7Th INTEGRATED HOUSEHOLD LIVING CONDITIONS SURVEY REPORT

Republic of Rwanda

NISR — NATIONAL INSTITUTE OF STATISTICS OF RWANDA

RWF

EICV7

POVERTY PROFILE

Thematic Report

2023-24

7Th

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Thematic Report

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Foreword

The Government of Rwanda requires timely and accurate information to monitor progress on poverty reduction. The country's strategies and targets for poverty reduction are outlined in key policy frameworks, including the second National Strategy for Transformation (NST2), the 2030 Sustainable Development Goals (SDGs), and Vision 2050.

The 2023/24 Integrated Household Living Conditions Survey (EICV7) is the seventh in a series of surveys that began in 2000/01. It also marks a break from previous rounds, as the methodology for data collection, processing, and poverty measurement was substantially revised to align with emerging best practices. Consequently, the poverty rates from this survey round mark the beginning of a new series.

This report focuses on poverty, presenting the main findings related and offering a detailed profile of the poor—an essential step in the ongoing efforts to identify vulnerable populations and address the challenge of eliminating poverty.

Companion reports provide in-depth analysis on thematic areas including education, utilities and amenities, economic activities, agriculture, gender, youth, and multidimensional (as opposed to solely monetary) poverty

The EICV7 survey revealed that 27.4% of the population was living in poverty in 2023/24. Modelling shows that if the same methodology had been applied in 2016/17, the poverty rate at that time would have been 39.8%. This represents a reduction in poverty of just over twelve percentage points over seven years. This is a significant drop in poverty, but it is also clear that much remains to be done in order to eliminate poverty.

I extend my sincere thanks to the National Institute of Statistics of Rwanda (NISR) for their excellent work on EICV7, and for the diligence, integrity, and professionalism that they demonstrated throughout the process of collecting, analyzing, and reporting the data for this report. I am also deeply grateful to the many collaborators ranging from the thousands of households who patiently answered the long survey questionnaire, to those who provided financial and technical assistance – whose inputs were essential to the successful production of this important report.

I encourage all stakeholders—government agencies, researchers, development partners, and the public—to utilize the findings of the EICV7 effectively to drive impactful actions that improve the lives of Rwandans.

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Acknowledgements

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Executive Summary

The EICV7 survey, conducted over a period of 12 months between October 2023 and October 2024 using Computer-Assisted Personal Interviewing (CAPI) technique as the method of data collection. The EICV7 has two main components: cross-sectional sample of households and VUP Survey among VUP beneficiaries.

The EICV7 cross-sectional survey is designed to represent the current household-based population of Rwanda. The primary sampling units (PSUs) are enumeration areas (EAs) defined by the 2022 Rwanda general population and housing census. These EAs were stratified by district, urban, and rural areas and selected with probability proportional to size (PPS) using the number of households as the measure of size. A sample of 1,674 EAs was distributed across nine data collection cycles over 12 months to capture seasonal variability. In the second stage, nine households were systematically sampled within each EA, with provisions for replacements of 3 household per cluster to ensure high response rates. The response rate was more than 99%.

The main objective of the VUP survey is to measure the socioeconomic characteristics of VUP beneficiaries at national level. For the sampling design, the sampling frame was derived from a comprehensive beneficiary database from LODA. A stratified two-stage sampling approach was used, with clusters of beneficiaries as PSUs and 12 households sampled per cluster. Stratification was based on the predominant VUP component within each cluster.

The EICV7 aims to provide timely and updated statistics to facilitate monitoring progress on poverty reduction programs and evaluation of different policies as stipulated in the second National Strategy for Transformation (NST2), the 2030 Sustainable Development Goals (SDGs) as well as the Vision 2050.

This report primarily compares results from EICV7 with those of EICV5 conducted in 2016/17, as the EICV6(2019/20) was interrupted by the COVID-19 pandemic and therefore could not provide comprehensive data. The analysis highlights developments over time and examines patterns across Rwanda's provinces, urban and rural areas and districts where appropriate. Particular emphasis is placed on presenting disaggregated results for men and women, to explore gender-related aspects of key social and economic characteristics of individuals and households in Rwanda.

The data reported here come from the EICV7 survey, and were collected between October 2023 and October 2024. Enumerators visited each of 15,054 households on five occasions spaced two days apart. The households were chosen using a stratified multi-stage sample design. Prior to EICV7, the last complete household survey was EICV5, undertaken in 2016/17.

Measuring poverty in 2024

The measure of wellbeing used is consumption per adult equivalent in January 2024 prices.

Consumption includes food consumed at home and away from home, whether purchased or home-produced or received as a gift or in-kind payment. It also includes non-food items, the use value of durable assets such as phones and bicycles, spending on health and education, and the rental value of housing.

Total household consumption is divided by the number of adult equivalents, calculated using a hybrid scale where two-thirds of the weight is in proportion to caloric needs, and the other third reflects the differential non-food needs of children and adults, as well as economies of scale in providing for a larger household.

Since prices varied by month and district, the cost of each household's consumption was expressed in the national prices of January 2024, using household-specific Paasche price indexes.

The (headcount) poverty rate measures the percentage of people whose consumption per adult equivalent falls below a poverty line. The poverty line was established by first determining the cost of consuming 2,400 kcals per day — the amount considered to be minimally adequate for a young adult male — and then grossing up this cost to include non-food spending, based on the consumption patterns of those whose food spending was close to the estimated food poverty line. Further details are shown in Annex A.

By this measure, 27.4% of the population was poor in 2024. Given sampling variation, we have 95% confidence that the poverty rate was between 26.4% and 28.4%.

Changes in Poverty since 2017

The protocols for collecting data, and the nature and scope of the questions, were relatively similar from EICV1 (1999/2001) through EICV6. Reflecting the evolving best practice in poverty measurement, a number of important methodological changes were made for EICV7. Among the more important changes were a redefined poverty line, a revised adult equivalent scale, fewer visits per household and a shorter recall period for food consumption, separate questions on food consumption and acquisition, greater detail on food consumed out of the home, and household-level price deflation.

As a result of these changes, one cannot make direct comparisons of consumption and poverty between EICV7 and EICV5, although direct comparisons of most non-food items are possible. In order to measure the evolution of poverty over time, we made use of modeling techniques. Using only right-hand variables that are collected and measured in the same way in EICV5 and EICV7, we used the EICV7 data to estimate a multiple-imputation regression model of (the log of) consumption per adult equivalent, and then applied this model to the EICV5 data to predict real consumption. This was compared to the poverty line to predict what the poverty rate would have been in 2017 if the protocols and definitions used for EICV7 had been used for EICV5.

The key results of this exercise are shown in Table 0.1. The modelling exercise shows that **the poverty rate (using the updated methodology) would have been 39.8% in 2017, and fell to 27.4% in 2024,** representing a reduction of 12.4 percentage points over a period of 7 years.

The poverty rate fell substantially in all regions of the country outside Kigali, and probably in Kigali too (but we cannot be 95% confident of this). The regional ranking did not change: poverty is lowest in Kigali city, and highest in the Southern and Western regions.

Table 0.1. Headcount Poverty Rate in 2024 (actual) and 2017 (modelled) by province

	EICV7 actual	EICV5 predicted adj.	Change		95% confidence interval	
	2024	2017	2017 to 2024		2024	
	% of individuals who are poor		% point change	% change	Lower bound	Upper bound
Province						
Kigali City	9.1	14.3	-5.3	-37	7.0	11.2
South	34.7	47.6	-12.9	-27	32.7	36.7
West	37.4	51.7	-14.3	-28	35.0	39.8
North	20.2	33.0	-12.8	-39	18.1	22.3
East	26.8	39.1	-12.4	-32	24.7	28.8
Rwanda	27.4	39.8	-12.4	-31	26.4	28.4

Predictions for 2017 are based on an OLS regression model of the log of consumption/ae p.a. in January 2024 prices, with multiple imputation. The confidence interval for 2017 is 37.7-41.4, conditional on the model used.

Figure 0.1 shows the reported poverty rates for the old series (2000/01 through 2016/17), and the new series (modelled for 2016/17 and actual for 2023/24). The updated methodology will be applied to future EICV surveys, the next of which will be in 2026/27.

Consistency Across Indicators

The reduction in poverty is consistent with most other socio-economic indicators. Between 2017 and 2024, real GDP per capita rose by 37%, and the consumption component of GDP rose by 27% per person. Over the same period, the proportion of those aged 16 and above who were employed rose from 44% to 54%. And the dependency rate, defined as the number

of young plus old as a fraction of those of working age, declined from 78% to 71%. On the other hand, the price of food was relatively higher in 2024 than in 2017 (when it was already high by recent standards): while this would benefit anyone producing a food surplus, it would hurt households who were net buyers of food, a group that includes many poor households.

Other measures of wellbeing also increased between 2017 and 2024: Table 0.2 shows just three of these. There was a major expansion in access to electricity, particularly in rural areas and for poorer households; a higher proportion of households with a member who fell ill got care, in all parts of the country and in all quintiles; and there was an increase in the proportion of households using improved sanitation.

Figure 0.1. Poverty Rates, 2000/01-2016/17 (Old Series), 2016/17-2023/24 (New Series)
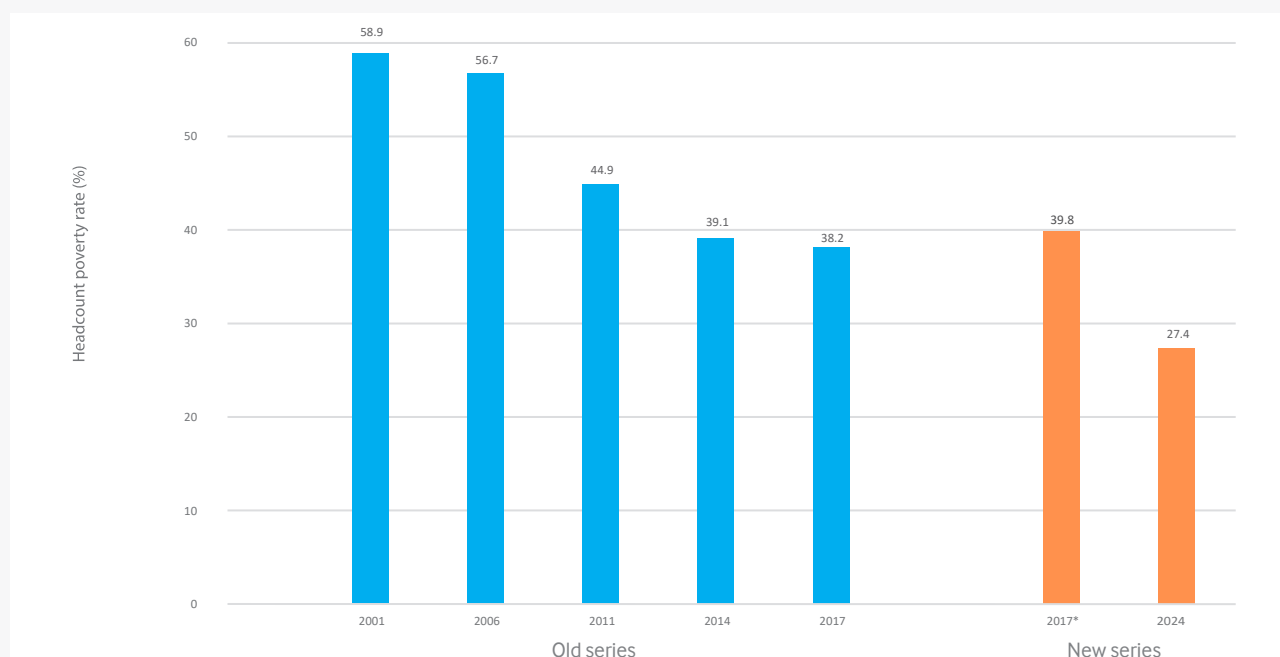
*Sources: EICV1-EICV5, and EICV7. Notes: * New Series Estimate for 2016/17 are based on a multiple-imputation regression model*

Table 0.2. Access to Electricity, Health Care, and Sanitation, by Province, Area, and Quintile

	Energy from grid or solar panels		Got care, if ill (%)		Improved sanitation	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
	% of households					
National	34.4	72.0	52.2	64.6	86.2	94.3
Province						
City of Kigali	79.2	91.7	54.8	63.8	94.5	99.4
Southern	22.7	63.7	49.6	65.6	74.6	90.8
Western	31.7	71.3	47.3	63.0	88.1	94.5
Northern	22.8	67.3	52.3	64.9	86.5	95.1
Eastern	27.7	71.3	57.3	65.4	90.0	93.9
Residence area						
Urban	76.1	88.1	55.5	65.5	93.6	98.3
Rural	24.4	65.3	51.5	64.3	84.4	92.7
Quintile						
Lower	9.0	53.2	41.8	57.4	76.3	88.6
Mid-lower	16.4	62.4	46.7	62.8	81.0	92.2
Mid	24.5	68.4	51.6	64.2	85.9	94.0
Mid-upper	36.5	76.2	56.0	68.2	88.5	96.0
Upper	68.6	92.6	60.1	68.8	94.2	99.0

Sources: EICV5 and EICV7. Note: Quintiles refer to real consumption per adult equivalent.

Introduction

Since 2000, Rwanda's GDP has risen five-fold, and GDP per capita has increased from $1,016 in 2000 (in purchasing power parity terms in 2021 prices) to $3,060 in 2023. This has been reflected in a rising standard of living, and improvements in a wide array of social indicators. The Rwanda Vision 2050 aims to bring the country to upper-middle-income status by 2035, and to eliminate poverty altogether by 2050.

A central purpose of this report is to provide an update of the extent of poverty in Rwanda, to model the trends in poverty, and to set out the correlates of poverty in the form of a poverty profile.

 A key reason for measuring poverty is to help ensure that the poor are not overlooked, which in turn helps keep public policy focused on ways to help people rise out of poverty. A second reason is to allow decision makers to determine the extent to which policy measures – such as higher education coverage, health insurance, and VUP transfer payments – are reaching the poor and serving them well.

It is widely accepted that poverty has many dimensions. Nobel prize winner Amartya Sen conceives of poverty as the lack of those elements that allow individuals to function successfully in society. This includes money, of course, but also such things as good health, literacy, self-confidence, adequate housing, and the ability to connect with others. Some researchers have developed indexes of multidimensional poverty that aggregate such measures (Alkire et al. 2015; UNDP 2015), recognizing the need to acknowledge the complexity of poverty along with the need for some summary measure of it. A companion report to this one explores the issues of multidimensional poverty, and estimates an index based on EICV data.

The approach used in this report is the traditional one of using a "money metric", whereby a measure of monetary poverty is constructed, and substantial details about other measures such as housing and their correlations with monetary poverty are provided. The benefit of this approach is that it generates a measure of poverty, based on real consumption per adult equivalent, that is widely understood. It provides a basis for comparisons of poverty over time, although as noted below, the substantial methodological changes made in the course of EICV7 mean that special techniques are needed to compare current poverty rates with those from EICV5.

The data analyzed in this report come from the seventh Integrated Living Standards Survey (EICV7). A total of 15,066 randomly-chosen households were identified, of which 15,054 were successfully interviewed between mid-October 2023 and mid-October 2024. The surveyed households, representing 62,110 people, were asked about their habits of spending, and about a wide variety of other variables related to such things as education, health, demography, assets, housing, and their response to economic shocks.

With the important exception of food consumption, most of the variables in EICV7 were collected in the same way as in previous EICV surveys, and so may be compared over time. The new treatment of food consumption, and hence of overall consumption, and the re-construction of the poverty line, are discussed in the sections below; a companion paper sets out the methodological underpinnings of the poverty analysis based on EICV7 in great detail.

In what follows, we first provide some context on the Rwandan economy over the past decade (Section 2), provide an overview on survey methodology (Section3), summarize the evolution of a variety of socio-demographic indicators (Section 4), report on the poverty rate and explain how we model its trends over time (Section 5), present a poverty profile (Section 6), and finish with inequality measurement (Section 7).
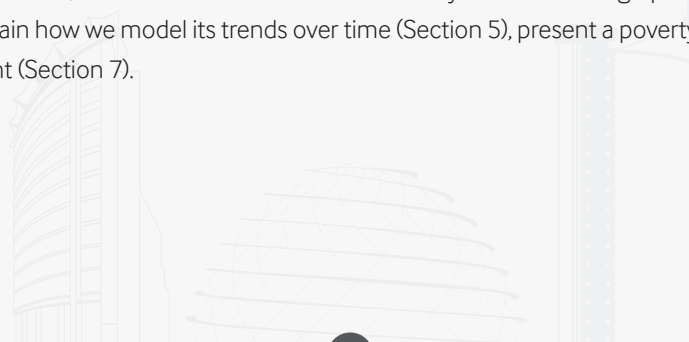
Economic Context

Before reporting the level and trends in poverty, it is useful to provide some context about the recent evolution of the Rwandan economy and some key demographic indicators.

2.1 GDP

Figure 2.1 shows the evolution of Gross Domestic Product (GDP) since 2014, in constant 2017 prices. Over the ten-year period, GDP rose from RWF 6.4 trillion to RWF 12.4 trillion, or by 93%, equivalent to 6.8% per year. GDP consists of spending by households, as well as spending by government, investors, and net exports. For the purposes of tracking poverty and wellbeing, it may be more appropriate to look at household (and NGO) consumption, shown by the grey line in Figure 2.1. This series grew by 5.9% annually between 2014 and 2023, or slightly more slowly than overall GDP. The dotted line in Figure 2.1 tracks population (in thousands), which is growing at 2.3% annually.

Figure 2.1. GDP and Population, 2014-2024.
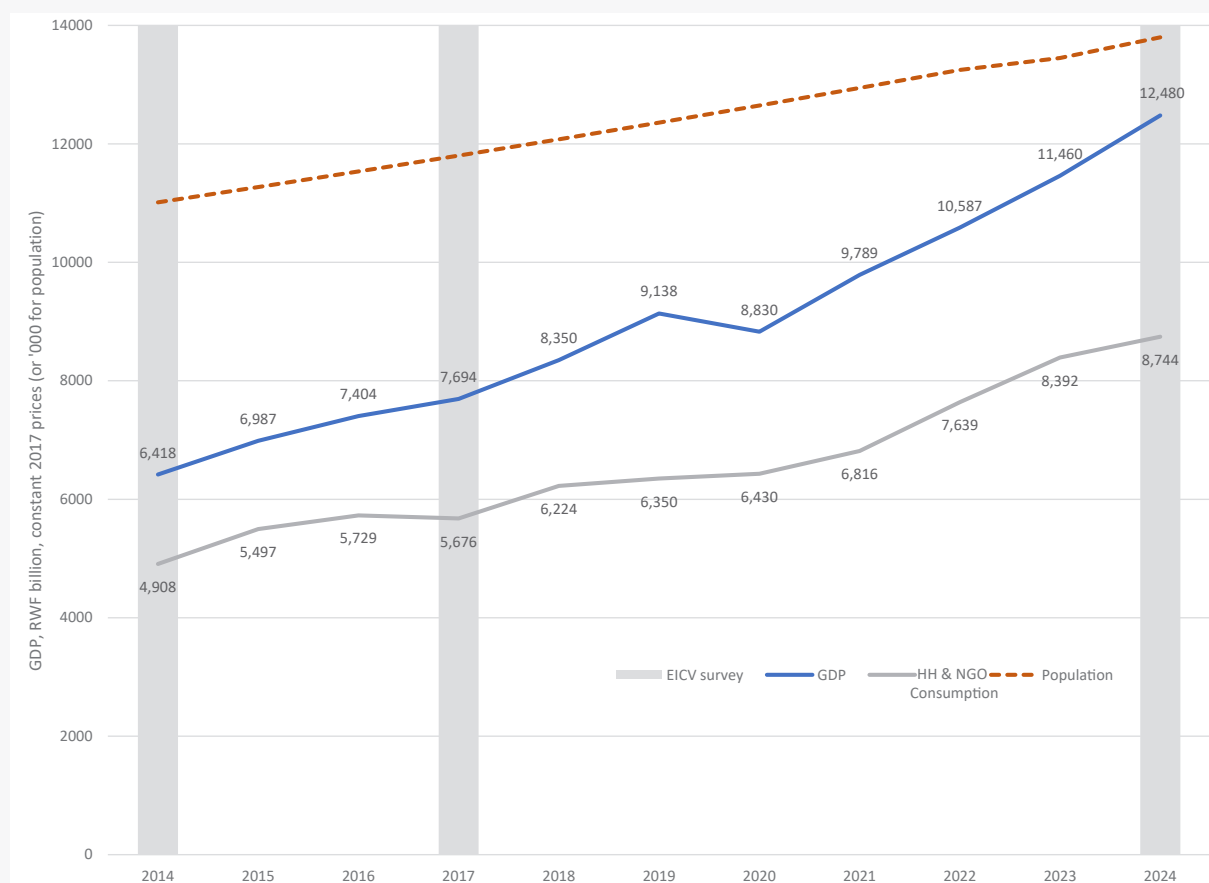
Source: NISR. Note: GDP for 2024 is estimated based on results through the third quarter.

Figure 2.2 also shows total GDP in 2017 prices, but in addition gives agricultural GDP, which grew by 3.9% annually between 2014 and 2023. Rwanda's poor are disproportionately dependent on agriculture, and so the growth in this sector – equivalent to 1.6% per person per year – is of particular relevance to understanding the drivers of poverty. The trends of GDP in industry and services are also shown in in Figure 2.2.

Figure 2.2. GDP Overall and for Agriculture, 2014-2024
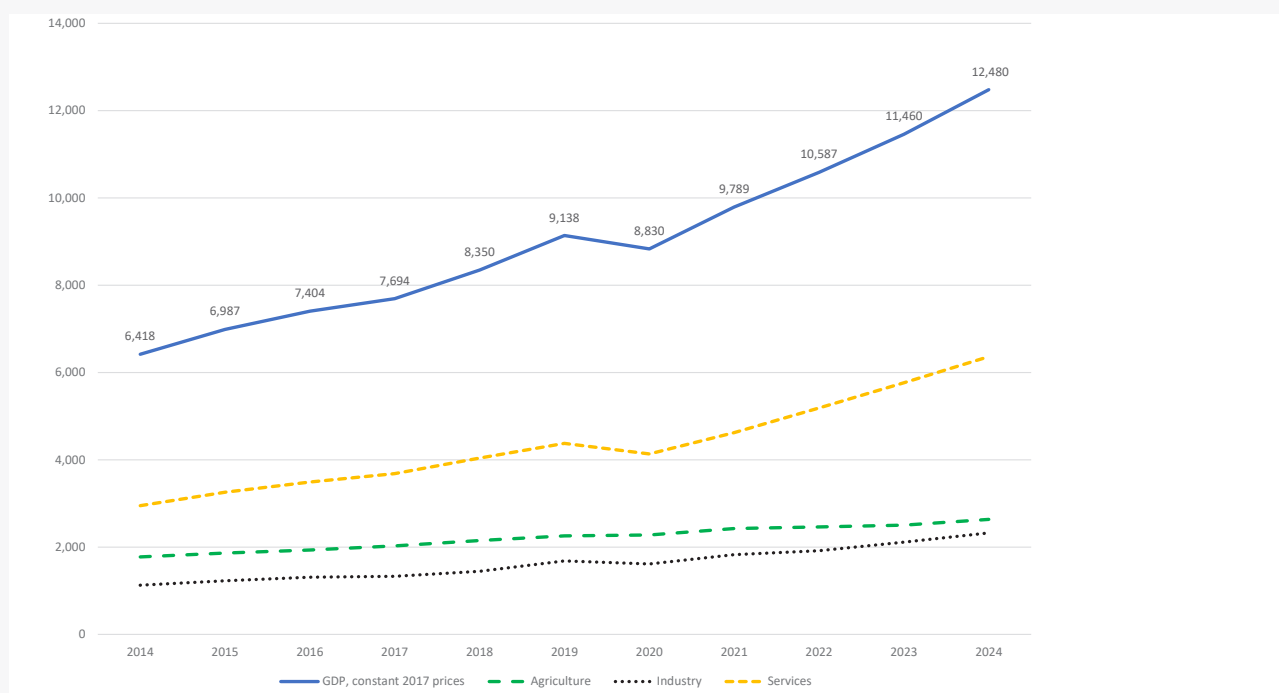
Source: NISR. Note: GDP for 2024 is estimated based on results through the third quarter.

The evolution of GDP **per capita** is shown in Figure 2.3, using two measures. The blue line shows GDP per capita in thousands of RWF in 2017 prices: in the decade from 2014 to 2024, the total increase was 53%, equivalent to 4.3% per year. To provide some international context, the upper line shows GDP per capita in US dollars in 2021 purchasing power parity prices: by this measure, GDP per capita rose from $2,104 in 2014 to $3,060 in 2023. Strong growth has resumed after the contraction during the COVID-19 pandemic in 2020.

Figure 2.3. GDP per capita in RWF and USD (PPP), 2014-2024
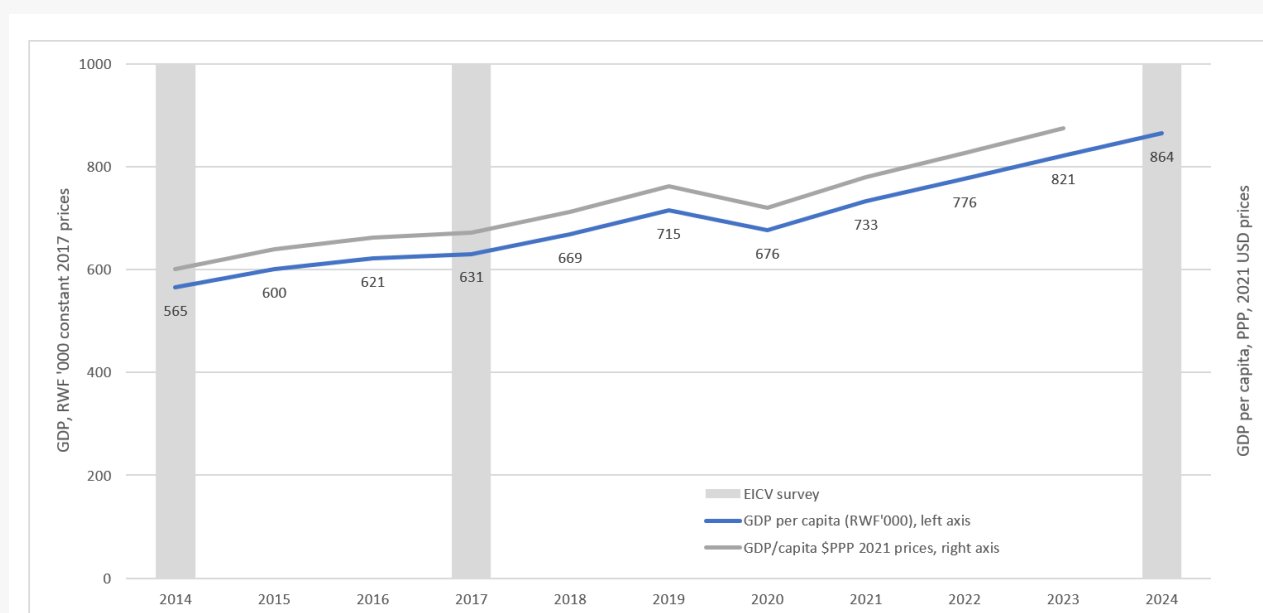
Source: NISR (for RWF) and World Bank (for PPP series). Note: GDP for 2024 is estimated based on results through the third quarter.

2.2   Demographic Dependency Ratio

The poverty rate might be expected to decrease if the demographic dependency ratio – defined as the proportion of old and young people to working-aged people (16-64 years old)) – were to fall. This is because a household's earnings will not need to be spread to as many people. There is clear evidence of a declining demographic dependency ratio in Figure 2.4: the dependency ratio fell from 80% in 2014 to 71% by 2024. This is entirely driven by a falling proportion of children to working-age adults (from 75% to 65%), offset only marginally by a rise in the proportion of old people to working-age adults (from 5% to 7%).

Figure 2.4. Demographic dependency rates, 2014-2024
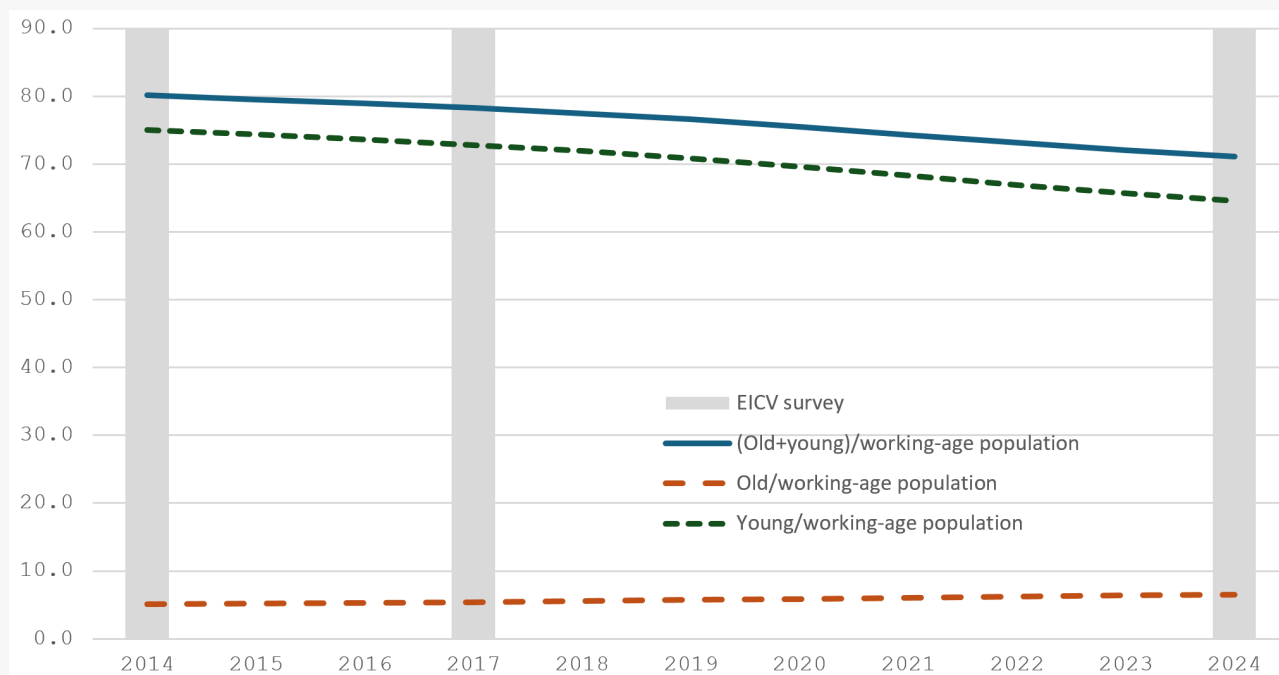
Source: NISR.

2.3   Employment and Unemployment

When more people are employed, poverty will usually be expected to fall, as this raises the number of earners relative to non-earners in a household, and thereby increases the ability to afford more consumption per adult equivalent. Figure 2.5 shows this in two ways: the upper line shows the percentage of those aged 16 and above who are employed. Although this proportion fell during the Covid-19 pandemic, it was clearly higher in 2024 than in 2017. An almost mirror image of this is the unemployment rate, which is now at its lowest level in a decade.

Figure 2.5. Employment and Unemployment rates, 2014-2024
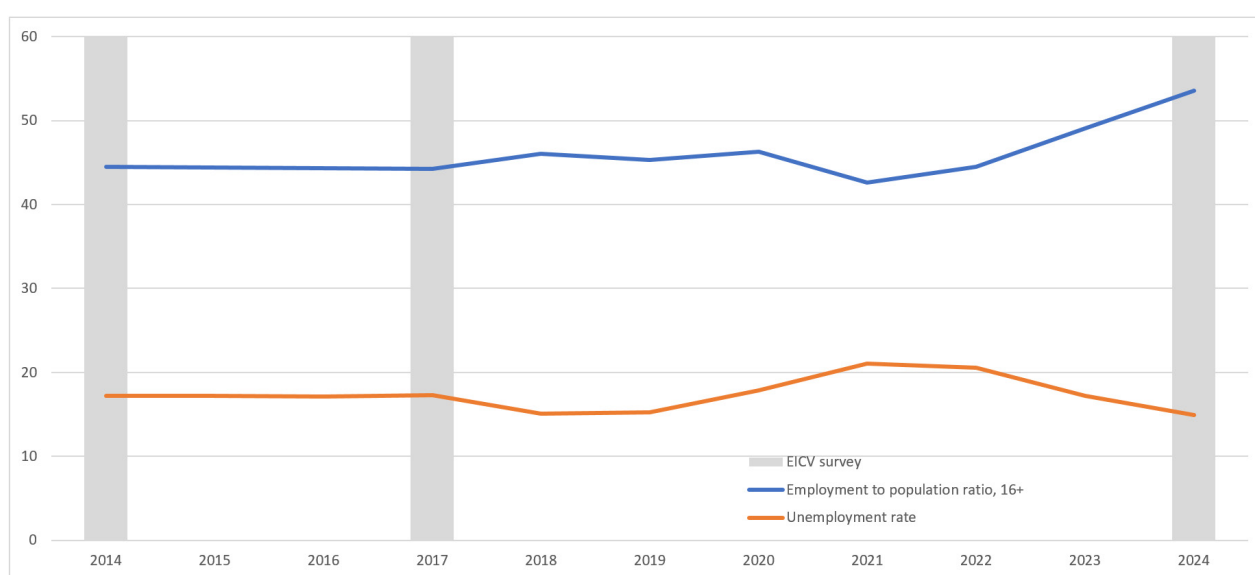
Sources: NISR for 2017-2024; ILO estimates reported by World Bank for 2014-2016.

2.4 Prices

The evolution of prices, and separately of food prices, is captured in Figure 2.6, which shows monthly CPI price indexes. If all prices and incomes were to rise at the same rate, inflation would have little effect on poverty. Of more importance is the relative price of food, which takes up a relatively large share of spending for poor households.

The vertical bars bracket the EICV surveys of 2013/14, 2016/17, and 2023/24. The rapid rise in the price index in 2023 reflects a period of substantial inflation, which substantially abated in 2024.

In 2017, during the EICV5 survey, food prices were relatively high compared to the previous period. The same effect was observed, even more strongly, in 2024 during the EICV7 survey. Relatively high food prices are helpful for farmers who are net sellers of food, but their direct effect would be to hurt anyone who is a net buyer of food, and this will include many poor people. The indirect effects of high food prices on poverty are less clear: if they enable farmers to hire more labourers, for instance, this may help some poor households, but effects such as these are difficult to measure.

Figure 2.6. Index of CPI Prices, and Food Prices, 2010-2024
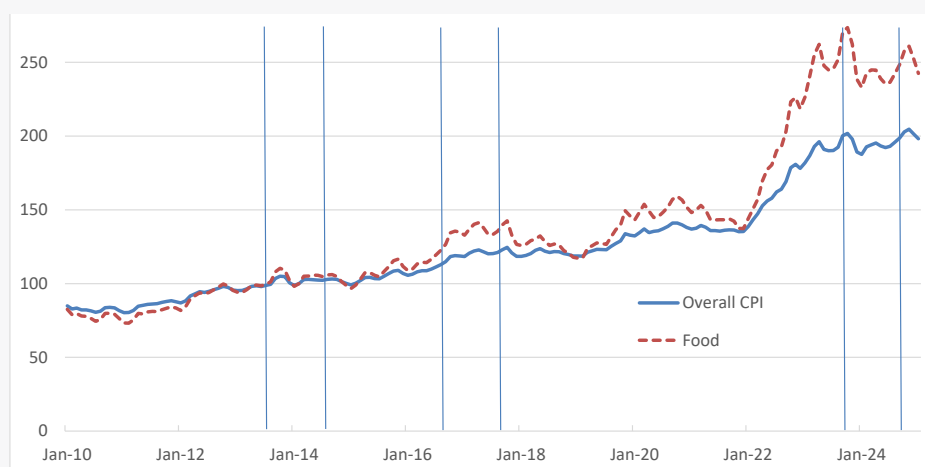
Source: NISR

Methodology

3.1 The survey

The data reported here come from the EICV7 survey, which was undertaken between October 2023 and October 2024, and used a questionnaire that covered a wide range of topics.

Enumerators visited each of 15,054 households on five occasions spaced two days apart, and entered the information directly onto tablet computers. The CAPI (Computer Assisted Personal Interviewing) software flagged unusual observations, and allowed the enumerators to verify, and if necessary correct, potentially suspect information. The data were also checked for accuracy at each subsequent level of processing.

The households were chosen using a stratified multi-stage sample design. In each of 27 of the country's 30 districts, 54 sample clusters were chosen, while in each of the remaining three districts (in Kigali City), 72 clusters were chosen. The clusters (villages or neighborhoods) within each district were chosen randomly, with probabilities in proportion to the number of households enumerated in the 2022 Rwanda Census. Within each cluster, 12 households were chosen randomly, of which 9 were interviewed (with the other three serving as alternates in the event of non-response). The overall response rate was 99.9%. Since some households in effect represent more households (in populous districts) than others (in districts with small populations), all computations based on the survey data need to use sampling weights.

Prior to EICV7, the last complete household survey was EICV5, undertaken in 2016/17. Data collection began on EICV6 in late 2019, but was stopped in early 2020 with the arrival of Covid19, and since the data were incomplete, no results about poverty were published from that survey.

The protocols for collecting data, and the nature and scope of the questions, were relatively similar from EICV1 (1999/2001) through EICV6. Meanwhile, best practice in poverty measurement has evolved – see, for instance, Mancini and Vecchi (2022) on the construction of a consumption aggregate, or the recommendations of the East African Community (EAC 2023) – so a number of important methodological changes were made for EICV7. Among the more important changes were:

- Fewer visits per household: 5 visits for everyone at two-day intervals, instead of 8 (in rural areas) or 11 (in urban areas) as done for EICV5;
  - This reduced the heavy time demands on respondents, and is more economical.
- Collecteed information on seven days of food consumption (instead of 14 or 30 days);
  - Simulations based on EICV5 showed that careful collection of information over seven days is as accurate as collecting over 14 or 30 days. Visits 2-4 asked about the details of food consumption in the previous day (visit 2) or since the previous visit (visits 3-5).
- Separate questions on food acquisition and consumption allows for a true measure of food consumption;
  - Previous EICV surveys asked about the amount of food bought or received ("acquisition"), whether or not it was consumed in the survey period. EICV7 measures the amount of food actually consumed, which is a more accurate reflection of the welfare measure of consumption.
- More-detailed questions on food consumed away from home, and on school meals, allow these to be included in the consumption aggregate;
  - School meals are an important source of nutrition, and we not included in past EICV surveys.
  - An expanded set of questions on food consumed away from home provided more complete information than in earlier EICV surveys. This is an increasingly important source of food intake.
- Additional questions to allow for the measurement of gifts and in-kind payments for non-food items;

- – The EICV7 survey asks in more detail about whether each consumption item was purchased, came from home-production, or was received as an in-kind payment or gift.
- A revised and more realistic method to compute the use value of durable goods;
  - – Durable goods are consumed over a long time period, and the annual value provided by durables is estimated based, in part, on depreciation rates. EICV7 uses data on the age and life expectancy of durable good to estimate depreciation rates while EICV5 applied depreciation rates of 10%, 20%, or 40% not based on the life expectation of the asset
- Deflation to the prices of January 2024 using household-level Paasche deflators, rather than the regional-level indexes used in EICV5;
  - – Regional-level price deflators apply a single price index to all households in a region, regardless of their pattern of spending. Household-level deflation properly takes into account the differing spending decisions made by each household.
- The adult equivalence scale has been redefined to allow for economies of scale in non-food consumption;
  - – Previous EICV analyses used an equivalence scale entirely based on caloric needs. The revied scale is based partly on caloric needs, and also on household size and demographic composition.
- The poverty line starts with a calorie threshold of 2,400 kcals/adult equivalent/day (instead of 2,500), and values it using the consumption pattern of households in the second quintile (rather than the bottom two quintiles).
  - – The 2,400 kcals threshold was built from first principles, recognizing the caloric need of based on the weight and activity levels of Rwandans. It also brings Rwanda's threshold more in line with current East African practice.

As a result of these changes, one cannot make *direct* comparisons of consumption and poverty between EICV7 and EICV5. However, direct comparisons of most non-food items are possible, and we are able to use modeling techniques to allow us to compare estimated consumption and poverty between 2017 and 2024. Further details of the modeling are given below in Section 5.

3.2 Measuring wellbeing

There are many dimensions of human wellbeing, but most fundamental of all is the ability to provide enough food, clothing, and shelter. The monetary approach to the measurement of poverty seeks to determine whether households have sufficient resources to provide for these basic needs.

A well-established measure of wellbeing is the value of consumption. Richer countries often measure wellbeing by looking at income, which is easier to measure when most households earn wages or salaries. In Rwanda, however, a significant proportion of households rely on self-employment or subsistence agriculture.

The EICV7 survey mainly collects information at the level of the household, but wellbeing is best expressed at the individual level, so the measure we use is **real consumption per adult equivalent.** For EICV7, this is

defined as household consumption in the national prices of January 2024 divided by the number of adult equivalents in the household.

For each household, total consumption is obtained by adding several categories of items. These include:

- Food consumed at home. For a long list of 148 items, households are asked how much they consumed in the two days since the previous visit by the enumerator (for visits 3-5), or during the previous day (for visit 2), and how much of this consumption came from purchases, own-production, or gifts and in-kind acquisitions.
- Food consumed away from home. This includes school lunches, as well as restaurant meals and snacks and beverages.
- Non-food items, purchased (or home-produced or received in-kind) over the past year, month, or week, using a list of 165 items.
- The use value of durable assets such as phones and bicycles.
- Spending on education.

- Spending on routine health-related items.
- Spending on housing, including rent paid (for renters) or estimated rent (for owners).

Not every household expenditure is included in the consumption aggregate. It does not include non-consumption expenditures, such as payments of taxes, purchases of business or farm inputs, or purchases of durable goods. Also excluded are exceptional expenses such as weddings and funerals, hospital stays, and other emergency medical expenses. These items are excluded because the goal is to measure a household's normal level of consumption, which could be distorted by including large and unusual items of spending. Discussion of the issues involved in measuring consumption may be found in Deaton and Zaidi (2002), with an updated version in Mancini and Vecchi (2022).

Adult equivalence

Households differ in size and composition, so total household consumption has to be adjusted to take these factors into account. Since 1982-83, Rwanda has used a **calorie-related scale,** which recognizes that household members of different ages and gender have different nutritional needs. However, that scale does not allow for economies of scale, which is the idea that the cost of providing for a household does not rise in proportion to its size.

For EICV7 we use a **hybrid scale**, which puts two-thirds of the weight on caloric needs, and applies economies of scale to the remaining third of spending. This gives

AE = (2/3)(Calorie-based equivalence scale) + (1/3)(Non-food-based equivalence scale)

These proportions were used because poor people in Rwanda (and elsewhere) devote about a two-thirds of their consumption to food.

The relative caloric needs for the calorie-based scale are shown in Table 3.1. The index is set to 1.00 for men aged 20-29. The numbers come from the relative caloric needs published by the East African Community (EAC 2023).

Table 3.1. Caloric Scale Used in Calculation of (Part of) Adult Equivalence

| | Calories | | | Calories | |
Age	Male	Female	Age	Male	Female
0	0.21	0.20	13	0.91	0.78
1	0.31	0.28	14	0.98	0.80
2	0.37	0.34	15	1.04	0.82
3	0.41	0.38	16	1.09	0.82
4	0.44	0.41	17	1.11	0.82
5	0.48	0.43	18	1.00	0.83
6	0.52	0.47	19	1.00	0.83
7	0.56	0.51	20-	1.00	0.83
8	0.60	0.56	30-	0.97	0.79
9	0.63	0.61	40-	0.97	0.79
10	0.70	0.65	50-	0.97	0.79
11	0.77	0.70	60-	0.80	0.71
12	0.83	0.74	70-	0.80	0.71

The non-food-based equivalence scale is given by

$$(A + 0.3 \times C)^{0.8}$$

where A is the number of adults in the household and C is the number of children aged 16 or younger. The coefficient 0.3 in this equation reflects the observation that children appear to cost only about 30% as much to house and clothe as adults. The 0.8 exponent is a measure of economies of scale: if it were 1, there would be no economies of scale in consumption. These numbers are fairly close to those suggested by Deaton and Zaidi (2002).

Deflating

Households were surveyed in different parts of Rwanda at different times of the year. They thus faced different prices, which vary over time and space. Before we can compare households, we need to value their consumption in a consistent set of prices.

The theory of economic welfare says that "utility", which is equivalent to wellbeing, may be measured by "real consumption", which may be approximated by

$$u^h \approx \frac{x^h}{P^h}$$

where is the nominal value of household consumption (i.e. measured using the prices households actually paid, as far as possible) and is a Paasche price index for each household, which may be written as

$$P^h = \left(\sum w_i^h \frac{p_i^0}{p_i^h} \right)^{-1}$$

Here, the are the shares in nominal total consumption on spending on good *i* for household *h*, and the prices and refer to the prices of each good *i* in the base period, and at the time and place where the household was interviewed, respectively. We use national prices in January 2024 as the reference prices.

The implementation of this procedure is described in detail in the EICV7 methodological note (EICV7 2025). The process was greatly helped by the availability of good quality "CPI prices". For the purpose of EICV7, since October 2023, NISR has collected data on prices of hundreds of items in markets and shops in all thirty districts to complement data collected by the CPI division, every month; prior to that, only CPI data was used.

3.3   The Poverty Line

A new poverty line was created from first principles, using a cost-of-basic-needs approach, which establishes a level of consumption that provides for basic nutritional requirements, as well as essential non-food needs such as shelter and clothing. A useful background reference is Ravallion (1998).

The first step is to determine how much food is needed for a minimally acceptable standard of living. Caloric needs vary by age, gender, and weight, and by how active the individual is. Using the best-available data for Rwanda, we arrived at a (rounded) **minimum daily requirement of 2,400 kcals per day**. Further details may be found in the Methodological Note that accompanies this report.

This threshold is in line with practice in the East African region: for instance, Kenya uses a cutoff of 2,250 kcals per adult equivalent (KNBS 2024, p.viii), and Tanzania and Ethiopia use a threshold of 2,200 kcals (World Bank 2019, p.6; and World Bank 2020, p.15). Uganda uses a threshold of 3,000 kcals and Zambia uses a threshold of 2,754 kcal. The analysis based on earlier EICVs used a threshold of 2,500 kcals.

For the poverty line, we need to establish the cost of acquiring 2,400 kcals per day. This will depend on dietary choice: a well-off family that can afford a richer diet can easily spend twice as much per calorie consumed as a poor household.

Our approach is to use the dietary composition of households in the second quintile – i.e. those whose real consumption per adult equivalent is between the 20th and 40th percentiles. We choose this group because our prior expectation is that the poverty rate is likely to be somewhere within this range, and we want to mimic the diet of those who are near the poverty line. The expectation was confirmed at the end of the process.

For most food items we have the quantity consumed per adult equivalent in the second quintile, the base-period price, and the caloric content per kilo or litre. This gives us the cost of buying 1,933 kcals per day; the number would be higher if we had complete price and calorie-content information on all items of food consumed at home. We then add the calories from school meals,and consumed outside the home. This gives us the cost of 2,169 kcals. To find the cost of the threshold of 2,400 kcals, we gross up the cost of food consumed at home, to compensate for the missing information on home consumption.

The cost of this basic diet per year gives us a food poverty line of RWF 356,432 per adult equivalent per year in January 2024 prices. This is also the poverty line used to measure extreme poverty.

To find the total poverty line, we identify those households – there are 2,083 of them – whose value of food consumption is within 10% of the food poverty line. The median proportion of food to total consumption for this group is 63.6%, and so we gross up the food poverty line using this proportion, to give a **total poverty line of RWF 560,127 per adult equivalent per year in January 2024 prices.**

Given information on consumption per adult equivalent, and a poverty line, the simplest measure of poverty is the **headcount poverty rate**, which is the percentage of people living in households whose consumption per adult equivalent is below the poverty line.

The headcount poverty rate does not take into account the extent to which people fall below the poverty line, and so it is fairly common also to report the **poverty gap index**, which measures, for poor households, the average amount by which consumption falls short of the poverty line, as a fraction of the poverty line. It may be thought of as the average amount that would be needed, as a proportion of the poverty line, to bring each and every poor just out of poverty.

Definition of urban areas

The definition of urban areas used in EICV5 was based on the 2012 Census, and by this definition, 17.8% of the population was urban in 2017, and 18.0% in 2024. During the 2022 Census, the definition of urban areas was expanded to include newly-urbanized areas, and using this new standard, 28.4% of the population was urban in 2024. Unless noted otherwise, in this report we use the 2012 definition of urban when referring to EICV5 data, and the 2022 definition when referring to EICV7 data.

Surveying for EICV5 ran from October 2016 through October 2017, and for EICV7 it went from October 2023 through October 2024. Since the bulk of the survey results refer to 2017 and 2024 respectively, for convenience we simply refer to the data as being from 2017 or 2024.
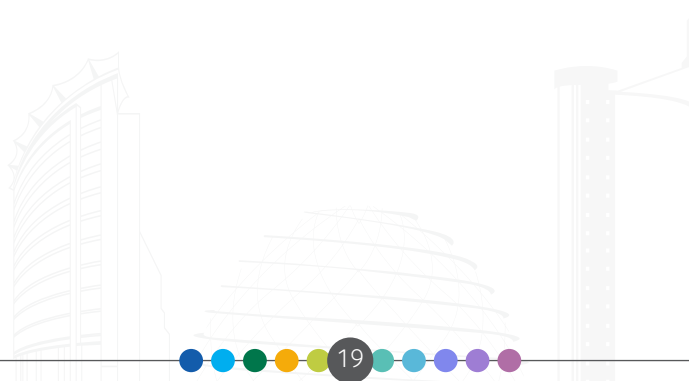
Trends in Socio-Economic Indicators

Before looking at trends in consumption and poverty — which require a modeling approach — it is useful to look at the evolution of some of the socio-economic indicators that are typically associated with poverty, including education, sanitation, health, housing, energy use, and assets. A more detailed discussion can be found in the companion thematic reports. We do not try to aggregate these measures into a single index in this report, but the thematic report on multidimensional poverty addresses that challenge.

The first two columns in Table 4.1 show the literacy rate for young adults (aged 15-24). **Literacy** is defined as being able to read and to write a simple note. There was a slight improvement in literacy between 2017 (EICV5) and 2024 (EICV7), from 86.7% to 87.7%, but about one in seven young adults in rural areas remain functionally illiterate. Poor people are less likely to be literate: the literacy rate is 80% for those in the poorest quintile, but 94% for those in the top quintile of consumption per adult equivalent.

The net enrollment rate gives the proportion of children in the appropriate age group who are attending the appropriate schooling — i.e. the proportion of those aged 6-11 who are at primary school, and of those aged 12-17 who are at secondary school. Between 2017 and 2024, net enrollment rates rose sharply: primary enrollment is now almost universal, and net secondary enrollment increase by 10 percentage point. While the improvement has been seen in all areas and social groups, access to secondary school remains far lower for households in the bottom quintile (where the net enrollment rate is 20%) than in the top quintile (with a net enrollment rate of 55%).

Table 4.1. Educational Attainment by Region, Area and Quintiles

	Literacy rate, ages 15-24		Net Attendance Rate (Primary)		Net Attendance Rate (Secondary)	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
Rwanda	86.5	87.7	87.6	92.8	23.8	33.7
Province						
City of Kigali	91.6	94.1	88.6	95.2	40.4	45.9
Southern	85.6	85.9	88.4	92	20.5	31.8
Western	84.4	87.7	88.2	92.5	22.2	34.3
Northern	87.7	89.6	91.2	96.1	25.1	32.5
Eastern	84.9	84.7	84.1	90.7	19.3	30.5
Residence area						
Urban	92	92.3	87.3	95.2	40.3	45.1
Rural	84.9	85.7	87.7	92	20.1	29.7
Quintile						
Lower	77.2	79.5	80.7	87.6	9.1	19.9
Mid-lower	83.4	85.6	87.8	92.6	15.9	27.7
Mid	86.8	88.3	89.7	93.8	22.2	33.5
Mid-upper	88.7	91.1	91.5	95.2	29.0	41.2
Upper	92.5	94.2	92.8	96.8	43.5	55

Sources: EICV5 and EICV7. Note: Quintiles refer to real consumption per adult equivalent.

Access to **clean and convenient water** is an important component of wellbeing. Table 4.2 shows that 90% of households have access to an improved source of drinking water, up slightly from 87% in 2017. Unimproved water comes from an unprotected spring or well, or directly from a river or lake, while all other sources of water are considered to be "improved". Just 16% of households get water that is piped to their home, almost always into their yard or compound rather than into the dwelling itself. The proportion that get piped water at home is rising, with almost an additional one percent of households getting water piped to their home every year.

Improved sanitation consists of a flush toilet, a ventilated improved pit latrine, or a pit latrine with a constructed floor slab

(the commonest solution). In 2024, 94% of households benefitted from improved sanitation, compared to 86% in 2017. The remaining households used pit latrines without a slab, or had no toilet: while only 2% of urban households were in this situation, one in nine of those in the bottom quintile do not have improved sanitation, as Table 4.2 shows.

Table 4.2. Water and Sanitation by Province, Area, and Quintile

	Improved drinking water		Water piped to home		Improved sanitation	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
National	87.5	89.7	9.4	15.7	86.2	94.3
Province						
City of Kigali	96.2	97.9	34.0	45.7	94.5	99.4
Southern	88.0	90.8	4.4	8.9	74.6	90.8
Western	86.5	84.8	5.6	13.0	88.1	94.5
Northern	87.5	91.0	5.7	11.2	86.5	95.1
Eastern	82.9	87.0	4.7	9.4	90.0	93.9
Residence area						
Urban	96.1	97.1	39.2	41.5	93.6	98.3
Rural	85.5	86.6	2.3	5.0	84.4	92.7
Quintile						
Lower	82.0	83.9	0.2	1.6	76.3	88.6
Mid-lower	84.7	87.3	1.1	4.5	81.0	92.2
Mid	87.3	88.2	1.5	6.4	85.9	94.1
Mid-upper	87.5	90.8	4.8	12.8	88.5	96.1
Upper	93.2	96.0	30.8	45.9	94.2	98.8

Sources: EICV5 and EICV7. Note: Quintiles refer to real consumption per adult equivalent.

Good health is an essential component of wellbeing, and is aided by easy access to **health services**. Table 4.3 shows that the average time it would take to get to the nearest health facility fell from 48 minutes in 2017 to 32 minutes in 2024, a reduction of 16 minutes. The biggest improvement was in rural areas, and for households in the bottom two quintiles.

Medical insurance coverage has also expanded, from covering 75% of households in 2017 to 87% in 2024. Coverage is notably high in the Northern Province (92%) and among households in the top quintile (94%). The improvement in coverage was greatest among households in the poorest quintile, but is still comparative low in that group at 77%.

Access and insurance contribute to the use of medical services, but a direct measure of usage is also useful. The last two columns in Table 4.3 show the proportion of households who got care when they were ill. This is a self-reported measure, so the severity of the illness is not known, but in 2024, 71% of individuals who experienced a sickness reported getting care, up from 57% in 2017. Better-off households are still more likely to get care, in the event of illness, than poorer households, but the gap in usage between rich and poor narrowed between 2017 and 2024.

Table 4.3. Health Services and Care by Province, Area, and Quintile

	Time (minutes) to health Facility		Covered by any medical insurance		Got care, if ill (%)	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
National	48.2	31.7	73.9	85.3	56.7	71.0
Province						
City of Kigali	31.9	25.9	76.8	84.2	59.2	69.6
Southern	54	30.8	68.9	84.8	55.6	71.8
Western	49.6	33.5	72.2	82.9	49.1	69.0
Northern	41.1	27.6	83.8	91.7	58.1	74.1
Eastern	54.1	36.3	72.5	84.5	62.8	70.8
Residence area						
Urban	32.2	23.8	79.5	85.1	59.7	71.0

	Time (minutes) to health Facility		Covered by any medical insurance		Got care, if ill (%)	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
Rural	51.6	34.5	72.7	85.4	56.4	71.0
Quintile						
Lower	53	35.5	60.7	76	47.5	64.5
Mid-Lower	52.1	33.1	67	81.6	52.7	68.2
Mid	50	32.6	73.6	86	56.3	71.9
Mid-upper	47.6	31.6	80.2	89.5	62.6	72.7
Upper	38.4	26.6	87.3	93.4	66.1	77.2

In 2024, seventy two percent of households had access to electricity, either from the national grid (50%) or from solar panels (22%, mainly from a standalone solar system). This represents more than a doubling of access to electricity when compared with 2017, as Table 4.4 shows. While household access to electricity in urban areas rose from 76% to 88%, the increase in rural areas was more dramatic, rising from 24% to 65%. Now, more than half (53%) of those in the lowest quintile have access to electricity, up from just 9% in 2017.

Most households mainly use electricity for lighting and for charging mobile phones. About three-quarters of households cook with firewood (63%) or straw/sticks (12%), with just 24% using charcoal (19%) or another improved method (mainly bottled gas).

Rwanda is the most densely populated country in continental Africa, and so it may not be surprising that 96% of households live within 20 minutes of an all-weather road, up from 93% in 2017. Households in the relatively mountainous Western Province are less likely to be near an all-weather road (89%) than any other region, as Table 4.4 makes clear.

Table 4.4. Energy Sources (for Lighting, and Cooking), and Remoteness, by Province, Area, and Quintile

	Electricity from grid or solar panels		Charcoal or better		Road < 20 minutes away	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
National	34.4	72.0	18.6	24.3	93.4	96.0
Province						
City of Kigali	79.3	91.7	74.4	82.9	98.8	99.6
Southern	22.7	63.7	6.8	10.4	93.8	97.6
Western	31.7	71.3	12.4	19.2	86.6	88.7
Northern	22.8	67.3	7.6	12.2	88.1	93.9
Eastern	27.7	71.3	7.9	14.5	98.7	99.5
Residence area						
Urban	76.2	88.1	70.4	67.4	97.8	99.5
Rural	24.5	65.3	6.2	6.6	92.3	94.6
Quintile						
Lower	9.0	53.4	1.3	5.9	90.9	93.4
Mid-lower	16.4	62.4	3.8	8.5	90.4	94.9
Mid	24.5	68.2	8.0	12.8	92.2	95.6
Mid-upper	36.5	76.5	14.0	23.7	94.1	96.4
Upper	68.6	92.3	51.5	61.4	97.1	98.9

Sources: EICV5 and EICV7. Note: Quintiles refer to real consumption per adult equivalent.

A household's wellbeing depends in part on the quality of their dwelling and the neighborhood in which they live. Table 4.5 shows that the proportion of households living under a corrugated iron roof rose from 67% in 2017 to 76% in 2024, an indicator of improved housing. In 2024, 40% of households lived in a dwelling with a modern floor, typically concrete or tiled: the remaining dwellings generally had floors of beaten earth. About three-quarters or more of households in Kigali, or from the top quintile, had a modern floor, while the proportion was below 30% in the Northern and Western provinces, in rural areas, and in the three lowest quintiles.

The proportion of households living in a planned rural settlement (umudugudu) rose from 59% in 2017 to 68% by 2024. Most of the remaining households lived in dispersed settlements (16%), in unplanned or informal areas (10%), or in a planned urban area (6%).

Table 4.5. Quality of Dwelling, by Province, Area, and Quintile

	Corrugated iron roof		Modern floor		Umudugudu	
	EICV5	EICV7	EICV5	EICV7	EICV5	EICV7
National	67.3	75.8	27.4	39.2	58.9	67.9
Province						
City of Kigali	99.1	98.6	73.2	84.2	4.1	27.8
Southern	27.6	41.5	20.4	30.1	56.7	71.7
Western	51.4	61.1	16.1	27.7	59.5	71.4
Northern	67.8	83.4	17.4	25.9	68.8	68.8
Eastern	98.0	98.9	21.9	38.0	87.4	83.8
Residence area						
Urban	91.6	94.5	72.1	73.9	24.8	51.1
Rural	61.5	68.1	16.8	24.8	67.0	74.8
Quintile						
Lower	56.5	65.2	4.7	12.8	66.8	69.8
Mid-lower	57.4	69.5	9.4	20.1	64.1	71.4
Mid	61.1	71.3	14.8	27.6	64.1	70.8
Mid-upper	69.1	77.7	26.5	43.6	61.8	69.0
Upper	84.1	90.7	64.5	79.6	43.9	60.0

Sources: EICV5 and EICV7. Note: Quintiles refer to real consumption per adult equivalent.

Durable assets provide services, and thus contribute to wellbeing. Table 4.6 shows that in 2024, 88% of households had at least one member with a cellphone, 14% owned a TV, and 4% owned a computer. In all cases, these represent significant increases compared to 2017.

Most cellphones are relatively basic, and just 36% of households had someone who owned a smartphone, although this figure was 64% in urban areas and 78% for those in the top quintile. Almost two-fifths of households (39%) have a TV in Kigali, and the proportion exceeds 30% in urban areas, and the top quintile, but just 2% of households in the bottom quintile have a TV.

Just 13% of households owned a computer in Kigali and 16% in the top quintile, but the proportion is below 1% in rural areas, and below 0.1% for those in the poorest quintile. While ownership of computers is rising at a rapid rate (by more than 8% annually), it is starting from a very low base.

Table 4.6. Ownership of Durable Goods by Province, Area, and Quintile

	Household has a:					Own a computer	
	Cellphone		Smartphone	Own a TV			
	EICV5	EICV7	EICV7	EICV5	EICV7	EICV5	EICV7
Rwanda	66.9	84.6	34.3	10.4	14.4	3.3	5.0
Province							
City of Kigali	88.0	96.3	69.2	36.0	39.1	12.8	16.1
Southern	58.3	76.9	22.7	5.2	8.3	1.7	3.1
Western	64.1	85.5	30.5	6.5	10.3	1.2	2.8
Northern	64.5	84.6	28.7	5.7	8.9	1.9	3.4
Eastern	66.1	83.7	30.8	5.8	12.0	1.6	2.9
Residence area							
Urban	88.6	94.1	61.9	35.0	32.7	13.1	13.5
Rural	61.7	80.6	22.9	4.5	6.8	0.9	1.5
Quintile							
Lower	44.1	74.1	11.9	0.3	2.0	0.0	0.0
Mid-lower	55.4	81.0	17.6	1.4	4.8	0.1	0.3
Mid	64.0	82.8	24.3	2.0	5.9	0.2	0.6
Mid-upper	72.9	85.9	36.1	7.0	13.3	0.7	1.9
Upper	86.5	95.2	71.2	31.9	39.7	12.0	19.1

Sources: EICV5 and EICV7. Note: Quintiles refer to real consumption per adult equivalent.

Level and Trends in Poverty

The key information on poverty levels and trends is set out in Table 5.1. The first column of figures shows that the **headcount poverty rate in 2024 was 27.4%,** using the updated methodology for data collection and processing set out in Section 3.

Table 5.1. Headcount Poverty Rate in 2024 (actual) and 2017 (modelled) by area and province

	Total Poverty			Extreme Poverty		
	EICV7 actual	EICV5 predicted	Change	EICV7 actual	EICV5 predicted	Change
	2024	2017	2017-24	2024	2017	2017-24
	% of individuals who are poor		% point change	% of individuals who are extremely poor		% point change
Rwanda	27.4	39.8	-12.4	5.4	11.3	-5.9
95% confidence interval	26.4-28.4	37.7-41.4		4.9-6.0	10.3-12.4	
Province						
Kigali City	9.1	14.3	-5.3	1.1	2.5	-1.5
CI:	7.0-11.2	9.2-16.2		0.3-1.9	0.7-4.2	
South	34.7	47.6	-12.9	7.4	15.3	-7.9
CI:	32.7-36.7	44.8-51.2		6.2-8.6	13.3-17.7	
West	37.4	51.7	-14.3	9.0	17.3	-8.3
CI:	35.0-39.8	48.9-55.0		7.5-10.5	14.2-19.5	
North	20.2	33.0	-12.8	3.2	8.1	-4.9
CI:	18.1-22.3	31.3-38.7		2.2-4.3	6.3-9.8	
East	26.8	39.2	-12.4	4.5	9.7	9.0
CI:	24.7-28.8	34.5-40.4		3.6-5.3	7.8-10.9	
Area of residence						
Urban	16.7	18.9	-6.2	3.1	6.0	-2.9
CI	14.8-18.6	15.4-22.4		2.2-3.9	4.3-8.1	
Rural	31.6	44.3	-13.7	6.4	12.5	-6.2
CI	30.4-32.8	42.1-46.0		5.7-7.0	11.3-13.7	

Predictions for 2017 are based on an OLS regression model of the log of consumption/ae p.a. in January 2024 prices, with multiple imputation. Adjusted prediction applies change based on EICV7 and EICV5 predictions to the actual EICV baseline. The poverty line for total poverty is RWF 560,127 per adult equivalent per year; for extreme poverty, it is the food poverty line of RWF 356,432. The areas defined as urban and rural changed between EICV5 and EICV7, so those poverty rates are not directly comparable. CI refers to 95% confidence interval. The confidence intervals for 2017 are model-dependent.

Because the data are based on a sample of 15,054 households, and a different random sample would likely yield slightly different results, it is more accurate to say that **we are 95% confident that the true poverty rate is between 26.4% and 28.4%.**

The poverty rate was almost twice as high in rural areas (32%) as in urban areas (17%). While the headcount poverty was 9% in Kigali city, it was relatively high in the South and West.

Because of the many methodological and other improvements made in EICV7, it is not appropriate to compare the poverty rates of EICV7 *directly* with those computed for EICV5. Yet we are keenly interested in understanding what has happened to poverty over time.

The solution is to use the EICV7 data to create a model that predicts consumption, and then to apply this model to the EICV5 data to predict what consumption would have been in 2017 if the methodology used for the EICV7 survey had been applied in 2017. By comparing these predictions, we can calculate the poverty rate in 2017 using predicted consumption, and compare

it to the estimated poverty in 2024.

These changes are given in the third column of Table 5.1, and show a **reduction in the poverty rate of 12.4 percentage points over the seven-year period between 2017 and 2024**. Our modelling techniques indicate that the poverty rate would have been 39.8% in 2017 (under the EICV7 methodology), or at least within the confidence interval of 34.5% to 40.4% (conditional on the model being correct).

Total poverty compares consumption per adult equivalent to the total poverty line of RWF 560,127 per adult equivalent per year. **Extreme poverty** uses the food poverty line – i.e. the cost of acquiring 2,400 kcals, or RWF 356,432 – as the reference point. In 2024, 5.4% of the population was in extreme poverty, down from a predicted 11.3% in 2017.

In Table 5.2 we compare the headcount poverty rate (top panel) with the poverty gap (bottom panel). The headcount measure shows the proportion of people who are poor, but does not distinguish between those who are very poor and those who are barely poor. The poverty gap measure provides a better measure of the depth of poverty: it finds the proportion by which each poor person falls short of the poverty line, and then averages this over the whole population. For 2024, this measure is 6.1%. One way to interpret this is to note that if we could mobilize the equivalent of 6.1% of the poverty line for everyone, and give to each and every poor household the exact amount that is needed to bring its consumption to be equal to the poverty line. As a result of these transfers, poverty would be eliminated.

While the headcount poverty rate fell by 31%, the poverty gap rate fell by 42% between 2017 and 2024, as the figures in the last column of Table 5.2 show. This implies that not only did the proportion of poor people fall, but the depth of poverty of the poor fell even faster. This is consistent with the relatively rapid fall in the extreme poverty rate that was noted above.

Table 5.2. Headcount and Poverty Gap Measures, 2017 and 2024

| | EICV7 actual | EICV5 predicted adj. | Change | |
| | 2024 | 2017 | 2017 to 2024 | |
	% of individuals who are poor		% point change	% change
Area of residence				
Urban	12.7	18.9	-6.2	-33
Rural	30.6	44.3	-13.7	-31
Rwanda	27.4	39.8	-12.4	-31
% poverty gap				
Urban	2.92	5.14	-2.22	-43
Rural	6.75	11.57	-4.82	-42
Rwanda	6.06	10.43	-4.36	-42

Source: EICV7 and EICV5. Notes: Predictions for 2017 are based on an OLS regression model of the log of consumption/ae p.a. in January 2024 prices, with multiple imputation. Adjusted prediction applies change based on EICV7 and EICV5 predictions to the actual EICV baseline. Urban and rural are defined using the 2012 definitions.

The official poverty rates for the past quarter-century are summarized in Figure 5.1. The blue columns show the poverty rates from prior EICV surveys, and are based on the methodology used at the time. The final column shows the poverty rate of 27.4% for 2024, based on the updated methodology, which will continue to be used in forthcoming EICV surveys. The penultimate column is an estimate, based on our multiple-imputation regression model, of what the poverty rate would have been in 2017 if the updated methodology had been applied at that time.
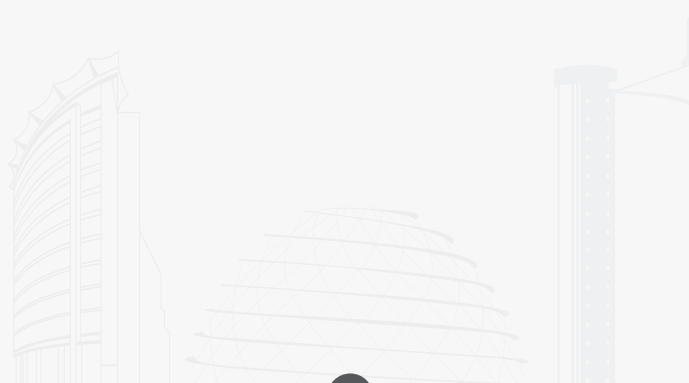
Figure 5.1. Poverty Rates, 2000/01-2016/17 (Old Series), 2016/17-2023/24 (New Series)
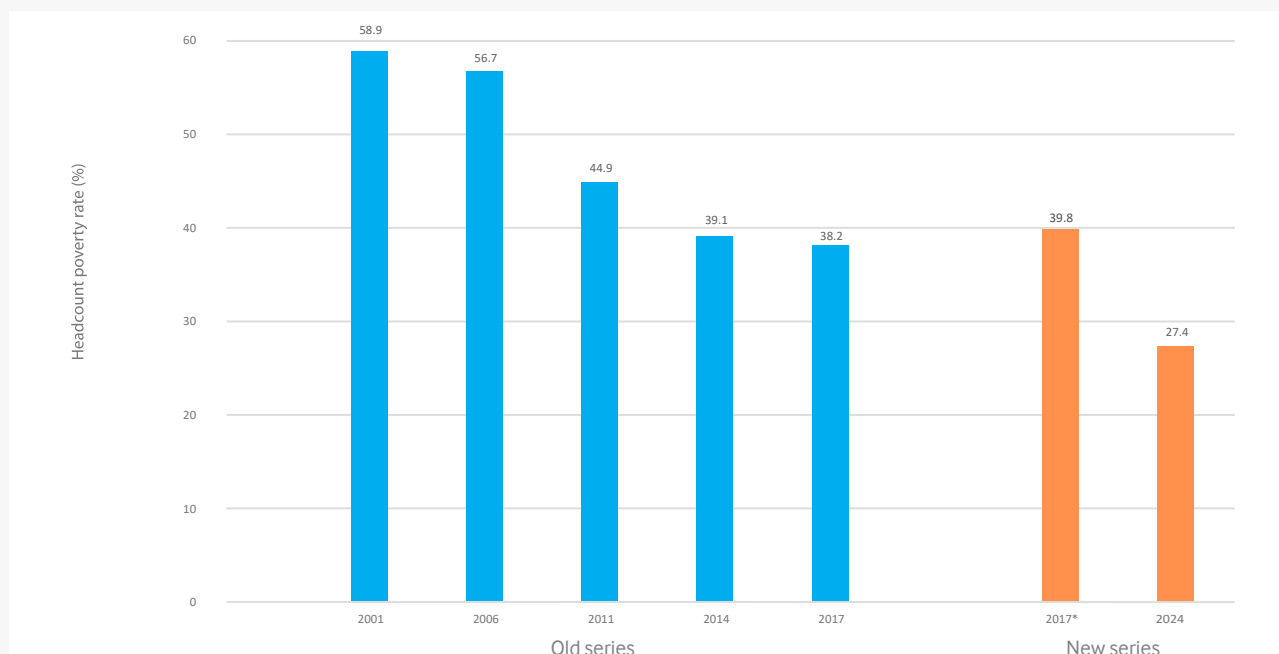
*Sources: EICV1-EICV5, and EICV7. Notes: * New Series Estimate for 2016/17 are based on a multiple-imputation regression model*

Modeling the change in poverty

Although many changes were made in coverage, collection protocols, poverty line, and deflation techniques in EICV7, many of the variables were measured in exactly the same way. This included most of the demographic variables, the socio-economic indicators (such as asset ownership and the quality of the dwelling), and spending on non-food consumption items.

The existence of these common variables allow us to create a model that predicts consumption or poverty based on the EICV7 data, and to then apply it to the EICV5 common variables to obtain predictions for 2017.

Our preferred approach was to start by using the EICV7 data to estimate a linear Ordinary Least Squares (OLS) equation (with multiple imputation) where the outcome (i.e. left-hand) variable is the log of consumption per adult equivalent. The right-hand variables include measures related to:

- The age, gender, education and marital status of the household head;
- The size of the household, and the proportions of members who are young, teenagers, adults, employed, and disabled;
- The district of the household, and whether it is in an urban or rural area;
- Several variables related to the quality of the house itself, including its size, and the materials of which it is constructed;
- The nature of the utilities such as water, sanitation, and electricity, to which the household has access;
- The value of the durable assets owned by the household, including the number of animal (cattle, sheep, etc.) that it owns;
- The log of expenditure on non-food items.

Care was taken to include only items that can be measured in the same way with EICV5 and EICV7 data, that were correlated with poverty, and that were likely to have a stable relationship with poverty over time. Monetary values were expressed in the prices of January 2024; the EICV5 prices were deflated to January 2024 using the non-food price component of the consumer price index.

Separate regressions were estimated for urban and for rural data (using the 2012 definitions of urban/rural). The basic regressions using EICV7 data fits well, with adjusted R^2 values of 0.89 (urban) and 0.68 (rural). The multiple imputation technique then allows us to get projected values of the log of real consumption per adult equivalent for EICV7, and for EICV5, with appropriately wide distributions. Figure 5.2 graphs the distribution of the log of consumption per adult equivalent (solid

curve), along with the modelled predicted distribution (dashed curve), for 2024. The two curves are close, which suggests that the model is sound.

Figure 5.2. Model Performance Test Using EICV7 data
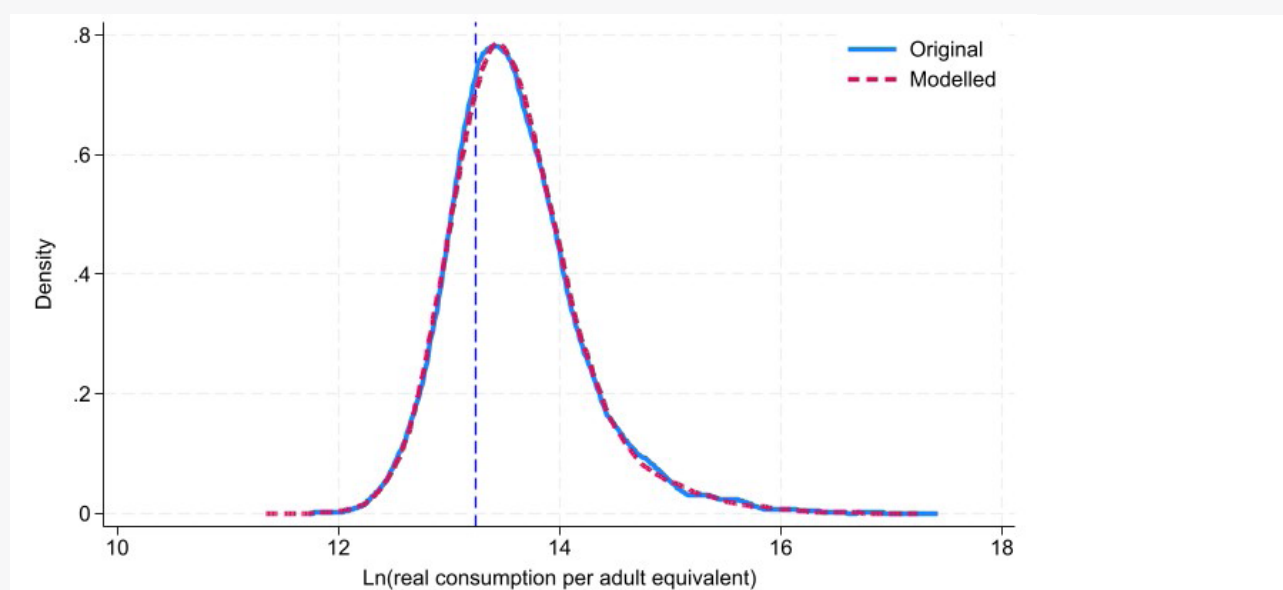
The predicted values of consumption may then be compared to the EICV7 poverty line to get predicted poverty rates, and these may be disaggregated by dimensions such as regions, district, and so on. **The changes in poverty rates are based on comparing the predicted consumption levels of EICV5 and EICV7**, and these modeled trends serve as the basis for the analysis throughout this report. An advantage of this method is that it allows one to computer confidence intervals, and so determine the precision of the predictions.

It is also possible to model the change in poverty more directly. A **logit or probit model** uses the same right-hand variables as indicated above, but the outcome variable is set to 1 if the household is poor and to 0 otherwise. Both logit and probit models show poverty trends that are close to those found using the multiple-imputation regression method.

We also modeled the poverty rate directly using **random forests**, a popular machine-learning technique that uses the data to build "trees" that classify and sub-classify the data to maximize the ability to predict the outcome. The national results are also in line with those of the other models.. The main drawback of these methods is that they do not generally allow for a clear determination of the precision of the predictions, which makes it hard to judge the quality of the predictions of the poverty rate in 2017. A more-detailed discussion of the modeling techniques and results is given in the EICV7 Methodological Note.

How robust are estimates of changes in poverty?

The reduction in the poverty rate of about 10-12 percentage points between 2017 and 2024 is based on modeling, and so particular attention is needed to assess how robust this finding is.

As noted above, the 95% confidence interval for the 2024 headcount poverty rate goes from 26.4% to 28.4%. The multiple-imputation method indicates that given a poverty rate of 27.4% in 2024, the confidence interval for the poverty rate in 2017 is about 37.7-41.4% (given our choice of model). By any measure, the evidence points to a substantial reduction in the headcount poverty rate between 2017 and 2024.

The reduction in poverty is not sensitive to the choice of poverty line. A good way to see this is by graphing poverty incidence curves for 2017 and 2024, which for comparability need to be based on modelled results. A poverty incidence curve sorts all individuals from poorest to richest (using real consumption per adult equivalent in January 2024 prices) on the horizontal axis, and the cumulative share of those individuals in total consumption on the vertical axis. In Figure 5.2, the EICV7 poverty line of RWF 560,127 per adult equivalent per year is shown as a vertical line, and the red and blue lines are the modelled poverty

incidence curves for EICV5 and EICV7 respectively.

The poverty rate may be read off the graph at the point where the poverty line meets the poverty incidence curve. At the EICV7 poverty line we can see that the EICV7 estimated poverty rate is about 27% and the EICV5 rate is about 38%.

Now suppose that the poverty line were 10% higher or lower than the line that was actually used. It is clear from the Figure 5.3 that we would still find a substantial reduction in the poverty rate between 2017 and 2024. Put another way, the reduction in poverty is robust to the choice of poverty line.

Figure 5.3. Poverty Incidence curves for 2017 (red line) and 2024 (blue line)
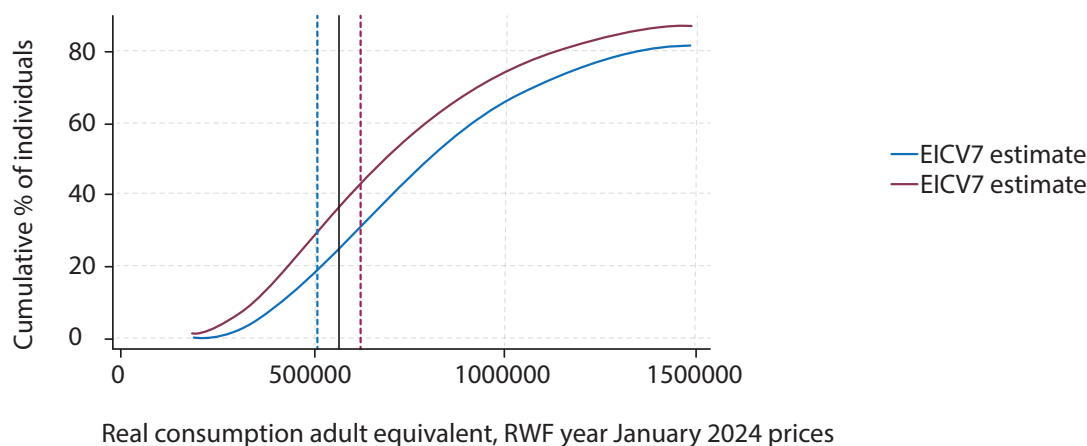
Source: EICV7. Real consumption is in the prices of January 2024.

Table 5.3 shows the median real consumption per adult equivalent in January 2024 prices. The 2024 numbers are based on the EICV7 survey, and the 2017 numbers are model-based. The results show that median real consumption rose by 16% between 2017 and 2024, or by an average of 2.1% per year. Mean consumption rose more quickly than this, at an average of 3.8% annually. The difference may be explained by the relatively high growth of consumption in the highest quintile. during the 2017 to 2024 period.

The growth in median consumption was broadly shared geographically, although growth in Kigali City was appreciably higher than in the Southern Province. There is a substantial gap between consumption in rural and urban areas.

Table 5.3. Median Real Consumption per Adult Equivalent, by Area, Province, and Quintile

	Consumption/ae, medians			Consumption/ae, means		
	EICV7	EICV5*	Change	EICV7	EICV5*	Change
	2024	2017	2017-24	2024	2017	2017-24
	RWF pa in Jan 2024 prices		% change	RWF pa in Jan 2024 prices		% change
Area of residence						
Urban	1,084	1,029	5	1,585	1,495	6
Rural	686	597	15	784	685	15
Province						
Kigali City	1,289	1,109	16	1,976	1,621	22
South	662	569	16	810	682	19
West	646	547	18	780	641	22
North	781	668	17	913	773	18
East	752	638	18	927	762	22
Quintile						
Q1: lowest	414	345	19	401	334	20
Q2	581	492	18	591	492	18
Q3: mid	750	635	18	753	637	18
Q4	1,004	843	19	1,015	851	19
Q5: highest	1,704	1,389	23	2,309	1,845	25
Rwanda	750	630	19	1,011	832	22

Quintiles reflect real consumption per adult equivalent, weighted by population, so there are the same number of people in each quintile. Quintiles are computed separately for actual EICV7, and for each model.

Predictions for 2017 are based on an OLS regression model of the log of consumption/ae p.a. in January 2024 prices, with multiple imputation. Adjusted prediction applies change based on EICV7 and EICV5 predictions to the actual EICV baseline.

Note on the Reclassification of Urban Areas

In Table 5.4, the national headcount poverty rate for 2024 (27.4%) is separated into rates for rural area (31.6%) and urban areas (16.7%). The top panel shows that 28.4% of the population is in urban areas, and 17.3% of all poor people are in urban areas.

After the 2022 Census of Population, substantial areas of the country were reclassified from rural to urban. This was done better to reflect the urbanization of peri-urban areas. The bottom panel of Table 5.4 applies the 2012 urban/rural breakdown, where 18.0% of the population lived in urban areas. By this measure, poverty was 30.6% in rural areas and 12.7% in urban areas. By either measure there is a wide gap in poverty rates between urban and rural areas, and poverty is a predominantly rural phenomenon.

Table 5.4. Contributions of Rural and Urban Areas to National Poverty Rate

	Poverty rate in 2024	Population share	Absolute contribution	Relative contribution
	(1)	(2)	(3)	(4)
Urban: 2022 census definition				
Urban	16.7	28.4	4.7	17.3
Rural	31.6	71.6	22.6	82.6
Urban: 2012 census definition				
Urban	12.7	18.0	2.3	8.4
Rural	30.6	82.0	25.1	91.6
National				
Rwanda	27.4	100.0	27.4	100.0

Source: NISR, EICV7. Note: Figures in column (3) result from multiplying columns (1) and (2).

However, the reclassification of urban areas complicates the interpretation of poverty trends, which we may explain with the help of Table 5.5. In most of the comparisons between EICV5 and EICV7, the definitions of urban/rural that were in effect at the time of the survey are used. Thus, the urban poverty rate of 16.7% observed for 2024 uses the definition of urban based on the 2022 Census, and the estimated urban poverty rate of 19.1% used for 2017 uses the definition of urban that is based on the 2012 Census. By these measures, it would appear that urban poverty fell from 19.1% in 2017 to 16.7% in 2024, or by

2.4 percentage points, and seems to indicate that urban poverty fell relatively more slowly than rural poverty.

The problem is that this understates the reduction in urban poverty. To illustrate this, the middle panel of Table 5.5 compares headcount poverty rates for 2017 and 2024 **using the same definition of urban in both years**. This shows a 6.0 percentage point reduction in urban poverty, and essentially the same relative reduction in poverty rates (38%) in both urban and rural areas between 2017 and 2024.

Table 5.5. Poverty Change with Old and New Definitions of Urban/Rural

	EICV7 actual	EICV5 predicted	Change	
	2024	2017	2017 to 2024	
	% of individuals who are poor		% point change	% change
Area of residence				
Urban (used by EICVs)	16.7	19.1	-2.4	-13.5
Rural (used by EICVs)	31.6	44.0	-12.4	-33.2
Urban (2012 definition)	12.7	18.7	-6.0	-38.4
Rural (2012 definition)	30.6	44.5	-14.0	-37.6
Rwanda overall	27.4	39.9	-12.5	-37.8
Population share:				
Urban (used by EICVs)	28.4	17.8	10.6	
Urban (2012 definition)	18.0	17.8	0.2	

Sources: EICV5 and EICV7. Estimates for 2017 are based on a multiple imputation regression model.

Poverty Profile

This section provides a profile of poverty in Rwanda: where are the poor, and what are the characteristics that they share.

6.1   Geography

Figure 6.1 shows the poverty rate in 2024, and the estimated poverty (using the EICV7 methodology) for 2017. It is clear from the graph that poverty has fallen in the four regions outside Kigali City, and by significant amounts, because the confidence intervals, shown by the "error bars" do not overlap. The Southern and Western regions are substantially poorer than the rest of the country; and not surprisingly, the headcount poverty rate in urban areas, and especially in Kigali, is well below the national average. Although it does appear that the poverty rate has fallen in Kigali, we cannot say this with 95% confidence.

Figure 6.1. Poverty Rates by Area and Region, 2017 (estimated) and 2024
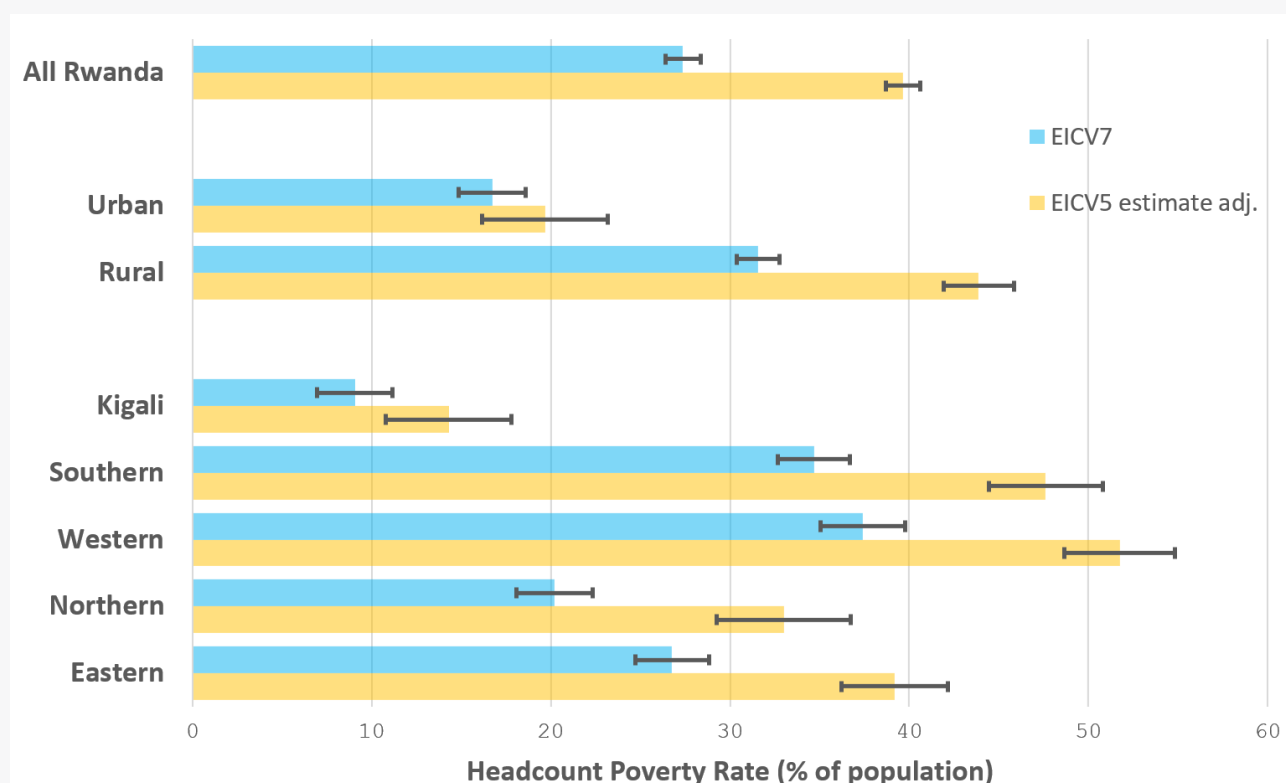
Sources: EICV5 and EICV7. Notes: Estimates for 2027 are based on a multiple imputation regression model. Error bars on the graph show 95% confidence intervals. The definitions of urban and rural areas changed between EICV5 and EICV7, and so the poverty rates are not fully comparable, although the confidence intervals are correct, given the definitions used.

A more granular geographic breakdown of poverty is given in the map in Figure 6.2, which shows the poverty rates in each of the thirty districts of Rwanda. The geographic pattern is clear: low poverty in and around Kigali, with high poverty in the west and south.

Figure 6.2. Map of Headcount Poverty Rates by District, 2024.
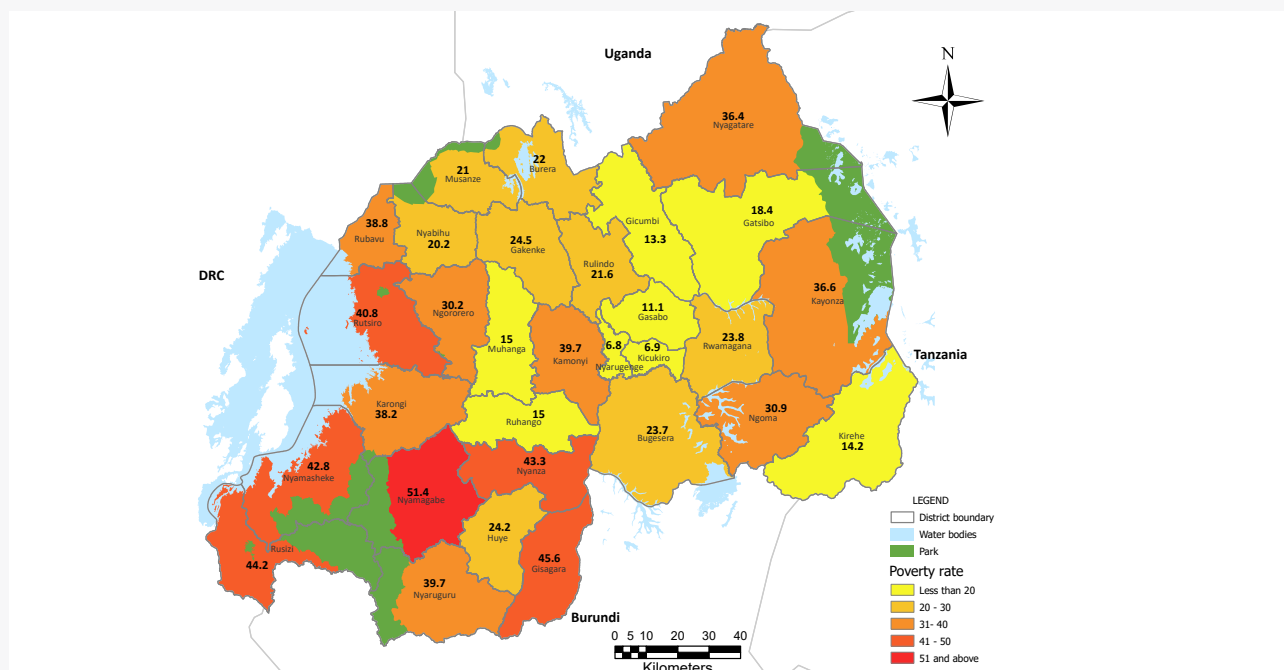
Source: EICV7.

Another way of looking at the district-level data is with the help of Figure 6.3, which shows the poverty rates in 2024 (in blue), the modelled poverty rates in 2017 (in red), and 95% confidence intervals for these, given by the whiskers in the graph. Given the relatively modest sample size for each district — about five hundred households — the confidence intervals are relatively big. While poverty appears to have fallen in every district, we are only confident of this (at the 95% level or higher) for 17 of the 30 districts; in the other cases, such as Kicukiro (Kigali), Burera (North), Nyanza (South), and Ngoma (East) the reduction in poverty was small, and is likely not statistically different from zero.

Figure 6.3. Poverty Rates by District, 2017 (estimated) and 2024
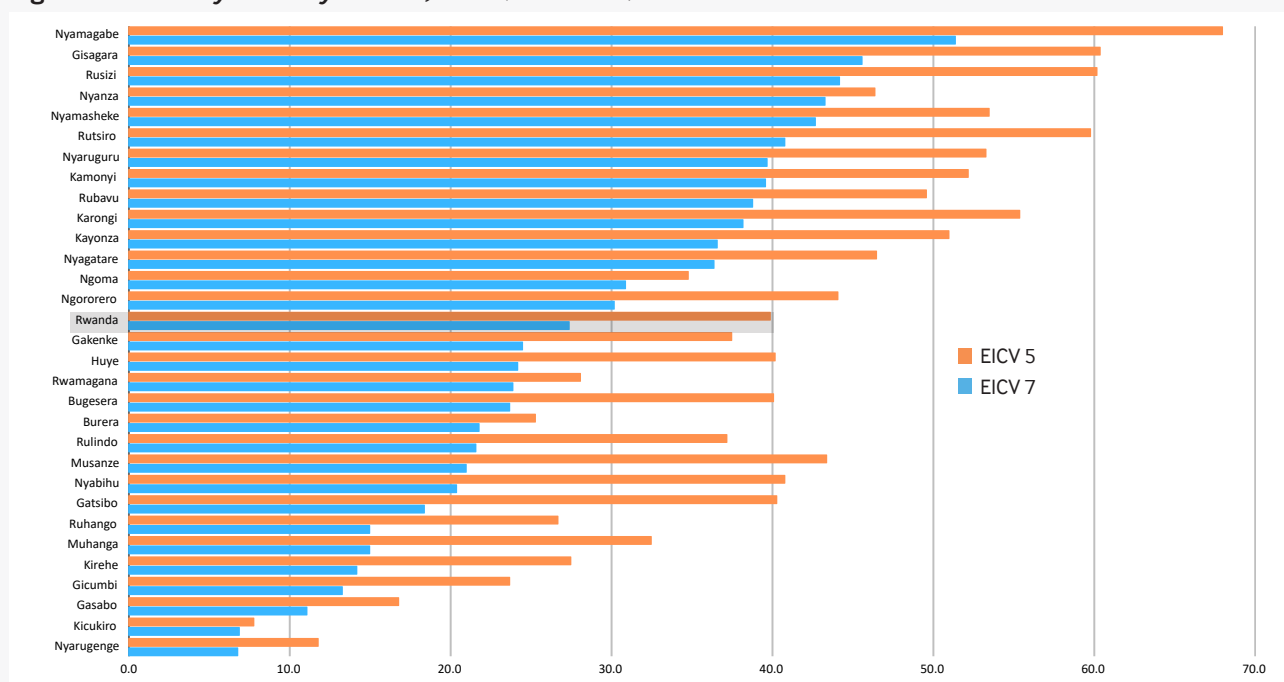
Sources: EICV5 and EICV7. Notes: Estimates for 2027 are based on a multiple imputation regression model. Error bars on the graph show 95% confidence intervals.

6.2   Socio-Economic Dimensions of Poverty

Who are the poor? The next nine tables explore this question.

People living in female-headed households about as likely to be poor as those living in male-headed households, as Table 6.1 shows. Typically, households are considered to be "headed" by a male, unless there is no senior male present – perhaps working far away, or because the most senior household member is a widow or separated.

Those living in households headed by young individuals (here defined a under 35) or older individuals (over 65) are less likely to be poor compared to those living in households headed by middle-aged folks. The final column of Table 6.1, shows the poverty rate for each group: those rates marked with an asterisk are statistically significantly different from the national rate.

Households headed by younger people may be better educated, or more urban, or in better health, all of which may contribute to their relatively lower poverty rate. Older heads may have accumulated more assets.

Table 6.1. Poverty, by Characteristics of the Head of Household

	Non-poor	Poor	All	Poverty rate
	% of individuals			
Gender				
Male	80.7	77.8	79.9	23.3
Female	19.3	22.2	20.1	23.5
Age categories (years)				
17-25	3.8	2.5	3.5	16.6*
26-35	21.5	14.5	19.6	17.6*
36-45	30.9	34.9	32.0	27.5
46-55	19.4	23.4	20.5	28.2
56-65	13.7	14.7	14.0	24.8
66 and above	10.7	10.0	10.5	21.2*
Total	100.0	100.0	100.0	27.4

*Source: EICV7 * = statistically significantly different from the national rate at the 95% level or higher.*

Another way to look at poverty by age and gender is with the help of Table 6.2, which gives the poverty rate for children (aged 16 or below) and adults, by gender. The gender gaps are small: adult women have essentially the same poverty rate as adult men (25% each) and the difference in poverty rate between grils (30%) and boys (31%) is not statisticaly significant. It is not unusual to see that poverty is higher among children than adults – the difference in Table 6.2 is statistically significant - partly because children are more often found in larger households, which in turn tend to be somewhat poorer (as measured by consumption per adult equivalent).

Table 6.2. Headcount Poverty Rate by Demographic Group

Group	% who are poor
Adult males	24.9
Adult females	25.4
Boys (age<=16)	31.0
Girls (age<=16)	29.9
Total	27.4
Source: EICV7	

Poverty rates rise with the size of household, reaching a maximum for 7-person households, after which the poverty rates are lower, as Figure 6.4 shows. Those living in households with four or fewer members have a below-average probability of being poor. The observed lower poverty rates in large (rather than medium-sized) households partly reflects the effects of economies of scale in consumption that are built into the computation of adult equivalents.

Figure 6.4. Poverty Rate by Size of Household 2024
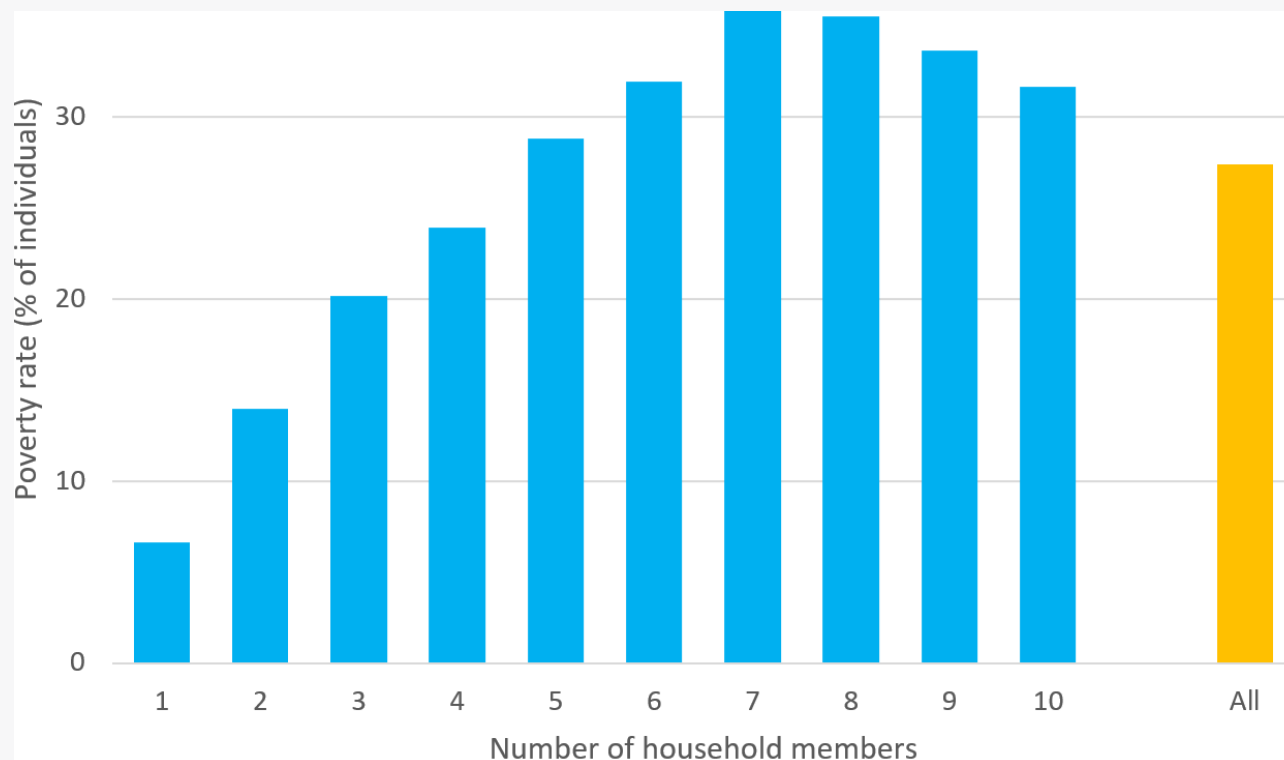
Source: EICV7

The link between education of the head of household and poverty is very strong, as Table 6.3 shows. Fully 78% of the poor lived in a household where the head had not finished primary education, and they were 32% more likely to be poor than the typical person (as shown in the last column of Table 6.3). At the other end of the spectrum nobody who had attended university, and very few of those who had complete lower- or upper-secondary education, were poor.

Table 6.3. Poverty Status by Level of Education Completed by Head of Household, 2024

	Non-Poor	Poor	All	Poverty rate
	% of individuals			%
Level of education completed				
None/Below primary	53.4	78.2	59.2	30.9
Primary	27.1	19.3	25.3	17.8
Lower_secondary	4.9	1.6	4.1	9.0
Upper_secondary	8.0	0.9	6.3	3.3
University	6.6		5.0	0.0
Total	100.0	100.0	100.0	27.4

Source: EICV7. Note: All the poverty rates in the final column are different from the national poverty rate at the 95% level of significance.

Some further information on the links between poverty and education is given in Table 6.4. The net enrollment rate at primary school, defined as the proportion of those aged 6-11 who are enrolled at primary school, was somewhat lower for poor than for non-poor children (89% vs. 95%), but the gap was much larger at the secondary level (21% vs. 40%). Furthermore, poor children were less likely to be promoted from one primary school grade to the next.

The primary gross enrollment rate, which is defined as the total number of all children enrolled in primary school as a percentage of children of primary school age (6-11 years) was 140%, with similar levels for poor and non-poor children. The rate is higher than the net enrollment rate, because it includes children who may have started primary school early, or are finishing late. The high net enrollment rate, coupled with a much higher gross enrollment rate, suggests that a significant proportion of children are repeating at least one year of primary school. The gross enrollment rate is much higher for poor than for non-poor children: children in poor households still face educational headwinds, especially at the secondary level.

Table 6.4. Poverty Status by Educational Characteristics, 2024

	Non-Poor	Poor	Total	Relative value, poor to non-poor
	(1)	(2)	(3)	= (2)/(3)
	Percent, or percent of individuals			
Individuals (6+) who have ever attended school	93.1	88.6	91.9	0.96
Net Enrollment Rate (Primary),	94.7	88.7	92.8	0.96
Net Enrollment Rate (Secondary)	39.6	21.3	33.7	0.63
Gross Enrollment Rate (Primary)	138.9	141.5	139.7	1.01
Gross Enrollment Rate (Secondary)	56.9	29.9	48.2	0.62
Promotion Rate (Primary)	75.4	67.2	72.8	0.92
Literacy rate, ages 15-24	90.4	80.7	87.7	0.92
Computer literacy, 15-24 years	19.5	5.4	15.6	0.35

Source: EICV7.

Literacy, defined as being able to read and write a short note, was higher among non-poor youth (aged 15-24) than for poor youth (90% vs. 81%). It is not clear to what extent this simply mirrors the lower enrollment rates of poor children, or the quality of the education that they obtained, or both.

There is a clear digital divide: only 5% of poor youth (aged 15-24) are computer literate, compared to 20% of non-poor youth. Even with this, the overall level of computer literacy is still low, as is computer ownership (see Table 6.4).

While women are slightly less likely than men to have ever attended school (90% vs. 94%), girls are more likely than boys to be enrolled in primary school in their appropriate age group (94% vs. 92%), significantly more likely to be enrolled in secondary school (38% net enrollment vs. 29%), and more likely to be promoted from one grade to the next (Table 6.5). One result is that young adult women (aged 15-24) are more likely than young adult men to be literate.

For both genders, there is a gap in educational attainment between rich and poor, but there is no systematic evidence of the gap being larger for one gender than the other, as Table 6.5 shows.

Table 6.5. Poverty Status by Educational Characteristics and Gender, 2024

	Male			Female		
	Non- Poor	Poor	Total	Non- Poor	Poor	Total
	Percent, or percent of individuals			**Percent, or percent of individuals**		
Individuals (6+) who have ever attended school	95.0	89.7	93.6	91.4	87.6	90.3
Net Enrollment Rate (Primary)	94.4	87.1	92.0	95.1	90.3	93.6
Net Enrollment Rate (Secondary)	35.0	17.6	29.1	43.8	25.3	38.1
Promotion Rate (Primary)	71.5	64.8	69.4	79.2	69.8	76.2
Literacy rate, ages 15-24	87.4	77.5	84.5	93.1	84.0	90.7
Computer literacy, 15-24 years	20.9	5.9	16.5	18.2	5.0	14.7

Sources: EICV7

An important characteristic of wellbeing is good health. Table 6.6 provides some information on access to, and use of, health services, broken down by area and poverty status. Nationwide, on average an individual is just over half an hour away from the nearest health facility, with the time being shorter in urban than in rural areas (24 vs. 35 minutes). Poor people are slightly further away, requiring about five minutes more to get to a health facility.

Although about 85% of people are covered by health insurance, nationally and in both urban and rural areas, the figure is 77% for the poor, and 66% for the urban poor.

About a quarter of people reported falling ill in the four weeks prior to being surveyed, and this proportion is the same for rich and poor, rural and urban. Just over 70% of those who fell ill reported getting professional care, but with a gap: 75% of the non-poor, and 65% of the poor, got care.

Table 6.6. Health Services and Usage by Poverty Status, 2024

	Non-Poor	Poor	Total
	% of individuals		
All Rwanda			
Time (minutes) to health facility	30.4	34.8	31.6
Covered by any medical insurance	88.6	76.6	85.3
Ill in past four weeks	27.4	26.2	27.1
Got care, if ill (%)	73.2	64.5	70.9
Urban			
Time (minutes) to health facility	23.1	27.0	23.8
Covered by any medical insurance	88.6	67.3	85.1
Ill in past four weeks	26.7	27.2	26.7
Got care, if ill (%)	73.1	90.2	71.0
Rural			
Time (minutes) to health facility	33.6	36.4	34.5
Covered by any medical insurance	88.6	78.5	85.4
Ill in past four weeks	27.8	26.0	27.2
Got care, if ill (%)	73.3	65.5	70.9

Source: EICV7. Note: All values for poor and non-poor individuals are statistically significantly different from the national rates (with 95% confidence or higher), except for the illness rate in urban areas.

As people become better off, they tend to improve their housing, and this is apparent in Table 6.7. The non-poor are more likely to have improved sanitation (97% vs. 91%), use an improved source of drinking water, and have a corrugated iron roof. Almost half of the non-poor have a modern floor (made of concrete or tiles), compared to just 16% for the poor. And while 28% of the non-poor cook with a fuel such as charcoal or gas, only 6% of the poor do this.

There is also a large difference in access to electricity, where 81% of the non-poor are on a grid or using solar panels compared to 58% of the poor.

Table 6.7. Household Housing Characteristics by Poverty Status, 2024

	Non-poor	Poor	All
	% of households		
Road < 20 minutes away	91.1	85.0	89.7*
Total Improved Sanitation	95.9	89.4	94.3*
HHs whose main source of drinking water is improved	91.1	85.0	89.7*
Owner-occupied home	70.4	78.9	72.4*
Corrugated iron roof	78.6	66.6	75.8*
Umudugudu	67.1	70.3	67.9*
Modern floor	46.8	14.5	39.2*
Electricity from grid or solar panels	77.1	55.2	72.0*
Charcoal or better	29.6	6.1	24.1*

*Source: EICV7. * = difference between proportions for poor and non-poor is statistically significant at the 95% level or higher.*

Slightly more poor than non-poor people own (rather than rent) their home (82% vs. 77%), or live in a planned *umudugudu* community. Although 96% of people live within 20 minutes of an all-weather road, the figure is marginally lower for poor people (94%).

Poor people own significantly fewer durable goods than the non-poor, as Table 6.8 demonstrates. While 55% of the non-poor aged 10 or older have a phone, the figure is 34% for the poor. Almost no poor households own a computer (0.1%), and very few own a TV (4%). While 12% of poor households have a bicycle, the figure is 22% for the non-poor. Radio ownership, which includes phones equipped with a radio function, stands at 43% for poor households but 68% for the non-poor.

Table 6.8. Household Durable Goods Ownership by Poverty Status, 2024

	Non-poor	Poor	All
	% of households		
Phone Ownership per person aged 10 or older	55.2	34.0	48.9
Own a Radio	67.8	42.7	60.3
Own a TV	27.5	3.6	20.3
Own a computer	4.2	0.1	3.0
Own a bicycle	22.1	11.6	18.9

Source: EICV7.

Table 6.9 breaks down the main source of income for the household head, by poverty status. Although similar numbers of poor and non-poor household heads are independent farmers, poor heads are more likely to be farm laborers, and less likely to have non-farm wage employment or be self-employed outside agriculture. Over a third of poor household heads depend mainly on farm wages, or almost twice their share of the population.

Two-thirds of households have a savings account, but this is more common among the non-poor than the poor (74% vs. 54%). Mobile cash accounts are used by 87% of households, including 78% of poor households.

Table 6.9. Poverty Status by Main Source of Income, 2024

	Non-poor	Poor	All
	% of households		
Main source of income of head of household is:			
Farm wages	11.8	32.5	16.5
Non-farm wages	30.1	18.9	27.5
Independent farmer	41.2	41.0	41.1
Independent non-farmer	16.3	7.0	14.2
Others	0.7	0.6	0.6
Total	100.0	100.0	100.0
Memo items:			
Household has at least one savings account	74.4	53.2	68.0
Household has at least one Momo Account/Mocash	90.3	77.8	86.6

Source: EICV7.

6.3   Shocks

Poor households reported being hit by a shock in the year prior to being surveyed slightly more often than non-poor households (41% vs. 36%), as Table 6.10 shows. In both cases, the nature of the shocks was remarkably similar: almost a third were environmental in nature (floods, drought), a quarter were health-related, and a fifth were due to high food prices.

Table 6.10. Poverty Status by Type of Shock Reported by Household, 2024

	Non-poor	Poor	All
	% of households		
A least one severe shock/unusual situation	35.6	41.0	37.1
Categories of main shock faced:			
Environmental shocks (flood, downpour, drought, landslide)	30.6	30.6	30.6
Farm-related (High input cost, livestock disease, etc.)	4.4	3.8	4.2
High food price	22.0	20.5	21.5
Loss/reduced Income from employment	8.4	8.6	8.5
Health Problem (Including death)	26.7	27.5	27.0
Other	7.8	9.0	8.2
Total	100.0	100.0	100.0

Source: EICV7. Households may report facing more than one shock; only the main shock is reported here.

The responses to a shock are summarized in Table 6.11. Poor households were slightly more likely than non-poor to react by buying less food or work longer hours, and were less likely to borrow or dip into savings.

*Table 6.11. **Responses to Shocks, for Households Reporting Shocks***

	Non-poor	Poor	All
	% of households		
Any form of shock (unusual situation) 1st severe shocks	35.6	41.0	37.1
Main way household responded to shock was by:			
Buying less food	21.4	24.4	22.3
Using savings, and/or borrowing	23.0	16.3	20.9
Selling assets	14.5	11.5	13.6
Working longer hours and/or working more	28.0	31.4	29.1
Receiving help	7.8	9.5	8.3
Other	5.3	6.9	5.8
Total	100.0	100.0	100.0

Source: EICV7. Households may report responding to shock in more than one way

Chapter

7

Inequality

Measures of poverty focus on the state of those at or near the bottom of the income (or consumption) distribution, while measures of economic inequality look at the entire distribution.

A widely-used measure of inequality is the Gini coefficient, which varies from 0 (perfect equality) to 1 (complete inequality). For convenience, the coefficient is often multiplied by 100, as done in Table 7.1, which shows a Gini of 37.0 for 2024, based on the distribution of consumption per adult equivalent. This indicates moderate inequality: values below 30 would indicate a relatively equal society, while values above 40 represent substantial inequality.

Inequality is relatively high within urban areas (compared to rural areas), and is higher in Kigali than in any other region.

It would be interesting to know whether inequality is mainly the result of a wide rural-urban gap, or reflects inequality everywhere. One way to address this question is by decomposing a measure of inequality into the part due to inequality within an area or region ("within" inequality) and the part due to differences between areas or regions ("between" inequality). The Gini coefficient cannot be easily decomposed to show this, but it can be done using Theil's T statistic which also ranges from 0 (equal) to 1 (unequal).

Table 7.1. Measures of Inequality, 2024

	Gini coefficient	Theil's T
Estimate	37.0	28.9
95% confidence interval	36.0-38.0	
By area		
Urban	43.8	36.7
Rural	26.3	12.3
"Within"		23.1
"Between"		5.8
Between as % of total		20
By region		
Kigali City	44.5	37.5
South	30.4	18.0
West	30.0	16.6
North	27.5	14.3
East	31.4	19.4
"Within"		22.8
"Between"		6.1
Between as % of total		21

Source: EICV7. Theil's T is the same as the General Entropy measure GE(1).

For 2024, Theil's T stood at 28.9 for Rwanda as a whole. It was higher in urban areas (36.7) than in rural areas (12.3), reflecting the high inequality that is typically observed within towns and cities. If there were no urban-rural gap in consumption per adult equivalent, Theil's T would have been 23.1, which measures the within inequality; the disparity in consumption between urban and rural areas adds a further 5.8 to the measure of overall inequality. This means that about a fifth of inequality is attributable to the urban-rural gap.

Table 7.1 also breaks down inequality by province. Here too, about a fifth of inequality is attributable to differences in average consumption across provinces; the rest reflects inequality within the provinces.

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Companion publications related to EICV7, by NISR, include the following:

Main Indicator Report

*   Education Report

*   Utility and Amenities Report

*   Economic Activity Report

*   Youth Thematic Report

*   Gender Thematic Report

*   Multidimensional Poverty Report

*   Multidimensional Child Poverty Report

*   VUP Report

*   Agriculture Report

The food poverty line computes the cost of providing 2,400 kcals per day, using a diet that is characteristic of households in the second quintile. The second quintile was chosen because the poverty rate was expected to fall somewhere in this quintile, and the idea was to cost a diet that would reflect the habits of those close to the poverty line – an assumption that proved correct.

Annex A:
Food Components of Poverty Line

The table here lists each item, it's associate national price in the base period (January 2024), the calories provided, quantity consumed, units, kilocalories per 100 grams, source of the kilocalorie information, and cost per day. The total comes to 1,933.7 kcals. To this we add food consumed outside the home, including school meals. This brings the total to 2,170 kcals. We gross up the cost of home consumptinno by 12% (see "Quantity(Adjusted)") to derive the cost.

The information on calories per 100g refers to the whole item (as one might purchase or produce it), and not just to the edible portion. The sources of this information are:

WA: FAO West Africa
KE: Kenya
FAO: FAO international
TZ: Tanzania
USDA: US Department of Agriculture
EICV4
Web: Web search

ITEMS	COICOP	Price	Cals	Quantity	Quantity (Adjusted)	Unit	kcals/100g	Source	Cost/day
COMMON ITEMS									
Dry bean	01.1.7.5.01	607	374.95	0.117	0.131	Kg	320	WA	79.879
Fresh bean	01.1.7.3.02	892	22.43	0.027	0.031	Kg	82	KE	27.368
String bean	01.1.7.3.01	740	0.56	0.002	0.002	Kg	37	WA	1.254
Groundnut flour	01.1.6.8.03	1836	42.36	0.007	0.008	Kg	574	WA	15.203
Irish potato	01.1.7.7.01	388	108.27	0.152	0.171	Kg	71	WA	66.401
Sweet potato	01.1.7.8.01	381	285.15	0.356	0.400	Kg	80	WA	152.365
Cassava (root)	01.1.7.8.02	440	93.02	0.078	0.088	Kg	119	WA	38.562
Tarot/amateke	01.1.7.8.05	589	65.14	0.060	0.067	Kg	109	WA	39.502
Banana-cooking (Inyamunyo)	01.1.6.2.02	436	109.78	0.134	0.150	Kg	82	WA	65.444
Corn (flour from Mill)	01.1.1.6 .07	957	127.06	0.036	0.040	Kg	353	WA	38.676
Cassava flour (yasekuwe)	01.1.7.8.04	914	29.72	0.009	0.010	Kg	341	WA	8.941
Cassava (fermented)	01.1.7.8.03	683	2.76	0.002	0.003	Kg	119	WA	1.782
Local rice	01.1.1.1.01	1256	118.51	0.034	0.038	Kg	351	WA	47.593
Imported rice	01.1.1.1.02	1449	28.77	0.008	0.009	Kg	351	WA	13.328
Maize (fresh)	01.1.1.6.01	303	73.58	0.052	0.058	Kg	142	WA	17.592
Dry maize (grain)	01.1.1.6.02	519	49.24	0.014	0.016	Kg	350	WA	8.192
Tomato	01.1.7.3.04	676	5.48	0.027	0.031	Kg	20	WA	20.757
Fresh milk	01.1.4.1.01	804	10	0.016	0.018	L	64	WA	14.100
Curdled Milk	01.1.4.5.02	782	5.66	0.009	0.010	L	62	WA	8.007
Cakes/Chapati/Mandazi	01.1.1.4.01	100	93.6	0.037	0.041	Piece	424	KE	4.146
Sugar (imported)	01.1.8.1.02	1957	12.6	0.003	0.004	Kg	400	WA	6.919
Sugar (local)	01.1.8.1.01	1968	9.7	0.002	0.003	Kg	400	WA	5.352
Salt	01.1.9.2.01	413	0	0.009	0.010	Kg	0	WA	4.143
Local banana beer	02.1.3.1.05	411	4.77	0.010	0.011	L	47	FAO	4.681
Sorghum juice(Ubushera)	02.1.3.1.04	304	9.15	0.023	0.026	L	40	WA	7.811
Local sorghum beer(ikigage)	02.1.3.1.03	412	2.41	0.006	0.007	L	40	FAO	2.787
EDIBLE OILS									
Peanut oil	01.1.5.4.01	3495	72.44	0.008	0.009	L	900	WA	31.569
Palm oil	01.1.5.4.02	2373	7.33	0.001	0.001	L	900	WA	2.169
Other plant oils	01.1.5.4.03	3142	8.42	0.001	0.001	L	899	WA	3.299
Lard of pork	01.1.5.9.1.1	2000	0.28	0.000	0.000	Kg	902	FAO	0.069
MEAT									
Beef meat	01.1.2.1.01	4150	1.36	0.001	0.001	Kg	131	WA	4.831
Sheep /Mutton / lamb meat	01.1.2.3.01	3500	0.1	0.000	0.000	Kg	139	WA	0.277
Goat meat	01.1.2.3.02	4637	0.13	0.000	0.000	Kg	115	WA	0.596

ITEMS	COICOP	Price	Cals	Quantity	Quantity (Adjusted)	Unit	kcals/100g	Source	Cost/day
Pork meat	01.1.2.2.01	3072	0.78	0.001	0.001	Kg	152	WA	1.759
CEREALS									
Sorghum	01.1.1.6.03	729	1.57	0.000	0.001	Kg	345	WA	0.372
Wheat (grain)	01.1.1.6.05	1015	0.16	0.000	0.000	Kg	329	WA	0.057
CEREAL FLOURS									
Sorghum (flour)	01.1.1.6.08	979	10.3	0.003	0.003	Kg	351	WA	3.2245
Wheat (flour)	01.1.1.6.09	2464	0.97	0.000	0.000	Kg	352	WA	0.7601
Millet (flour)	01.1.1.6.10	1295	0.13	0.000	0.000	Kg	367	WA	0.0519
FOOD PRODUCTS									
Pasta	01.1.1.3.01	1042	1.14	0.000	0.000	Kg	354	KE	0.3749
POULTRY & PRODUCTS									
Eggs	01.1.4.7.01	203	4.27	0.007	0.007	Piece	131	WA	1.4860
FISH									
Fish (fresh / frozen)	01.1.3.1.01	2809	1.13	0.001	0.001	Kg	112	TZ	3.1833
Small Sized Fish (dry)	01.1.3.2.9.3	3026	7.72	0.002	0.003	Kg	335	TZ	7.8305
DAIRY & PRODUCTS									
Milk powder	01.1.4.3.01	11685	0.02	0.000	0.000	Kg	493	WA	0.0480
Butter (local)	01.1.5.1.01	1500	0.13	0.000	0.000	Kg	743	WA	0.0294
Butter (imported)	01.1.5.1.02	7000	0.02	0.000	0.000	Kg	743	WA	0.0206
FRUITS									
Banana fruit (Imineke)	01.1.6.2.01	772	9.72	0.013	0.015	Kg	75	WA	11.2295
Banana - beer (Ikakama/Inkashi)	01.1.6.1.2.2	200	5.56	0.012	0.013	Kg	47	FAO	2.6537
Mangos	01.1.6.5.02	763	2.1	0.004	0.005	Kg	50	WA	3.5897
Papayas	01.1.6.7.03	577	1.3	0.004	0.004	Kg	37	WA	2.2807
Avocado	01.1.6.5.01	391	33.79	0.030	0.034	Kg	111	WA	13.3740
Pineapple	01.1.6.7.01	367	0.61	0.002	0.002	Kg	36	WA	0.6988
Guava	01.1.6.7.02	320	2.27	0.003	0.004	Kg	67	WA	1.2147
Orange (local)	01.1.6.1.01	863	0.23	0.001	0.001	Kg	32	WA	0.6891
Orange (imported)	01.1.6.1.02	801	0.03	0.000	0.000	Kg	32	WA	0.0797
Tangerine	01.1.6.1.04	997	0.03	0.000	0.000	Kg	53	TZ	0.0627
Citron - Lemon	01.1.6.1.03	1699	0.05	0.000	0.000	Kg	24	WA	0.3845
Passion Fruit	01.1.6.7.04	2252	0.25	0.001	0.001	Kg	43	TZ	1.4726
Plums	01.1.6.5.03	1478	0.09	0.001	0.001	Kg	15	WA	0.9433
Apples	01.1.6.1.05	3954	0	0.000	0.000	Kg	53	WA	0.0187
LEGUMES									
Soya Flour	01.1.9.4.03	1220	7.94	0.002	0.002	Kg	437	KE	2.4858
Sunflower flour	01.1.1.2.9.1	1667	3.41	0.001	0.001	Kg	584	USDA	1.0912
Ground nuts (peanuts)	01.1.6.8.01	1975	0.6	0.000	0.000	Kg	574	WA	0.2305
Grilled ground nuts	01.1.7.5.7.1	3502	0.76	0.000	0.000	Kg	574	WA	0.5214
Soya (fresh)	01.1.9.4.02	916	1.42	0.000	0.000	Kg	415	TZ	0.3529
Soya (dry)	01.1.9.4.04	1200	0.6	0.000	0.000	Kg	381	WA	0.2112
Green pea (fresh)	01.1.7.3.03	1587	1.1	0.001	0.001	Kg	84	TZ	2.3265
Green pea (dry)	01.1.7.5.02	2021	0.64	0.000	0.000	Kg	324	KE	0.4459
VEGETABLES									
Onion	01.1.7.4.01	1408	1.51	0.005	0.005	Kg	33	WA	7.2427
Pumpkin	01.1.7.3.08	293	4.01	0.017	0.020	Kg	23	WA	5.7311
Cucumber	01.1.7.3.06	898	0.08	0.001	0.001	Kg	12	WA	0.6332
Eggplant	01.1.7.3.07	398	3.55	0.014	0.016	Kg	25	WA	6.3508
Carrot	01.1.7.4.03	539	1	0.003	0.004	Kg	31	WA	1.9480
Leeks	01.1.7.4.04	1942	0.06	0.000	0.000	Kg	35	KE	0.3611
Lettuce	01.1.7.1.01	1395	0	0.000	0.000	Kg	12	WA	0.0126
Celery	01.1.7.1.07	1748	0.01	0.000	0.000	Kg	16	Web	0.0813
Parsley	01.1.7.1.02	2294	0	0.000	0.000	Kg	40	WA	0.0049
Mushrooms	01.1.7.4.05	3000	0.23	0.001	0.001	Kg	27	TZ	2.8983
Cassava leaves	01.1.7.1.06	507	11.52	0.018	0.020	Kg	65	WA	10.0969
Amarante (small leafed green)	01.1.7.1.04	239	10.22	0.034	0.038	Kg	30	WA	9.1285
Cabbages	01.1.7.2.01	142	5.56	0.023	0.026	Kg	24	WA	3.6910
Spinach	01.1.7.1.03	442	0.06	0.000	0.000	Kg	20	WA	0.1607
Amarante (large leafed green)	01.1.7.1.05	266	1.37	0.005	0.005	Kg	30	WA	1.3677
Chayote	01.1.7.3.09	93	5.13	0.027	0.030	Kg	19	EICV4	2.8251
Pepper	01.1.7.3.05	822	0.08	0.000	0.000	Kg	28	WA	0.2795

ITEMS	COICOP	Price	Cals	Quantity	Quantity (Adjusted)	Unit	kcals/100g	Source	Cost/day
ROOTS TUBERS									
Yams/Ibikoro	01.1.7.8.06	497	0.52	0.000	0.001	Kg	110	WA	0.2613
SUGAR & PRODUCTS									
Sugarcane	01.1.8.1.03	299	7.8	0.030	0.034	Kg	26	TZ	10.0556
Honey	01.1.8.2.02	3293	0.25	0.000	0.000	Kg	326	WA	0.2832
SPICE & OTHER FOOD ITEMS									
Mayonnaise	01.1.9.1.02	4290	0.01	0.000	0.000	Kg	680	USDA	0.0041
Pepper-raw	01.1.9.2.02	2392	0.04	0.000	0.000	Piece	19	TZ	0.5420
NON-ALCHOHOLIC BEVERAGES									
Mineral water	01.2.2.1.01	492	0	0.000	0.000	L	0	WA	0.0381
Local banana juice	01.2.2.3.01	392	5	0.010	0.012	L	48	EICV4	4.5841
Passion fruit juice	01.2.2.3.02	8912	0.01	0.000	0.000	L	54	USDA	0.1515
Coffee (local)	01.2.1.1.01	8043	0	0.000	0.000	Piece	0	FAO	0.0065
ALCHOHOLIC BEVERAGES									
Other local beer	02.1.9.0.0.1	1200	0.05	0.000	0.000	L	27	WA	0.2656
Commercial beer (local)	02.1.3.1.01	987	0.07	0.000	0.000	L	41	WA	0.1906

Total Food at Home Cost /Day/ae (sum of last column)	878.343
Food School Cost/Day/ae	30.2
Restaurant food Cost/day/ae	68.0
Total Food Cost	976.5
Annual Food Cost	356,432

Memo items:

Calories Consumed at Home	1,933.7
Food Outside Home Calories	
Breakfast Calories (ae/day)	5.7
Lunch Calories (ae/day)	90.7
Dinner Calories (ae/day)	22.8
Meals at School Calories (ae/day)	110.8
Food Outside Home Calories (ae/day)	230.0
Food Home	2,170
Adjustment Factor	1.12

Annex B: Headcount Poverty Rate in 2024 (actual) and 2017 (modelled) by District

Rank	District	Porverty rate		Percentage points decrease
		EICV5	EICV7	
30	Nyamagabe	67.6	51.4	16.2
29	Gisagara	59.5	45.6	13.9
28	Rusizi	59.0	44.2	14.9
27	Nyanza	46.9	43.3	3.6
26	Nyamasheke	53.6	42.8	10.8
25	Rutsiro	59.9	40.8	19.1
24	Nyaruguru	52.6	39.7	12.9
23	Kamonyi	53.0	39.7	13.3
22	Rubavu	49.2	38.8	10.4
21	Karongi	53.0	38.2	14.8
20	Kayonza	51.0	36.6	14.5
19	Nyagatare	48.6	36.4	12.3
18	Ngoma	34.0	30.9	3.1
17	Ngororero	44.4	30.2	14.2
16	Gakenke	36.7	24.5	12.2
15	Huye	39.4	24.2	15.3
14	Rwamagana	29.6	23.8	5.7
13	Bugesera	40.8	23.7	17.1
12	Burera	25.5	22.0	3.5
11	Rulindo	35.2	21.6	13.6
10	Musanze	42.3	21.0	21.3
9	Nyabihu	39.6	20.2	19.4
8	Gatsibo	38.0	18.4	19.6
7	Ruhango	26.2	15.0	11.2
6	Muhanga	33.2	15.0	18.3
5	Kirehe	26.0	14.2	11.7
4	Gicumbi	24.6	13.3	11.3
3	Gasabo	18.1	11.1	7.0
2	Kicukiro	8.2	6.9	1.3
1	Nyarugenge	11.6	6.8	4.8
	Rwanda	39.8	27.4	12.4
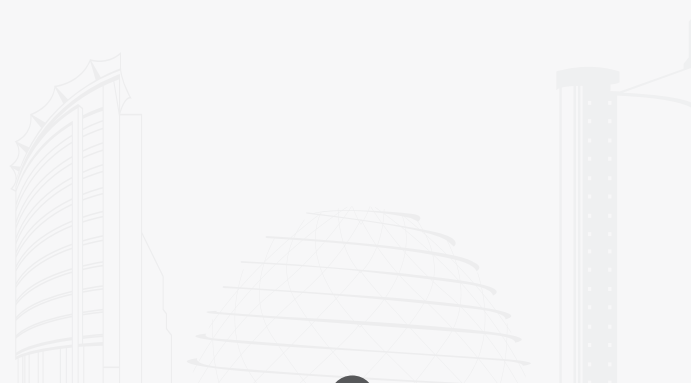
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EICV7

POVERTY PROFILE

Thematic Report

2023-24