.7	15.0	16.0	15.2
Capital expenditure	11.4	10.7	9.0	9.3
Net lending	1.4	1.6	1.3	2.4
<b>Budget Balance</b>				
Primary deficit	-2.2	-3.6	-2.9	-3.1
Fiscal deficit (cash basis)	-3.5	-4.9	-4.4	-3.4
<b>Financing</b>	<b>3.5</b>	<b>4.9</b>	<b>4.4</b>	<b>3.4</b>
Foreign (net)	3.6	4.5	7.1	5.3
Domestic (Net, -: deposit build-up)	0.0	0.3	-2.8	-2.0

Source: MINECOFIN data.

introduced in FY 2015/16. Recurrent spending fell by 0.7 percentage points of GDP due to underspending on transfers and subsidies to some public agencies. Total spending reached 27 percent of GDP in the first half of FY2017/18, 0.8 percentage points higher than in the same period the year before.

**The budget was revised in February 2018.** Building on the progress with revenue collections, total spending went up by 1 percent: Capital spending is projected to increase by 1.4 percent, accounting for 52 percent of the total budget increase. Current expenditures will increase 0.7 percent over the original budget. The 2017/18 revised finance law indicates that the revised budget projects a shortfall of 3.7 percent in the foreign-financed component of capital spending while the domestically financed component is expected to go up by 4.8 percent. As a result, the overall cash deficit (including grants) is projected to rise in nominal terms from Rwf322.2 billion to Rwf362.9 billion. This new deficit will be financed with net external borrowing of Rwf324.6 billion and net domestic borrowing of Rwf38.3 billion.

### Public Debt

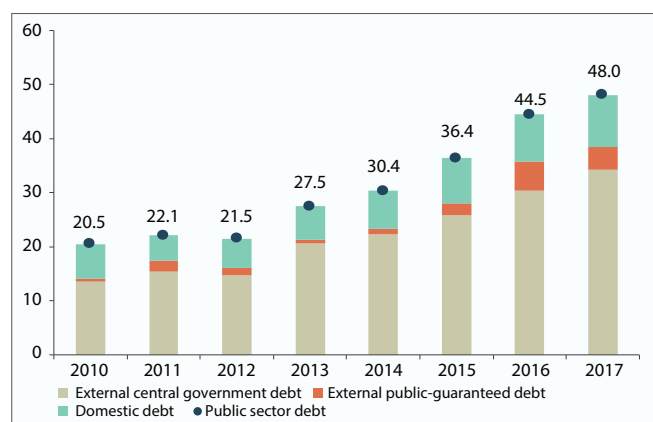
#### Public debt continued to rise in 2017 (Figure 1.13).

For the last four years, with external grants declining, the authorities relied more on borrowing to finance its 2014–16 investment push. While at the end of 2012, external public and publicly guaranteed debt was 16.1 percent of GDP, by year-end 2017, it had shot up to 38.4 percent of GDP. Meanwhile, domestic debt rose from 5.4 percent of GDP to 9.7 percent. As of December 2017, total government debt had reached 48 percent.

#### The risk of external debt distress remains low, according to the 2017 Joint IMF-World Bank Debt Sustainability Analysis (DSA) (IMF 2017).

External debt distress indicators remain below risk thresholds through the projection period. The DSA 2017 showed, however, that the debt service-to-exports and debt service-to-revenue ratios breach the thresholds in 2023 with projected repayments of Eurobonds. Although the breach appears to be temporary and manageable, it illustrates risks that might confront Rwanda in refinancing its commercial debt if conditions in international markets are not favorable.

**Figure 1.13: Rwanda's public debt, 2010–17**  
(Percent of GDP)



Source: MINECOFIN and DSA data.

**For the medium term, the government envisages a fiscal consolidation.** The budget framework

paper (BFP) for 2018/19–2020/21, released in April 2018, stipulates that the government will borrow prudently to keep debt and external balances sustainable while carrying out the National Strategy for Transformation's investment priorities. It is envisioned that this can be achieved by accelerating domestic revenue mobilization and rationalizing expenditures. The BFP projects an average annual increase of 0.3 percent of GDP in tax revenues over the next three years based on current tax policy and administrative measures. Total spending is expected to decline from 26.9 percent of GDP in FY2018/19 to 26.3 percent of GDP in FY2020/21, with the prioritization affecting mostly recurrent expenditure. Capital spending is expected to be robust over the medium term.

### 1.3 Macroeconomic Outlook and Risks

*In the medium-term Rwanda's economic growth is expected to accelerate. Key downside risks to growth are associated with agriculture's heavy reliance on weather conditions, the possibility of reversal in the global economic recovery, and the private sector's subdued response to improvements in the investment climate.*

**GDP growth is projected to accelerate to 7.2 percent in 2018 and to 7.5 percent in 2019 and 7.8 percent in 2020 (Table 1.3).**<sup>7</sup> These projections are around 0.5 percentage points higher than projected in the 11<sup>th</sup> REU released in December 2017 because of export growth momentum, an improved outlook in agriculture, and larger than expected adjustments in external imbalances. A more competitive exchange rate is already supporting nontraditional exports, an area that has emerged as a potential source of growth. The government's renewed commitments to investing more in agriculture, especially irrigation, enhances that sector's medium-term outlook. In 2018 and 2019, construction of the new airport will boost both industry and domestic demand. With inflation low, monetary policy will remain accommodative and credit growth is expected to accelerate. The CAD is expected to hold at about 8 percent of GDP.

**Agriculture's heavy reliance on weather conditions poses a risk to the growth outlook, as was made clear when a drought slowed growth in 2016 and the first half of 2017.** Rwanda still depends heavily on rain-fed agriculture. In the second agricultural season of 2017, only 4.6 percent of intensive croplands was irrigated. Unfavorable weather conditions would not only undermine Rwanda's growth prospects, it would also induce inflationary pressures due to food shortages. Moreover, any food shock would negatively impact early childhood nutrition, one of the causes of childhood stunting.

**Externally, a reversal in the global economic recovery could depress prices for Rwanda's main exports and jeopardize Rwanda's growth.** Financial market uncertainty, mounting protectionist sentiment, and geopolitical tensions could affect global demand and thus mute the recovery of

<sup>7</sup> These projections are slightly different from the Government numbers, which project growth at 7.2 percent in 2018, 7.8 percent in 2019 and 8 percent in 2020.



**Table 1.3: Rwanda's medium-term macroeconomic projections**

	2015	2016	2017	2018f	2019f	2020f
Real GDP growth	8.9	6.0	6.1	7.2	7.5	7.8
Production side						
Agriculture	5.0	3.9	6.6	5.1	5.0	5.0
Industry	8.9	6.7	4.2	6.0	7.2	7.5
Services	10.4	7.2	8.0	8.0	8.3	8.7
<i>Demand side</i>						
Private Consumption	18.2	-0.5	1.7	4.8	5.5	6.0
Government Consumption	5.1	9.2	10.7	8.8	8.6	9.3
Gross capital formation	17.6	10.1	6.5	7.4	11.2	10.4
Exports, Goods and Services	6.3	12.9	33.7	15.0	10.0	10.0
Imports, Goods and Services	34.7	-1.1	10.1	8.0	9.0	9.0
<b>Inflation (Consumer Price Index, annual average)</b>	2.5	5.7	4.8	5.0	5.0	5.0
<b>Current Account Balance (% of GDP)</b>	(14.5)	(15.9)	(6.8)	(8.7)	(8.6)	(8.4)
<b>Fiscal Balance (% of GDP)<sup>a</sup></b>	(2.8)	(4.5)	(3.9)	(3.9)	(3.9)	(3.8)
<b>Debt (% of GDP)</b>	33.5	44.5	48.4	49.2	49.8	50.4

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

prices for commodities and Rwanda's main exports. Moreover, a sharper than expected increases in oil prices would burden Rwanda's import bill.

**The private sector's lower-than-expected response to the improved investment climate is also a concern for long-term growth.** The recent growth slowdown, after several years of a public investment-led boom, has illuminated the limitations of the public-investment-led model

and the importance of the private sector. A lack of private sector responsiveness and failing to increase the private investment rate over time would make it very difficult to sustain a high growth rate in the long run —as is envisioned in the National Strategy for Transformation and Vision 2050. Sustained growth rates will require considerable efforts in boosting private and public investment financed by domestic savings and capital inflows in the medium- as well as long-term.



## PART TWO

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# TACKLING STUNTING: AN UNFINISHED AGENDA



## 2.1 Setting the Scene

**Rwanda has outperformed other countries in the region on many fronts.** It has met or exceeded most Millennium Development Goal targets. It has been at the forefront of critical health reforms, such as its flagship community-based health insurance scheme, the innovative performance-based financing program in the health sector, and its distinguished community health worker program, which all serve as models for other countries. However, although chronic malnutrition or stunting (*Kugwingira*), which signals that children are growing too slowly, has declined from about 50 percent (2005) to 38 percent (2014/15) of children under 5, it remains a major outlier. The pace of decline in stunting is out of line with the country's potential and political will.

**Stunting is an invisible problem in Rwanda which deprives children of their right to grow, thrive, and reach their full potential.** Stunting impedes cognitive development, educational attainment, and lifetime earnings. It also deprives the economy of quality human capital that is critical to attaining Rwanda's aspiration to become a middle-income country and sustain its economic gains. Children who are stunted are trapped early in a vicious cycle of poverty: by the time they are 2, their brain development has been compromised and the damage is essentially irreversible.

**The government has made a strong commitment to eliminate stunting, and aims to strengthen involvement of parents, mobilize all key stakeholders and bolster accountability.** Authorities want to bring about a paradigm shift in the way people think of stunting to ensure that it is no longer a silent killer. They recognize that improving awareness of stunting and ensuring broad-based involvement of all stakeholders from the village to the national level is critical. The government has set

a bold target for all districts to reach a 19 percent stunting rate by 2024, and aims to bend the curve on stunting, setting the country on a successful trajectory to tackle this key development issue. Rwandese authorities recognize that to attain this target they must empower families, deliver high-impact interventions to prevent stunting, and make local authorities accountable for progress on stunting.

## 2.2 Stunting in Rwanda

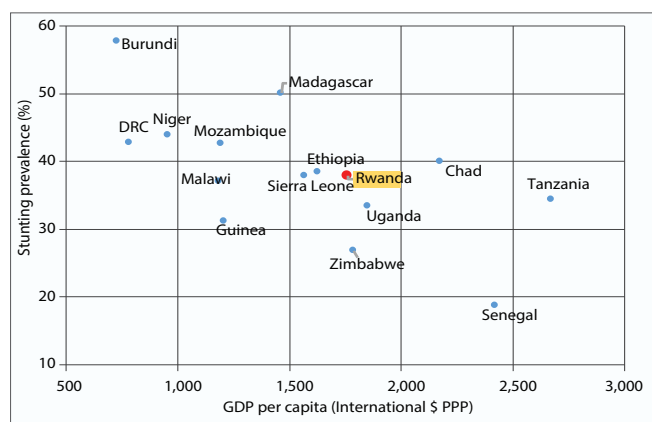
### 2.2.1. What is the situation?

**Over the past 15 years, Rwanda has made dramatic progress in improving child and maternal health.** With the rapid scale-up of basic health services and improvements in socioeconomic conditions, under-5 mortality plunged, from 196 per 1,000 live births in 2000 to 50 in 2015 and maternal mortality also dropped steeply, from 1,071 per 100,000 live births 2000 to 210 in 2014. Similarly, in the past 10 years, expansion in family planning services and delayed childbearing have cut the fertility rate by a third, from about 6.0 to slightly above 4.0. The historical priority on acute malnutrition (wasting) has paid off: Rwanda has already surpassed the 2030 Sustainable Development Goal target for wasting.<sup>8</sup>

**Since 2010 stunting has started to decline faster but is still stubbornly high, placing Rwanda among the SSA countries that need to accelerate progress on undernutrition.** Stunting is more prevalent in Rwanda at 38 percent than in neighboring countries (Figure 2.1), such as Tanzania (34.4 percent) and Uganda: (33.4 percent), and in countries at a similar socio-economic level, such as Zimbabwe (26.8 percent), and double the level of countries that have introduced major programs to tackle child undernutrition, such as Senegal (18.7 percent).

<sup>8</sup> The prevalence of children under 5 who are wasted (too thin for height) fell from 8.3 to 2.2 percent, and underweight (too thin for age) children fell from 19.5 to 9.3 percent between 2000 and 2015. Both wasting and underweight are below the WHO severity thresholds.



**Figure 2.1: Prevalence of stunting and GDP per capita, Rwanda and selected low-income African countries**

Source: World Development Indicators.

**Figure 2.2: Trends in stunting prevalence by wealth quintile, 2000–15**

Source: Rwanda DHS (2000, 2005, 2010, 2014-15).

### 2.2.2. Who is most affected by stunting?

#### Stunting affects the poor disproportionately.

Rwandese children from the poorest wealth quintile have stunting rates (49 percent) that are more than double those from the top wealth quintile (21 percent). As in other countries, stunting rates are much higher in rural (over 40 percent) than in urban (24 percent) areas. Boys under 5 have a higher rate of stunting (41 percent) than girls (33 percent). The poorest children and those living in rural areas have seen only modest improvements in stunting since 2005 (Figure 2.2). The average annual rate of reduction for 2005–15 was only 2 percent among the poorest in contrast to 5 percent in the richest quintile.

#### *Children from the lowest wealth quintiles are disadvantaged by*

- High poverty and inequality
- Mother's modest education levels, poor nutritional status, and high parity
- Geographic location

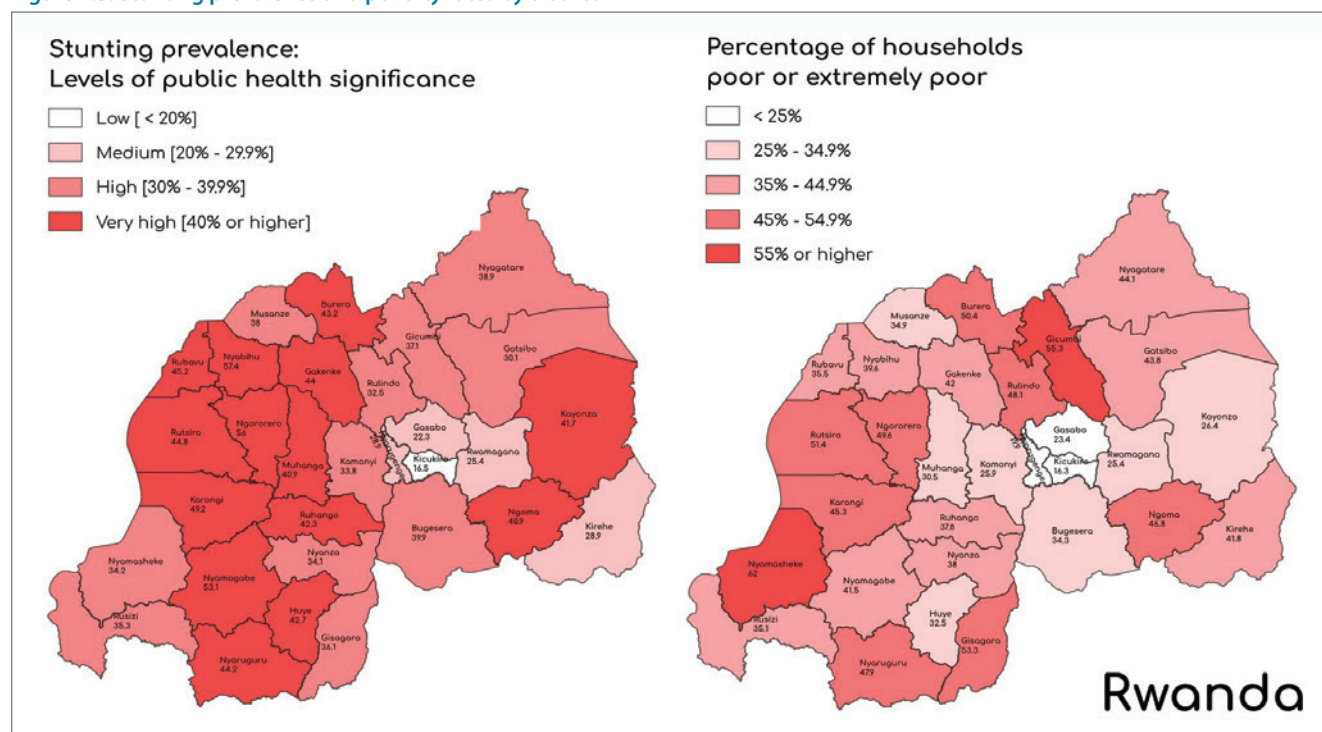
**Even among the top two wealth quintiles, nearly 25 percent of children suffer from stunting, suggesting that poverty rates are not the only predictor of child undernutrition.** The geographic distribution of stunting is also only partially related to poverty. While poverty is most prominent in

districts in the west and northeast of the country, most districts have stunting levels of high (>30 percent) or very high (>40 percent) public health significance, which illustrates the widespread nature of the problem (Figure 2.3). Only in one area, the urban district of Kicukiro, is stunting prevalence considered to be of low significance, with three surrounding districts (Nyarugenge, Gasabo, and Rwamagana) and Kirehe (Box 2.2) with levels of medium significance.

#### **Children under 6 months of age are protected from stunting through the widespread practice of exclusive breastfeeding in Rwanda.**

The situation changes rapidly during the weaning period (6–24 months), when stunting rises progressively (from 11 percent in children younger than 6 months to 21 percent in children aged 9–11 months and over 49 percent in those aged 18–24 months), as complementary foods are introduced and children face growing micronutrient deficiencies and are exposed to infections and diseases. Households with more children, especially those from the lower wealth quintiles, have higher stunting rates, which are over 40 percent for the first two birth orders, 47 percent for third order births, and nearly 50 percent for fourth order births. A higher number of births is typically accompanied by earlier weaning of younger children and shorter birth intervals,

Figure 2.3: Stunting prevalence and poverty rates by district



Source: World Bank 2011 Rwanda DHS 2014-2015 & EICV 4.

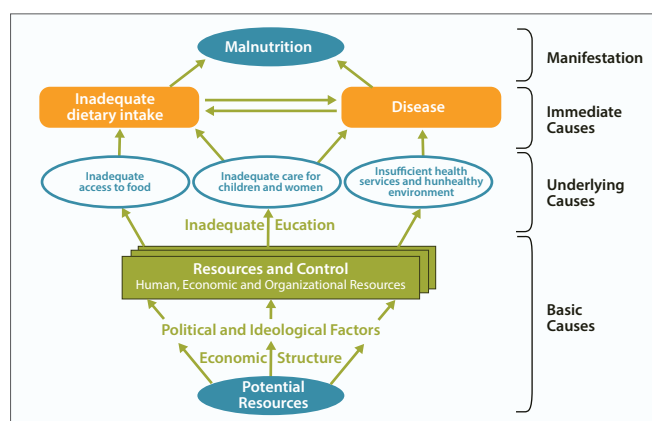
both of which are associated with an increased likelihood of stunting, as families struggle to meet the nutritional needs of a growing number of children.

**Children of mothers with little education and inadequate health and nutrition status are more likely to be stunted.** At 40 percent, stunting levels of children of Rwandese women who have no education or only primary schooling are double those of children whose mothers have secondary or higher education (roughly 19 percent). There is a generally positive association between mother's years of education and lower stunting, and mother's education is more likely than father's to be associated with greater height relative to the child's age. Children of poorly nourished mothers (those with lower body mass index, BMI) have higher stunting rates than children of well-nourished mothers. These patterns suggest the importance of targeted action to address both the nutritional and health status of the most vulnerable women and their children.

### 2.2.3. What are underlying causes of stunting?

The UNICEF conceptual framework of the determinants of malnutrition is used to illustrate the underlying causes of the high stunting rate in Rwanda. According to UNICEF (2015), child undernutrition is caused not only by a lack of adequate quantity and quality of food but also by frequent illnesses, poor maternal and child care practices, substandard access to health services, and unhealthy environments. The framework cites inadequate dietary intake and frequent diseases as the immediate causes of malnutrition, with the underlying causes being household food insecurity (in terms of quantity, diversity, and frequency of food intake); inadequate care for children and women; and insufficient, inaccessible, and inadequate health services; and an unhealthy household and surrounding environment (Figure 2.4). The framework illustrates the complex underlying causes of stunting; and the importance of coordinated scale-up of both nutrition-specific interventions to address the immediate causes and nutrition-sensitive interventions to tackle the underlying determinants.

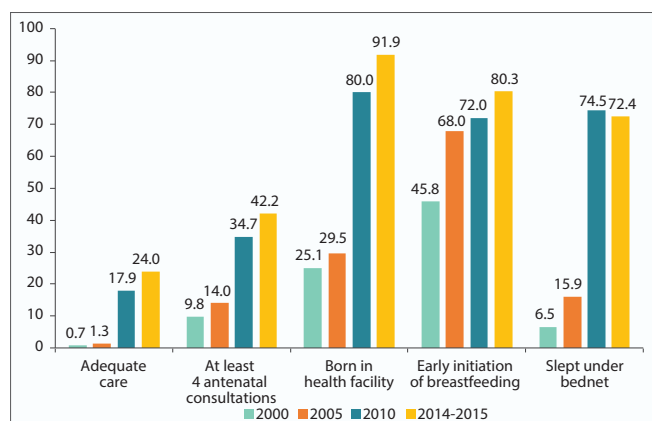
Figure 2.4: UNICEF framework for malnutrition



Source: Adopted from UNICEF, 1990

**In the past 15 years, there have been encouraging trends in many of the underlying causes of malnutrition among Rwandese children (e.g., care practices, environmental health, and food adequacy).** The most significant improvements occurred in care practices, especially coverage of antenatal, birth, and postnatal practices (Figure 2.5). Delivery in health facilities is now almost universal, having soared from 25 percent in 2000 to 92 percent in 2015, with high levels of coverage in all wealth quintiles. Yet some indicators are still low (e.g., 20 percent for child postnatal care; 42 percent for four or more antenatal care visits; only 3 percent of women taking iron folic acid tablets for at least 90 days during pregnancy; and only 50 percent of children with fever and 55 percent with an acute respiratory infection being taken for advice or treatment to a health facility). Despite the availability of a national

Figure 2.5: Trends in care practices (Percent)

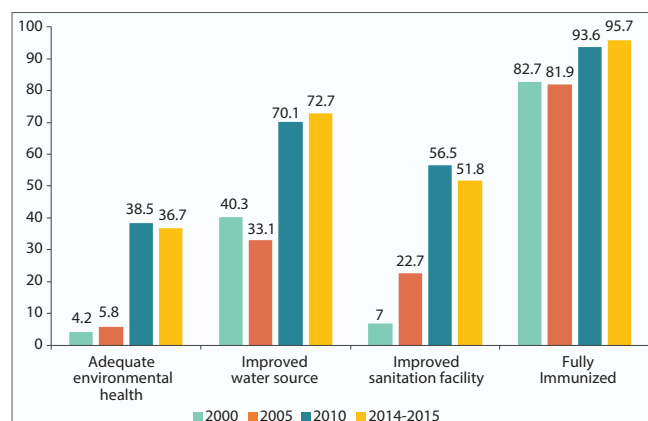


Source: Rwanda DHS (2000, 2005, 2010, 2014-15).

community health insurance and reasonably good geographic access to health services, nearly 60 percent of women still report having problems accessing care (2014/2015 Demographic and Health Survey), which limits their utilization of critical services.

**Although there have been major improvements in environmental health, significant gaps and geographic variations persist.** Since 2005, access to improved water and sanitation facilities has more than doubled (Figure 2.6). Nevertheless, infants and children from vulnerable and poor households in rural areas have serious deficits in environmental health: (i) 32 percent must still rely on non-improved sanitation facilities; (ii) about 60 percent of rural households do not treat water before drinking; and (iii) over 91 percent do not have a handwashing station. Collectively, these deficits constitute a major challenge to the health of infants and children, placing them at greater risk of stunting. Because of poor sanitation and hygiene practices, children are regularly exposed to parasitic worms and are at greater risk of chronic diarrhea and enteric pathogens—conditions which may interfere with absorption of nutrients from food. It is estimated that Rwandese children in households that do not have access to treated drinking water are three times more likely to be stunted than those in households with access to treated piped water (Rwanda Agriculture Board, 2015).

Figure 2.6: Trends in environmental health and access to health services (Percent)



Source: Rwanda DHS (2000, 2005, 2010, 2014-15).

**Trends in food adequacy have stagnated.** The proportion of infants under 6 months who are exclusively breastfed has remained consistently above 80 percent. In contrast, in 2010–15 for children aged 6–24 months, there was little improvement in food intake, with only 18 percent considered to have had a minimum acceptable diet; less than 50 percent had minimum meal frequency, and only 29 percent had the minimum dietary diversity (Figure 2.7). The pattern of decreased food adequacy after the first six months, with suboptimal complementary feeding practices, heightens the risk of micronutrient deficiencies and exposure to infections, and coincides with higher prevalence of stunting.

**Household food security remains highly variable.**<sup>9</sup> Food-insecure rural households depend on low-income agriculture, reinforcing the centrality of agricultural production for household food security. These households have less livestock, less agricultural land, grow fewer crops, are less likely to have a vegetable garden, have lower stocks of food and consume more of their own production. They have less diversified diets, contributing to micronutrient deficiencies. Inadequate dietary intake of iron is among the most common causes of anemia in the country. Rwanda has had success with biofortification (a process by which

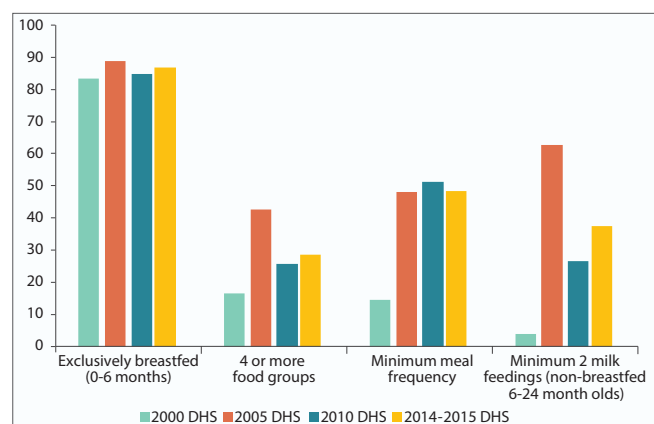
crops are bred to increase their nutritional value) which is an important strategy for addressing micronutrient deficiencies.

**Most household food items are market-sourced, and although food is generally available in the markets, 50 percent of households have difficulties in accessing food.** The most common access issues are seasonal difficulties. Households dependent on markets for food and those with low purchasing power are particularly vulnerable to higher food prices. In addition to seasonal and chronic obstacles in accessing food, 27 percent of all households regularly experience one or more climatic shocks (e.g., drought, irregular rains, prolonged dry spells) that affects their ability to access food.

**When access to all three critical determinants of malnutrition—care practices, environmental health and food adequacy—is analyzed, Rwanda has significant gaps.** In total, only 24 percent of children under 2 receive adequate care; 37 percent have adequate environmental health; and 34 percent of children under 2 have a minimally acceptable diet (World Bank 2017, based on analysis of 2014/2015 Rwanda Demographic and Health Survey). Less than 4 percent have access to all three critical dimensions, illustrating that there are serious gaps in the convergence of interventions that need to be addressed to dramatically affect stunting (Figure 2.8).

**When care practices, environmental health, and food adequacy were analyzed to find out why there was a drop in stunting between 2000 and 2015, improved child care practices were highly significant.** Four or more antenatal care visits, higher deliveries in health facilities, and lower fertility rates explained a significant portion of the difference, underscoring the importance of expanding coverage of these high-impact

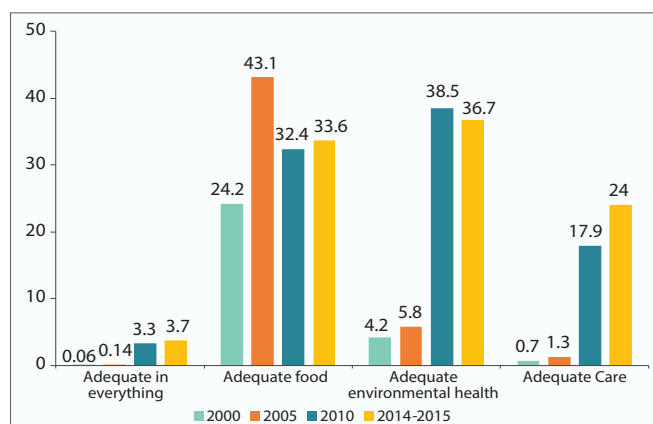
**Figure 2.7: Trends in feeding practices**  
(Percent)



Source: Rwanda DHS (2000, 2005, 2010, 2014-15).

<sup>9</sup> The 2015 Comprehensive Food Security and Vulnerability Analysis found that only 40 percent of all households are food secure (i.e., able to meet essential food and non-food needs without engaging in coping strategies, have an acceptable diet, and use a low share of their budget to cover food needs); 40 percent are marginally food secure; and 17 percent and 3 percent are moderately or severely food insecure.



**Figure 2.8: Trends in coverage of underlying causes of malnutrition (Percent)**

Source: Rwanda DHS (2000, 2005, 2010, 2014-15).

interventions. Interactions between the three interventions were associated with a significantly reduced probability of stunting, which underscores the importance of ensuring that children benefit from a fully coordinated package of interventions. Small birth size, usually attributable to inadequate maternal health before and during pregnancy, was also found to contribute to the likelihood of being stunted.

#### 2.2.4. What are the consequences of stunting?

**Childhood stunting has negative impacts on human capital and economic growth.** Stunting delays cognitive development among children, making it harder for them to learn; children who do not reach their full development potential at an early age are likely to do poorly in school, and ultimately attain lower lifetime earnings. A recent study estimated that, in Rwanda, 22 percent of all child mortality and 13 percent of primary school

repetitions are associated with undernutrition, and stunted children average 1.1 fewer years in school (The Cost of Hunger in Rwanda: The Economic and Social Impact of Child Undernutrition). Because cognitive and physical damage in early childhood is at this point largely irreversible, it is critical to ensure optimum nutrition during the 1,000-day period from pregnancy to a child's second birthday. Adults who were stunted in childhood have lower cognitive ability and fewer socioemotional skills; they are also at higher risk of noncommunicable diseases like cardiovascular problems, obesity, and diabetes, which are on the rise in Rwanda. These problems translate into both lower productivity and lower wages, which ultimately affects economic growth. There is global evidence that adults who were not stunted as children had 21 percent higher household consumption and 10 percent lower risk of living in poverty (Hoddinot et al. 2013).

**Moreover, mothers who were themselves malnourished are more likely to have stunted children (Galasso, Wagstaff, Naudeau, & Shekar, 2016).** Rwandese women who are less than 145 cm. tall, a likely result of childhood stunting, are more likely to have children with restricted growth in pregnancy. Deficiencies in maternal nutrition are reflected in the high proportion of smaller than average newborns<sup>10</sup> and high levels of anemia (25 percent of pregnant women are anemic). Ensuring that women of reproductive age are well-nourished is not only important for the well-being of the women but also for reducing the risk of intergenerational transmission and giving their children a good start in life. The total annual costs associated with undernutrition in Rwanda are estimated at 11.5 percent of GDP, mainly because adults are less productive in performing manual activities (Government of Rwanda, UNECA, WFP, 2013). These figures are comparable to global estimates of up to 11 percent losses in GDP in Africa and Asia attributable to undernutrition.

*How will countries compete in an increasingly complex and digitized economy when one out of four of their children literally have fewer neuronal connections, which are the foundation of human capital?*

~ Jim Yong Kim, World Bank President

<sup>10</sup> The proportion of mothers who reported their impressions of their child's birth size as 'small or very small' rose from about 12 percent in 2000 to 16 percent in 2015.

### 2.2.5. What needs to be done?

**High-impact nutrition interventions are among the most cost-effective best buys to enhance welfare and reduce poverty.** The Copenhagen Consensus 2008 ranked 5 nutrition interventions in the top 10 of 30 proposals for advancing global welfare.<sup>11</sup> Investments in nutrition yield high economic returns.<sup>12</sup> They also facilitate the success of investments in other sectors. Investments in early life nutrition, early learning and stimulation, and the provision of nurturing care and protection from stress ensure that all children reach their human potential and contribute to the economic growth of their nation (Figure 2.9). Finally, it is worth noting that while Rwanda has historically had strong economic performance, with some

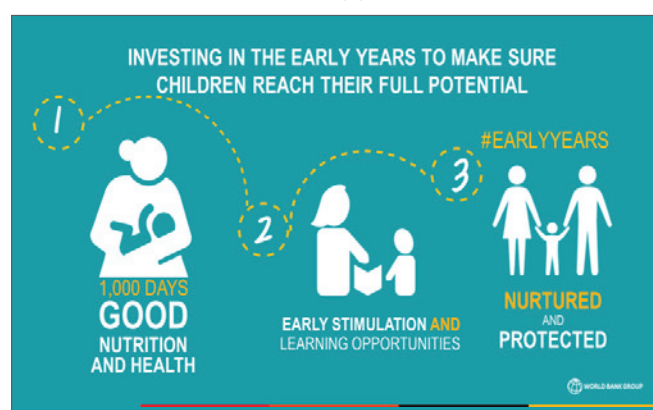
of the highest GDP growth rates in the region to support investments in these critical interventions, economic growth will not be sufficient to eliminate stunting (Box 2.1).

## 2.3 Rwanda's Renewed Commitment

**The Government of Rwanda has renewed its political commitment to make elimination of stunting a national priority.** Food security, nutrition, and early childhood development are prioritized as foundational issues in the *National Strategy for Transformation and Prosperity* (2017–2024). Rwanda has been a member of the Scaling Up Nutrition Movement since 2011 and established a Joint Action Plan to Eliminate Malnutrition (JAPEM 2016–2020), covering all sectors. In recognition of the importance of the first 1,000 days of life, in 2013 the government launched the “1,000 days campaign in the land of 1,000 hills” initiative. The government has set a bold target for all districts to reach a 19 percent stunting rate by 2024, in line with the 2018–2024 Health Sector Strategic Plan.

**A National Early Childhood Development Coordination Program (NECDP) was established within the Ministry of Gender and Family Protection to ensure high-level coordination of all nutrition programs, working under the leadership**

Figure 2.9: Investments in the early years



### Box 2.1: Income growth and stunting

**A recent World Bank study found that the income elasticity of stunting reduction (the extent to which higher incomes lead to lower rates of stunting) is dramatically lower in Sub-Saharan Africa (–0.20), including Rwanda, than in the rest of the world (–0.44).** In countries outside of Sub-Saharan Africa, a 10 percent increase in income is associated with a 5.5 percent reduction in the stunting rate. In Sub-Saharan Africa, a similar increase in income is associated with only a 2 percent reduction in stunting rate. These results suggest that income growth in Rwanda alone will not be sufficient to address stunting. The results also underscore the importance of scaling-up targeted evidence-based, high-impact nutrition-specific interventions.

Source: Shekar et al. 2017.

<sup>11</sup> It ranked micronutrient supplements for children including vitamin A and zinc supplementation first, micronutrient fortification including iron and iodine fortification third, bio-fortification fifth, de-worming and other nutrition programs at school sixth and community-based nutrition programs ninth (Lomberg 2004).

<sup>12</sup> An Investment Framework for Nutrition, developed by the World Bank in partnership with R4D, 1000 Days, and the Bill & Melinda Gates Foundation, estimated high returns on every dollar invested in nutrition, e.g. US\$4 in returns for treating acute malnutrition (wasting), US\$11 for preventing stunting, US\$12 for the treatment and prevention of anemia, and US\$35 for increasing the prevalence of exclusive breastfeeding. Shekar et al. 2017.

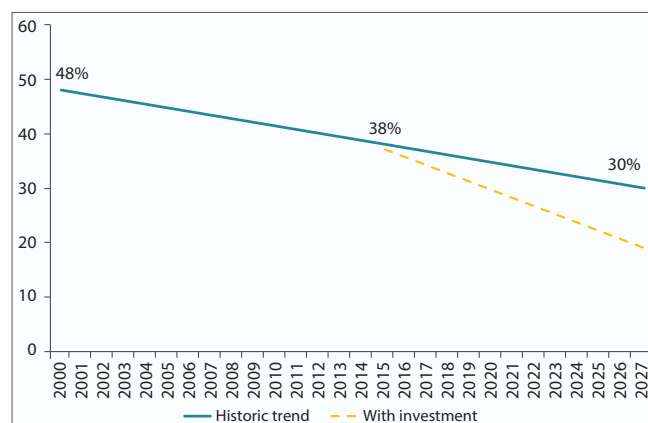
**of the Prime Minister.** The NECDP is preparing a detailed multisectoral strategy for accelerating the reduction in childhood stunting and investing in the early years. District Plans to Eliminate Malnutrition (DPEMs) are expected to guide delivery of a comprehensive package of nutrition interventions, enhancing local capacity, improving multisectoral coordination, and bolstering accountability. Plans are underway for broad-based social mobilization, using *umuganda* community volunteer days and other community events, to disseminate strong and consistent messages about *Kugwingira*—the silent killer that prevents Rwandese children from reaching their full potential. A greater focus is expected to be placed on tracking and monitoring beneficiaries and results through a strengthened Civil Registration and Vital Statistics system and improved interoperability of all key information systems. A number of innovative initiatives are underway, such as: (i) nutrition support grants for vulnerable households (ubudehe 1) with pregnant women and children under 2; (ii) community-based parenting education; (iii) nutrition support to targeted households (ubudehe 1) with pregnant women, lactating mothers and children under two years of age through the provision of highly nutritious fortified blended food; (iv) community-based early childhood development programs.

### 2.3.1. Financing Needs, Impacts and Cost Effectiveness<sup>13</sup>

Using the methodology detailed in *An Investment Framework for Nutrition* (Shekar et al. 2017), the World Bank produced estimates of the resources needed to scale up a package of high-impact nutrition-specific interventions in Rwanda to meet the global nutrition targets for stunting, anemia, breastfeeding, and wasting. The package would avert nearly 200,000 cases of stunting and 1.5 million cases of anemia in women over ten years. *Roughly US\$27.3 million per year over 10 years*

*is needed for national scale up of the package of key interventions.*<sup>14</sup> As shown in Figure 2.10, with this level of investments, Rwanda would bend the arc of history on stunting, attaining rates of reduction comparable to the best performing countries. The detailed health and nutrition impacts of this investment are shown Table 2.1.

**Figure 2.10: What would be the expected impact on stunting? (Percent)**



Source: World Bank (2017), Rwanda DHS (2000, 2005, 2010, 2014-15).

**Among the set of proposed interventions, complementary feeding education, prophylactic zinc supplementation, and the public provision of complementary foods would be the most effective in preventing stunting, with each averting 44,000, 65,000, and 72,000 cases of stunting, respectively.** Although the intermittent presumptive treatment of malaria in pregnancy would be the most cost-effective for preventing stunting, it would prevent fewer than 8,000 cases. Breastfeeding promotion by counseling mothers would be projected to increase the number of infants exclusively breastfed by 28,000, at a cost US\$88 per child exclusively breastfed, with a total additional financing need of US\$2.5 million over 10 years. For preventing anemia in women, staple food fortification would be the most cost-effective for non-pregnant women, at a cost of US\$10 for each case-year of anemia prevented. Over 10 years, staple food fortification and iron and folic acid

<sup>13</sup> This section is drawn from the *Rwanda: An Investment Framework for Nutrition, Stunting Reduction in sub-Saharan Africa*, World Bank, June 12, 2017.

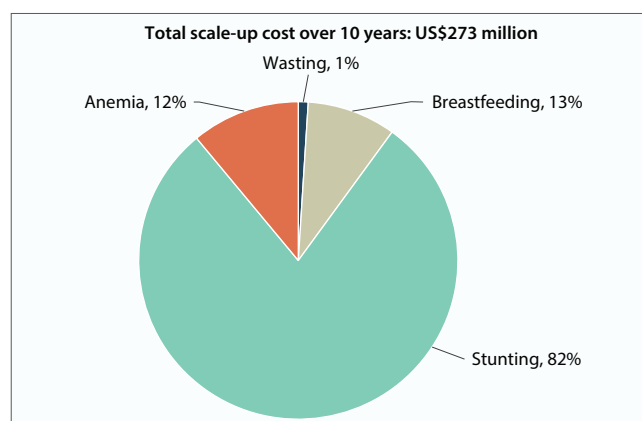
<sup>14</sup> These estimates represent a low case scenario, as they do not include nutrition-sensitive interventions such as cash-transfers targeted to nutritionally vulnerable households, or food-security or WASH infrastructure investments.

**Table 2.1: Estimated 10-year financing needs and cost-effectiveness of scaling up nutrition-specific interventions in Rwanda**

Intervention (nutrition target)	Total 10-year financing needs (US\$, millions)	Cost per death averted (US\$)	Cost per case of stunting averted (US\$)
<b>For pregnant women and mothers of infants</b>			
Antenatal micronutrient supplementation (stunting, anemia)	9.9	18,452	6,788
Infant and young child nutrition counseling (complementary feeding education and breastfeeding promotion combined)	14.7	22,770	327
Complementary feeding education (stunting)	12.2	25,978	277
Breastfeeding promotion (stunting, breastfeeding)	2.5	14,154	2,918
Balanced energy protein supplementation for pregnant women (stunting)	47.5	70,024	52,172
Intermittent presumptive treatment of malaria in pregnancy in malaria-endemic regions (stunting, anemia)	1.9	12,399	260
<b>For infants and young children</b>			
Prophylactic zinc supplementation (stunting)	54.4	28,336	833
Public provision of complementary food (stunting)	96.0	107,055	1,332
Treatment of severe acute malnutrition (wasting)	3.8	5,370	n.a.
<b>For non-pregnant women and general population</b>			
Iron and folic acid supplementation for non-pregnant women (anemia)	16.3	30,331	n.a.
Staple food fortification (anemia)	3.9		n.a.
Pro-breastfeeding social policies (breastfeeding)	5	n.a.	n.a.
National breastfeeding promotion campaigns (breastfeeding)	20	n.a.	n.a.
<b>TOTAL:</b>	<b>273.3</b>	<b>44,059</b>	<b>1,168</b>

Source: World Bank (2017).

supplementation for non-pregnant women would prevent about 391,000 and 859,000 case-years of anemia in women, respectively, and require US\$3.9 million and US\$16.3 million. Among pregnant women, antenatal micronutrient supplementation would prevent 264,000 case-years of anemia, at a cost of US\$37 per case-year prevented, or US\$9.9 million over 10 years. Interventions to reduce stunting would require the most resources, accounting for over 80 percent of the total amount required for scale-up. However, some of the stunting interventions would also affect the breastfeeding and anemia targets. Figure 2.11 represents the distribution of total financing needs across interventions to address the four targets.

**Figure 2.11: Ten-year financing needs for scaling up a package of nutrition-specific interventions in Rwanda, by percent per intervention<sup>15</sup>**

Source: World Bank (2017).

<sup>15</sup> Some costs for anemia, breastfeeding, and stunting are shared across interventions. Costs for breastfeeding promotion (US\$2.5 million) have been included in both the total cost for the breastfeeding target and the total cost for the stunting target; the costs of intermittent presumptive treatment of malaria in pregnancy in malaria-endemic regions (US\$1.9 million) and antenatal micronutrient supplementation (US\$9.9 million) have been included in both the total cost for the anemia target and the total cost for the stunting target.

### 2.3.2. Two Alternative Investment Packages

In an environment of constrained resources in which Rwanda may not be able to raise US\$273 million over the next 10 years, two alternative investment packages are laid out for consideration.

**The Priority Package:** The first—the “priority package”—includes interventions that are the most cost-effective; that is, have the lowest cost per health outcome (e.g., case of stunting averted), and that have well-established global policy guidelines and delivery platforms. Based on those two criteria, the priority package includes antenatal micronutrient supplementation, infant and young child nutrition counseling, intermittent presumptive treatment of malaria in pregnancy in malaria-endemic regions, the treatment of severe acute malnutrition, weekly iron and folic acid supplementation for girls 15–19 years of age attending school, and fortification of wheat and maize flour. These interventions would be scaled up to full program coverage in the first five years and maintained at full coverage levels for the last five years. This priority package would require an estimated US\$57 million over 10 years, or US\$5.7 million annually (Table 2.2). During the 10 years of scale up, this package would prevent more than 39,000 cases of stunting and avert 2,400 deaths

in children under five years of age. It would also prevent more than 754,000 case-years of anemia in women and result in 28,000 children under six months of age being exclusively breastfed.

**The Catalyzing Progress Package:** The second alternative—the “catalyzing progress package”—includes scale-up of all interventions in the priority package, plus a phased approach to scaling up public provision of complementary foods, balanced energy protein supplementation, prophylactic zinc supplementation, and weekly iron and folic acid supplementation for women outside of schools. It is assumed that, for the latter set of interventions, during the first five years emphasis will be placed on establishing global guidelines and on operational research to develop effective delivery platforms, or to develop less expensive products or more cost-effective technologies. Financing needs are approximated as the cost of scaling up this set of interventions from 0 to 10 percent coverage only in the first five years. In the subsequent five years, it is assumed that the coverage expansion of those interventions will accelerate and reach 60 percent by 2025. This package would require US\$12.2 million per year, a total of US\$122 million over 10 years (Table 2.2). It would prevent 3,600 deaths and more than 75,000 cases of stunting among children

**Table 2.2: Benefits and cost-effectiveness by investment package**

Global target	Benefit	Priority package	Catalyzing progress package	Full package: All interventions needed to meet target
		US\$5.7 million/year in financing need	US\$12.2 million/year in financing need	US\$27.3 million/year in financing need
Stunting	Cases of stunting reduced by 2025 (vs 2015) <sup>a</sup>	39,000	75,000	183,000
Anemia	Case-years of anemia in women prevented by 2025	754,000	955,000	1.5 million
Breastfeeding	Babies breastfed over 10 years	28,000	28,000	28,000
<b>All Targets</b>	<b>Child deaths averted over 10 years</b>	<b>2,400</b>	<b>3,600</b>	<b>6,200</b>
	Cost per death averted	23,034	33,409	44,059
	Cost per case of stunting averted	686	1,171	1,225

a. Total impacts of proposed intervention package combined with other health and poverty reduction efforts.  
Source: World Bank (2017)



under age five, increase the number of exclusively breastfed children under six months of age by 28,000, and prevent more than 955,000 case-years of anemia in women.

**In comparing the relative cost-effectiveness of the three investment packages, the two alternative packages are more cost-effective in preventing deaths and stunting.** However, neither is as effective as the full package in making progress toward achieving the stunting, wasting, and anemia targets. The priority and catalyzing progress packages would prevent 2,400 and 3,600 deaths respectively, compared with 6,200 deaths prevented with the full package over 10 years. Under the full package scenario, 183,000 cases of childhood stunting would be prevented, compared with 75,000 cases under the catalyzing progress scenario and 39,000 cases under the priority package scenario. Furthermore, there would be nearly 750,000 and 545,000 more case-years of anemia prevented in women under the priority package and catalyzing progress package, respectively.

### 2.3.3. The Main Lessons

**Many lessons for reducing stunting, from domestic experiences and from countries that have mounted successful programs are reflected in the government's plans.** Some may need further reflection and course correction. The lessons and their implications are summarized in Box 2.2.

**Appropriate policies:** Countries that have mounted successful programs have introduced evidence-based interventions; adopted a pro-poor approach by targeting the poorest communities and the most vulnerable groups with a combined package of demand and supply side interventions; and expanded results-based financing, linking financial incentives to the delivery of services by local governments and providers. Rwanda, Indonesia, and Madagascar are among many countries prioritizing the geographic areas with the highest rates of stunting for convergent programs that support the delivery and uptake of high-impact nutrition interventions. Some countries have successfully taken bold steps to replace ineffective policies with evidence-based policies. Peru cancelled,

#### Box 2.2: Main lessons

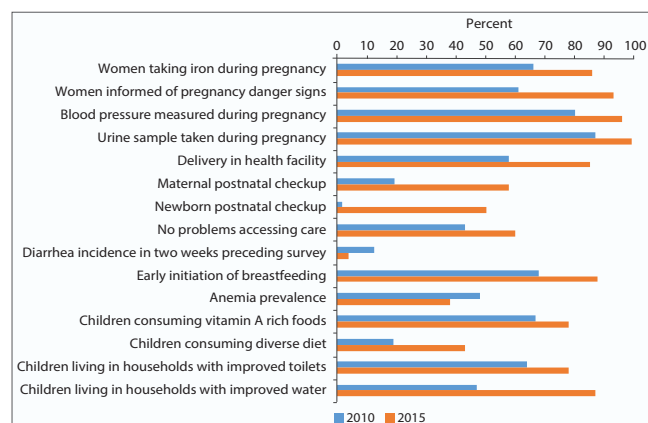
- Mobilize high-level political support and ensure broad-based ownership, from the highest administrative levels down to communities and households.
- Target geographic areas with the highest stunting rates and focus on the poorest and most vulnerable children under 2 years of age, since stunting is largely irreversible after this age.
- Conduct state-of-the-art mass media campaigns and expand high-quality interpersonal counselling to make stunting a visible problem that is everyone's business.
- Focus funding on a selective package of evidence-based interventions that are proven to reduce stunting.
- Establish effective institutional arrangements that: (i) clearly delineate coordination functions from implementation responsibilities; (ii) incorporate accountability mechanisms to facilitate multisectoral action; and (iii) promote the use of interoperable information systems that allow for efficient tracking of beneficiaries starting at birth.
- Expand domestic spending on nutrition, align sector financing with the stunting reduction goals, and provide incentives to providers and local authorities to deliver results.
- Ensure timely monitoring and evaluation to learn what works, take corrective action on what does not, and scale up to reach national coverage.

consolidated, and revamped costly feeding programs to ensure more targeted spending on pregnant women and children in the first 2 years of life (Marini, Rokx, & Gallagher, 2017). Countries like Senegal (World Bank 2016) and Ghana<sup>16</sup> have demonstrated the benefits of community-based approaches that empower local communities to address stunting. In Bangladesh and Nepal, a focus on behavior change and delivery of high-impact interventions have yielded good results. Rwanda also has its own success stories with community-led initiatives, such as that of Kirehe district, which has made unprecedented progress and serves as a model for other districts. The district stands out because of its bottom-up planning and monitoring of activities, clear lines of accountability at all levels, effective use of the *imihigo* performance contracts to hold the mayor accountable, and performance-based incentives for health facilities (Box 2.3). Rwanda needs to direct more attention and public resources to children under 2 from the two lowest wealth quintiles who face multiple impediments. To do this, Rwanda is strengthening the delivery of high impact interventions in the health sector, complemented with demand-side conditional cash transfers delivered through the national social safety net program, the Vision 2020 Umurenge Program, to enhance the uptake of the nutrition services.

**Behavior change:** *Kugwingira* remains a largely invisible problem in Rwanda, as it was initially in other countries with a high burden of stunting. There is a general lack of awareness and even the best-off households have children who are chronically malnourished. Given these information asymmetries, the government has a key role to play in disseminating clear and consistent messages

about the severity and long-term consequences of stunting. Rwanda has made outstanding progress in treating acute malnutrition; now it is necessary to shift attention to preventing chronic malnutrition. In Peru, communication was critical in persuading parents, public officials, and policymakers to unite in turning the tide against stunting. Modern mass media campaigns and behavior change communications with appropriate cultural messages can ensure that stunting is no longer a silent killer in Rwanda. As was done for other public health problems, such as HIV/AIDS in the previous decade, a state-of-the-art mass media campaign is now a national priority. A special effort is required to change the behavior of the poor through high-quality interpersonal counselling and use of communication channels that work well in Rwanda (e.g., radio, *umuganda* days). Two interventions that demonstrate positive results are the provision of key messages to mothers and other household members through peer support groups and the positive deviance approach to behavior change.<sup>17</sup> Use of simple methods to explain chronic malnutrition to illiterate parents, and help them visualize faulty growth proved useful in Peru.

**Figure 2.12: Kirehe, trends in coverage of key indicators, 2010-2015**



Source: Rwanda DHS (2010, 2014-15).

<sup>16</sup> The Ghana program involved scale up of Community Health Planning and investing in a cadre of nutritionists in all 10 regions, who are specifically charged with supporting subdistrict planning and delivery of nutrition-specific interventions, and increasing utilization of health and nutrition services.

<sup>17</sup> The PD approach aims to understand what 'positive deviant families' are doing differently from the parents of malnourished children in the same community and identify behaviors and practices from within that community that have a positive effect and trying to amplify their use to rehabilitate malnourished children; as well as provides community-based rehabilitation for moderate and severely malnourished children

### Box 2.3: Kirehe district -- A model of success

**Kirehe district is a model of how other districts in Rwanda can make rapid progress in reducing stunting.** Stunting among children under 5 dropped steeply, from about 50 percent in 2010 to 29 percent in 2015, a 42 percent decline. Trends in coverage of underlying indicators improved dramatically, including a rise in facility deliveries (from 58 to 85 percent); *early initiation of breastfeeding* (from 68 to 88 percent); and *postnatal visits for women* (from 20 to 58 percent) and newborns (from 2 to 50 percent). The *quality of antenatal care* improved (women reporting taking iron during pregnancy rose from 66 to 86 percent), as did dietary diversity (from 19 to 43 percent) and *environmental health* (clean water source rose from 47 to 87 percent and sanitation from 64 to 78 percent).

In discussions with representatives of the district mayor's office, district hospital personnel, and development partners (UNICEF, Partners in Health) several factors were noted as significant in helping Kirehe achieve such improvements in child malnutrition.

- **Leadership and accountability.** President Kagame's visit to the district in 2009 helped galvanize political support and re-energized local authorities. The district commitment to significantly reduce malnutrition was codified in the *imihigo* performance contract between the district mayor and the President. Political commitment was broad-based, from the district mayor to leaders at the sector, cell, and village levels, with each expected to set goals and carry out activities to meet district malnutrition targets.
- **Improved coordination and monitoring.** District leadership channeled resources into strong implementation and monitoring of the District Plan to Eliminate Malnutrition (DPEM). Oversight of the DPEM was through a multisectoral committee that plans, coordinates, and monitors progress of activities across different sectors that were considered crucial for promoting convergence. These committees and plans are mirrored at the sector, cell, and village levels, and heavily emphasize regular reporting and rapid course correction. The continual process of planning, coordinating, and monitoring results through the DPEM was viewed as an example of good practice to be emulated by other districts.
- **Engagement with community health workers.** Community health workers were trained, and regularly supervised, to deliver a comprehensive set of community-based nutrition interventions, including monthly screening of all children for malnutrition and a communications campaign on infant and young child feeding and hygiene practices. The district hospital provided close follow-up, with emphasis on both identifying cases and addressing potential causes.
- **Development partner support.** Since 2013, funding for the planning, coordination and monitoring of the DPEM in Kirehe has been provided by UNICEF, with resources channeled to the district hospital, which then allocates these resources to activities across sectors. Partners in Health (PIH) has a strong presence in Kirehe and has provided significant support to and implementation of several programs there. The "Race to the Top"—*Inkera y'imihigo*, a performance-based program funded by PIH that incentivized health centers to improve child and maternal nutrition health indicators, was instrumental in expanding service coverage and improving outcomes. The International Fund for Agricultural Development supported agriculture and irrigation program that contributed to significant improvements in agricultural production and food security in the district. Heifer International provided small livestock to households.



**Best-buy interventions:** Intervening in the first 1,000 days of life (including the period before the child is born) is vital to preventing stunting and promoting early child development. While the current focus on children under 5 in Rwanda is important for their general well-being, to prevent stunting there needs to be a razor-sharp focus on children under 2, because stunting is largely irreversible after this age. High-quality antenatal care and facility deliveries improve birth outcomes and reduce the risks of stunting. For children under 2, regular height measurement and monitoring needs to be added to weight measurement and monitoring of acute malnutrition; and promotion of high-quality complementary feeding practices during the 6–24-month period needs to be scaled up. Improving dietary diversity and meal frequency, drawing on locally produced and fortified food, are preferable to costly feeding programs that are difficult to sustain. A review of complementary feeding interventions in Rwanda and other countries shows that education programs that focus on feeding children a diverse diet seem promising (Dewey & Abu-Afarwuh, 2008).

**Convergence and coordination:** While global evidence of the importance of well-coordinated investments is strong, much remains to be learned about what combination and sequence of interventions has the greatest impact in different contexts. It is recognized that convergence of interventions in the same geographic areas will be important for reaching children with a full package of services to support child care, feeding, and hygiene practices. In Peru, convergence was facilitated by focusing on seven high-impact interventions that all local governments were incentivized to deliver. In Rwanda, all 30 districts have nutrition programs and benefit from some financing. Nevertheless, there are persistent gaps: not all sectors are covered, few of the required

interventions are provided to scale, and coverage of beneficiaries varies widely.<sup>18</sup> The government of Rwanda has adopted a multi-sectoral strategy for involving all relevant sectors at the national, community, and household levels. It now needs to put in place effective decentralized coordination structures, mechanisms, and incentives to align financing across sectors with the stunting reduction goals.

**Early childhood development (ECD):** International research on successful approaches to combatting child malnutrition has found that holistic ECD interventions<sup>19</sup> can support children to reach their full developmental potential (Engle et al., 2007; Maalouf-Manasseh et al., 2015). While some countries have set up center-based ECD services, like the less than successful experience in India, global experience shows that ECD services delivered through home-based approaches, as in Jamaica, can be much more effective in providing early stimulation, and promoting positive parenting skills, including education on complementary feeding and hygiene practices. In Peru, ECD centers for disadvantaged children complemented the high-impact interventions delivered through the health system and the broader poverty alleviation strategy targeting the same beneficiaries. Rwanda has many community ECD programs and now plans a standardized model with age-specific interventions for national scale-up and needs to determine how these community centers will be funded.

**Domestic financing:** Successful programs have raised public funding, improved efficiency, and lowered dependence on external financing. In Peru, the government doubled spending to implement its ambitious strategy, shifted funding to the poorest areas, and allocated public funds to municipalities only for high-impact interventions.

<sup>18</sup> The Rwanda Stakeholder and Action Mapping exercise found that coverage of core nutrition actions, as defined by the percentage of actions covering at least 30 percent of the target population, ranges from 32 percent in Kicukiro to 81 percent in Nyamagabe, with most districts falling in the 40–60 percent range. The three actions that had the most gaps in coverage were (1) complementary feeding, (2) provision of micronutrient supplements, and (3) support for improved water sources.

<sup>19</sup> ECD interventions comprise several stages of mental and physical growth in a variety of contexts such as homes, schools, and the community, and activities range from childcare to nutrition for pregnant mothers and young children to parent education.

In Rwanda, domestic financing for nutrition-specific interventions through the Ministry of Health, though improving, remains relatively modest,<sup>20</sup> with development partners (e.g. USAID, UNICEF/ Dutch cooperation) continuing to fund some of the largest programs.<sup>21</sup> In line with the decentralization policy, funding to districts represents 82 percent of total health spending. Investments in districts, which are at the frontline of the battle against stunting, are often fragmented; different sectors work in silos, and the DPEMs suffer from inadequate financing. National allocations to sectoral ministries tend to follow historical trends. In Peru, the shift to national results-based budgeting was considered a watershed for investing in nutrition because it created a rigorous approach for allocating resources based on stunting outcomes. Rwanda also has extensive experience with performance-based financing (PBF) in the health sector that it plans to bring to bear in tackling stunting (Rusa et al., 2009; Basinga et al., 2011). The proposed inclusion of a comprehensive set of nutrition indicators in the national PBF program—for both clinical care and community health workers—is expected to better align resources with the delivery of high quality nutrition and health services. It will require rigorous monitoring and evaluation to determine what works and how it should be scaled up. The proposed introduction of conditional nutrition support grants for the most vulnerable households (*ubudehe* 1) that have pregnant women and children under 2 is in line with international good practice, offering financial incentives to mothers who avail themselves of key nutrition services. If successful, the pilot program will need to be expanded to benefit all children in the bottom two wealth quintiles.

**Continual measurement:** Timely monitoring and evaluation are critical to learning what works, take corrective action on what does not, and scale up

to reach national coverage. Peru invested heavily in regular national surveys to track progress in reducing stunting with yearly reporting on targets and outstanding actions. These frequent household and demographic surveys were accompanied by effective monitoring systems and regular consultations with local governments to take stock of progress in improving primary health and nutrition services. Rwanda has a long track record of generating evidence and bolstering accountability through the *imihigo* contracts. Efforts are underway to develop a comprehensive learning agenda to monitor and measure the results and impact of the program. The goal is to mobilize and empower local stakeholders to assess the stunting situation in their districts; pilot innovations and share good practices; take regular stock of progress and adopt corrective measures; and scale up good practices.

## 2.4 Conclusions

**Rwanda is poised to join other countries that have made rapid progress in reducing stunting.**

With its renewed political commitment to tackle stunting, it has a historic opportunity to mobilize all stakeholders—parents, local leaders, and policymakers—around the stunting reduction targets. Rwanda can create a positive virtuous cycle of producing a generation of well-nourished children who grow, thrive and reach their full potential, contributing to human capital development and to future economic growth. Well-targeted, adequately funded, and effectively implemented smart policies to prevent stunting can reduce poverty and boost shared prosperity in Rwanda.

*We cannot afford to see a big part of our population stunted when we have the means to prevent it.*

*~President Paul Kagame*

<sup>20</sup> Domestic spending on health has increased since 2010/2011 but still accounts for only 40 percent of overall health spending (2013/2014). In the 2014/2015 Budget spending on nutrition was prioritized to more than double to about Rwf 7 billion (equivalent to about US\$8 million) but it is only about 5 percent of the total health budget (Ministry of Health, September 2016).

<sup>21</sup> These figures do not fully capture public spending on nutrition by other ministries that support multi-sectoral interventions, underscoring a need to better quantify, track, and align all spending related to stunting reduction targets.

## REFERENCES

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- Basinga, P., P. Gertler, A. Binagwaho, A. Soucat, J. Sturdy, and C. Vermeersch. 2011. "Effect on Maternal and Child Health Services in Rwanda of Payment to Primary Health-care Providers for Performance: An Impact Evaluation. *Lancet*. 377 (9775): 1421–1428
- BNR (National Bank of Rwanda). 2018. Exchange Rate Archives. Kigali. <https://www.bnr.rw/index.php?id=89>.
- . 2018. *External Sector Statistics*. Kigali. Retrieved from <https://www.bnr.rw/index.php?id=123>
- . 2018. *Monetary Survey Statistics*. Kigali. [https://www.bnr.rw/fileadmin/AllDepartment/Statistics/MonetaryStatistics/Monetary\\_Survey\\_2018\\_.pdf](https://www.bnr.rw/fileadmin/AllDepartment/Statistics/MonetaryStatistics/Monetary_Survey_2018_.pdf)
- . 2018. *Monetary Policy and Financial Stability Statement*. Kigali. [https://www.bnr.rw/fileadmin/AllDepartment/MonetaryPolicy/upload/annualreport/AnnualReportOnTheFinancialStability/MPFSS\\_2018\\_03\\_06\\_Final\\_Version.pdf](https://www.bnr.rw/fileadmin/AllDepartment/MonetaryPolicy/upload/annualreport/AnnualReportOnTheFinancialStability/MPFSS_2018_03_06_Final_Version.pdf)
- . 2018. Press Release: Quarterly Financial Stability Committee and Monetary Policy Committee Meetings. Kigali. [https://www.bnr.rw/fileadmin/AllDepartment/PressReleases/PRESS\\_RELEASE28.pdf](https://www.bnr.rw/fileadmin/AllDepartment/PressReleases/PRESS_RELEASE28.pdf)
- Dewey, K. G., and S. Abu-Afarwuh. 2008. *Systematic Review of the Efficacy and Effectiveness of Complementary Feeding Interventions in Developing Countries*. Berkeley: University of California.
- Engle, P. L., M. M. Black, J. R. Behrman, M. Cabral de Mello, P. Gertler, L. Kapiriri, L., . . . M. Eming Young, 2007. "Strategies to Avoid the Loss of Developmental Potential in More than 200 Million Children in the Developing World. *Lancet* 369 (9557) :229-242.
- Galasso, E., A. Wagstaff, S. Naudeau, S., & Shekar, M. (2016). *The Economic Costs of Stunting and How to Reduce Them*. The World Bank Group.
- Government of Rwanda, UNECA, WFP. 2013. *The Social and Economic Impact of Child Undernutrition in Rwanda*.
- Hoddinot et al. 2013. *The economic rationale for investing in stunting reduction*. Maternal & Child Nutrition. Suppl. 2:69-82
- IMF. 2017. Staff Report for the 2017 Article IV Consultation, Seventh Review Under the Policy Support Instrument, and Second Review Under the Standby Credit Facility- Press Release; Staff Report; and Statement by the Executive Director for Rwanda. Washington, DC.: International Monetary Fund.
- . January 2018. Rwanda : *Eighth Review Under the Policy Support Instrument and Request for Extension, and Third Review Under the Standby Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Rwanda*. IMF Country Report No. 17/217, Washington, DC. Retrieved from <http://www.imf.org/en/Publications/CR/Issues/2018/01/18/Rwanda-Eighth-Review-Under-the-Policy-Support-Instrument-and-Request-for-Extension-and-Third-45567>. Washington, DC.: International Monetary Fund.
- Lomberg: Bjorn, editor. 2004 *Global Crises, Global Solutions*. New York: Cambridge University Press, 2
- 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.
- Marini, A., C. Rokx, and P. Gallagher. 2017. *Standing Tall: Peru's Success in Overcoming its Stunting Crisis*. Washington, DC: World Bank.
- Ministry of Finance and Economic Planning (MINECOFIN). 2017. *Updated MacroFramework Public Dataset*. Kigali: MINECOFIN. <http://www.minecofin.gov.rw/index.php?id=173&L=registration.register>.
- . 2018. *Budget Execution Report for July-December 2017*. Kigali: MINECOFIN. [http://www.minecofin.gov.rw/index.php?id=231&L=data%3A%2F%2Ftext%2Fplain.&tx-filelist-pi1-174%5Bpath%5D=Budget\\_Execution\\_Reports%2F2017-2018\\_Budget\\_Execution\\_Reports%2FQuarter\\_2&cHash=7e47f14edb4034991bb1e06a2c408320](http://www.minecofin.gov.rw/index.php?id=231&L=data%3A%2F%2Ftext%2Fplain.&tx-filelist-pi1-174%5Bpath%5D=Budget_Execution_Reports%2F2017-2018_Budget_Execution_Reports%2FQuarter_2&cHash=7e47f14edb4034991bb1e06a2c408320).

- . 2017. *Budget Execution Report July-December 2016*. Kigali: MINECOFIN. [http://www.minecofin.gov.rw/index.php?id=231&tx-filelist-pi1-174%5Bpath%5D=Budget\\_Execution\\_Reports%2FBudget\\_Execution\\_Report\\_July-December\\_2016&cHash=92739b49b6edc959ed452f6699f53d8e](http://www.minecofin.gov.rw/index.php?id=231&tx-filelist-pi1-174%5Bpath%5D=Budget_Execution_Reports%2FBudget_Execution_Report_July-December_2016&cHash=92739b49b6edc959ed452f6699f53d8e).
- Ministry of Health. 2016. *Rwanda Health Resource Tracking Output Report*. Kigali: NISR. [http://www.moh.gov.rw/fileadmin/templates/MOH-Reports/HRTT\\_20Report\\_20\\_20for\\_20FY2013-14\\_20Expenditure\\_20\\_20FY2014-15\\_20Budget\\_Final.pdf](http://www.moh.gov.rw/fileadmin/templates/MOH-Reports/HRTT_20Report_20_20for_20FY2013-14_20Expenditure_20_20FY2014-15_20Budget_Final.pdf).
- NISR (National Institute of Statistics of Rwanda). 2017. *Financial Inclusion in Rwanda-FinScope Survey (2016)*. Kigali: NISR. <http://www.statistics.gov.rw/publication/finscope-rwanda-2016>.
- . 2018. Consumer Price Index (CPI). Kigali: NISR. <http://statistics.gov.rw/publication/consumer-price-index-cpi-february-2018>.
- . 2017. Seasonal Agricultural Survey Report - Season A, 2017. Kigali: NISR. <http://statistics.gov.rw/publication/seasonal-agricultural-survey-report-season-2017>.
- . 2018. *GDP National Accounts, 2017*. Featured Reports, Kigali: NISR. <http://statistics.gov.rw/publication/gdp-national-accounts-2017>.
- . 2017. *Seasonal Agricultural Survey Report - Season B, 2017*. Kigali: NISR. <http://statistics.gov.rw/publication/seasonal-agricultural-survey-report-season-b-2017>.
- . 2016. *Demographic and Health Survey 2014/2015 - Final report*. Kigali: NISR. <http://www.statistics.gov.rw/publication/demographic-and-health-survey-20142015-final-report>.
- . 2016. *Integrated Household Living Conditions Survey 4 (EICV 4)*. Kigali: NISR. <http://www.statistics.gov.rw/publication/rwanda-poverty-profile-report-results-eicv-4> Rusa, L., M. Schneidman, G. Fritsche, and L. Musango. 2009. Rwanda: Performance-Based Financing in the Public Sector. In: Eichler R, Levine R, (Eds.). *Performance incentives for global health: potential and pitfalls*. Washington: Center for Global Development.
- Rwanda Agriculture Board, 2015
- Shekar, M., J. Kakietek, J. Dayton Eberwein, and D. Walters. 2017. *An Investment Framework for Nutrition: Reaching the Global Targets for Stunting, Anemia, Breastfeeding, and Wasting*. Directions in Development--Human Development. Washington, DC: World Bank.
- UNICEF's Approach to Scaling Up Nutrition for Mothers and their Children, June 2015.
- United Nations World Food Programme. 2016. *Rwanda: Comprehensive Food Security Analysis 2015 (Data collected in April-May 2015)*. Rome; WFP.
- World Bank. 2011. *Rwanda Situation Analysis and Policy Options*. Washington, DC: World Bank.
- . 2016. *A Decade of Support to Senegal's Nutrition Program*. Washington, DC: World Bank. Washington, DC: World Bank.
- . 2017. *Rwanda: An Investment Framework for Nutrition, Stunting Reduction in Sub-Saharan Africa*. Washington, DC: World Bank.
- World Bank Group. 2018. *World Development Indicators (WDI)*. *World Bank Open Data*. Washington, DC. <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>
- . 2017. *World Bank Rwanda Economic Update: Rethinking Urbanization*. Rwanda Economic Update, Edition 11. Kigali: World Bank Group. <http://www.worldbank.org/en/news/press-release/2018/01/11/world-bank-rwanda-economic-update-rethinking-urbanization>.
- . 2018. *Global Economic Prospects: Broad-Based Upturn, but for How Long?* Washington, DC: World Bank Group. <http://www.worldbank.org/en/publication/global-economic-prospects>.





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