Republic of Rwanda

# 7Th INTEGRATED HOUSEHOLD LIVING CONDITIONS SURVEY REPORT

NISR
NATIONAL INSTITUTE OF STATISTICS OF RWANDA


# EICV7 | MULTIDIMENSIONAL POVERTY

## Thematic Report

2025

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Published in 2025

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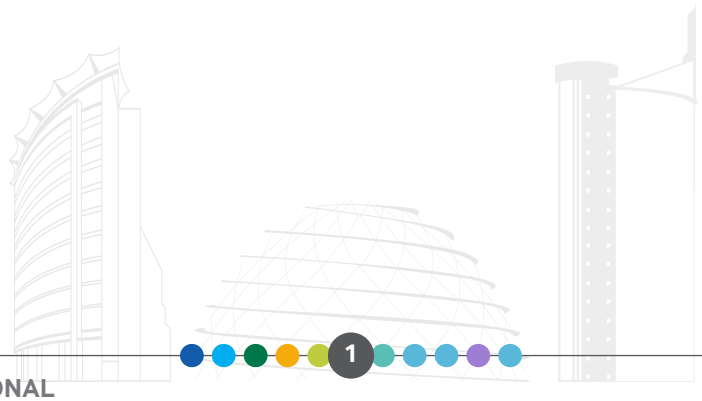

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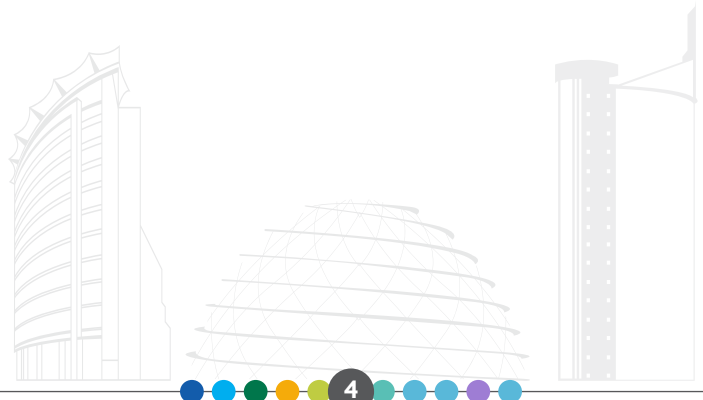
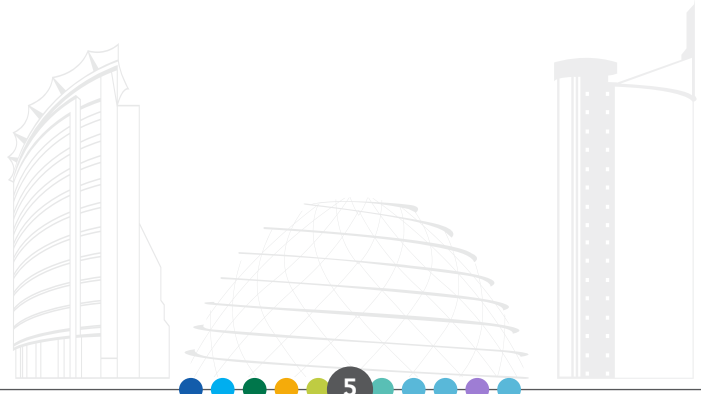


# List of Abbreviations

| | |
|---|---|
| DHS | Demographic and Health Surveys |
| EICV | Integrated Households Living Conditions Surveys |
| SDGs | Sustainable Development Goals |
| MPI | Multidimensional Poverty Index |
| NISR | National Institute of Statistics of Rwanda |
| OPHI | Oxford Poverty and Human Development Initiative |
| SDGs | Sustainable Development Goals |



# 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.


Yusuf MURANGWA

Minister of Finance and Economic Planning

# Acknowledgements

The Seventh Integrated Household Living Conditions Survey (EICV7) was conducted from October 2023 to October 2024, building upon the strong foundation of previous EICV surveys. Designed to provide timely and updated statistics, EICV7 supports the monitoring and evaluation of policies and programs related to poverty and wellbeing.

The protocols used to survey households and the methodology applied to measure consumption and poverty were significantly revised for EICV7 to align with evolving best practices. While the updated methodology is more robust, caution is advised when comparing the EICV7 results with those of previous EICV surveys, especially on poverty estimates. The NISR typically conducts an EICV survey every three years, a frequency made possible by the strong collaboration of our stakeholders and their support, as they share our commitment to evidence-based decision making and planning processes grounded in reliable, valid, and regular statistics.

We sincerely thank the thousands of households that participated in EICV7 for their willingness to provide data is the foundation of this report. The insights gained will play a key role in shaping policies and programs aimed at improving the living conditions of all Rwandans.

We extend our sincere gratitude to the Government of Rwanda for its strong commitment to the development of statistics in the country. Special thanks go to the Ministry of Finance and Economic Planning, as well as other government ministries and agencies, for their support and facilitation throughout the survey process. We are particularly thankful to our development partners for their vital financial and technical support. Our special appreciation goes to the World Bank team, especially Juan Carlos Parra, Christian Camilo Gomez Canon, and Nobuo Yoshida for their technical inputs during the EICV7 implementation.

We also appreciate the support of national and international experts, whose technical contributions enhanced the quality of data analysis and reporting. The EICV7 management team deserves special recognition for their dedication and effective coordination throughout the planning, data collection, and analysis phases of the survey.

Finally, we are truly grateful to the field teams and data processing staff for their professionalism and resilience during this survey round. The implementation of this survey required the efforts of approximately 240 people, including field workers, data quality monitors, IT personnel, cartographers, analysts and report designers. Their commitment was instrumental in ensuring the production of high-quality data and reports. Additionally, we acknowledge the invaluable support provided by the administrative and finance department of the National Institute of Statistics of Rwanda (NISR), which ensured the smooth execution of this exercise.

MURENZI Ivan

Director General, NISR

# Important technical notes for data users

The Seventh Integrated Household Living Conditions Survey (EICV7) was conducted from October 2023 to October 2024, building upon the strong foundation of previous EICV surveys. Since 2010, an EICV has normally been conducted every three years, but the EICV6 was interrupted by the Covid19 pandemic, leading to a gap in the survey series. Consequently, through different EICV7 reports, the comparisons of different indicators will primarily focus on EICV5, which was undertaken in 2016-17, and is the most recent fully completed survey prior to EICV7.

## Sampling

The EICV7 has two main components: a large cross-sectional sample of nationally-representative households, and a Vision Umurenge Program (VUP) survey of households receiving VUP benefits. The EICV7 data collection was covered in a period of 12 months (October 2023 to October 2024). In order to represent the seasonality in the income and consumption data, the data collection was divided into nine nationally-representative cycles for the fieldwork.

The NISR developed a Master Sample of primary sampling units (PSUs) based on the data from the 2022 Rwanda Census of Population and Housing, which was designed to provide samples for various national household surveys during the intercensal period, including the EICV. Samples were drawn from each of the country's thirty districts ("strata"). Within each stratum, the Master Sample PSUs were selected with probability proportional to size (PPS), using the number of households enumerated in the Census as the measure of size for each Enumeration Area (EA).

In order to determine the sample size for the EICV7, NISR examined the EICV5 data to compute the sampling errors and 95% confidence intervals for the estimates of the poverty rate at the district level. Although the level of precision of the EICV5 results at the district level was fairly reasonable, NISR decided to increase the sample size slightly and adjust the sample design for the EICV7 to provide an improved level of precision for the district-level results. Concerning the three districts of Kigali, the sample of 72 EAs per district, and 54 EAs in districts outside the city of Kigali, were selected from the master sample for the first sampling stage. Overall, a sample of 1,674 EAs was distributed across nine data collection cycles over 12 months.

Within each district, the sample EAs were allocated to the urban and rural strata in proportion to the total number of households in the Census frame. For each sampled cluster, a comprehensive listing operation of all households in the EA was conducted to update the household count in the Master Sample.

At the second sampling stage, nine households per sample EA for all districts were selected. In order to distribute the sample interviews and facilitate the logistics during the data collection period over the 12-months, the sample EAs were divided into nine cycles of about 40 days each. To further facilitate the enumeration of two sample EAs by a team, three sub-cycles of 12 days each were created from every cycle. For the team to be able to rest and reach the sample EAs assigned to the next sub-cycle, one day off was given among every sub-cycle and two days among cycles.

In each district of Kigali, eight samples EAs were enumerated in each cycle while six were enumerated in districts outside of Kigali. With the aim to ensure high response rates, a random selection of three households was added to the nine-existing households, for the provision of replacement where need be. The response rate was more than 99% at the end of the survey.

The VUP Survey, conducted alongside EICV7, targeted households who benefitted from any of the seven VUP components. The sampling frame was derived from a comprehensive beneficiary database. A stratified two-stage sampling approach was used, with EAs of beneficiaries as PSUs, and nine households sampled per EA. Stratification was based on the predominant VUP component within each EA. Adjustments were made for smaller components to ensure adequate representation.

## Data collection operations and quality assurance

The comprehensive EICV7 operations involved careful planning, training, and execution to ensure the data collected was of high quality. In July 2023 throughout the pilot survey in the preliminary phase, 15 experienced enumerators were trained for two-weeks. Following the training, the enumerators conducted a two-week field test to refine tools and methodologies. The overall training of enumerators, which lasted one month (August to September 2023), was followed by two weeks of practical exercises to simulate real scenarios in the assigned districts before the main data collection.

During the training sessions, a number of enumerators were equipped with skills to measure non-standard units. Each team of enumerators had one enumerator who was in charge of collecting information from local markets and restaurants. NISR used the collected information regarding non-standard units to convert consumed non-standard unit items by the household into standard units. The information obtained from the local restaurants has also been used to value the food calories consumed outside the home.

Another key component of EICV7 was the extension of price data collection to cover the urban and rural areas of all the 30 districts of the country. For this purpose, a team of 17 price data collectors was trained and deployed in the field during 12 months from October 2023 to October 2024 to supplement the usual Consumer Price Index (CPI) team.

The NISR collected data for the EICV7 using computer-assisted personal interviewing (CAPI) with tablets, and the data was transmitted to the server on a daily basis. Data quality was assured through robust mechanisms, including daily inconsistency checks, monitoring key indicators, and regular field supervision. Daily reporting systems facilitated real-time tracking and resolution of issues, while cycle-end reports provided comprehensive updates on the ongoing field activities.

## Important changes in EICV7

The EICV7 survey incorporates significant methodological advances to provide a more accurate and comprehensive assessment of poverty in Rwanda. The methodology of poverty measurement used in the previous EICVs was built on EICV1, which was launched 25 years ago, and there was a need to reconsider it and, when necessary, update the methods used to collect and process the data.

Because of the differences in data collection methods and scope between EICV7 and earlier EICV surveys, it is not possible to directly compare the new consumption and poverty variables with those of earlier surveys, although most other socio-economic indicators remain comparable. For consumption and poverty, we used advanced modeling techniques to allow some comparability over time.

Among the more important changes were:

- Fewer visits per household (5 instead of 8 or 11);
- Information on food collected over a seven-day period (instead of 14 or 30 days);
- Separate questions on food acquisition and consumption allows for a true measure of food consumption;
- More-detailed questions on food consumed away from home, and on school meals, allow these to be included in consumption;
- Additional questions to allow for the measurement of gifts and in-kind payments for non-food items;
- A revised, and more realistic, method to compute the use value of durable goods;
- Deflation to the prices of January 2024 uses individual household-level Paasche deflators, rather than the regional-level indexes used in EICV5;
- The adult equivalence scale has been redefined to allow for economies of scale in non-food consumption;
- 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).

## Triangulation with other sources of data

The triangulation of EICV7 data with other sources, particularly the 2022 General Population and Housing Census (GPHC) as well as other administrative data, provides an opportunity to validate key findings and ensure consistency across national statistics. However, for some indicators, this process faces challenges in achieving accurate comparability, due to the differences in reference periods and methodological approaches across sources. Therefore, direct comparisons should be done with caution, taking in account that limitation.

## Rounding of estimates

Estimates displayed in the tables are generally shown rounded to one decimal place. To improve the readability, estimates referring to the interpretation of results have been rounded to the nearest integer, except for the discussion of relatively small percentages. Moreover, estimates of total population or total number of households are shown in tables expressed in '000's. Due to the rounding, the subpopulation totals (e.g. provinces or age groups) can be marginally different from the total population estimated at the national level.

## Consumption quintiles

The results are presented by quintile. Quintiles are developed by sorting the sample of households by the value of annual consumption per adult equivalent, and then dividing the population into five equal shares. The 20% of individuals with the highest annual consumption are allocated to quintile five, and the 20% of individuals with the lowest level of annual consumption are allocated to the first quintile.

# Executive Summary

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

The EICV7 cross-sectional survey is designed to represent the Rwanda's current household-based population. 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 as well as urban and rural areas and selected with probability proportional to size (PPS) approach using the number of households as the measure of size.

A sample of 1,674 EAs were 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. 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 nine 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 the monitoring of progress on poverty reduction programs and the evaluation of various different policies as outlined in the second National Strategy for Transformation (NST2), the 2030 Sustainable Development Goals (SDGs) as well as the Vision 2050.

This report presents Rwanda's second national Multidimensional Poverty Index (MPI) which is based on EICV7 data. The analysis of Rwanda MPI used four dimensions with corresponding 13 indicators:

- Education dimension with two indicators (school attendance and years of schooling),
- Health dimension with two indicators (access to health facilities and health insurance)
- Basic services dimension with five indicators (electricity, improved drinking water, improved sanitation, garbage disposal and source of cooking fuel),
- Living standards with four indicators (housing materials, overcrowding, asset ownership and subsistence agriculture).

In the MPI, each of the four dimensions is given an equal weight of 1/4. However, the values of the component indicators differ depending on the number of indicators within each dimension. Each of 13 indicators has deprivation Cut-off, which allows to measure the Uncensored Headcount Ratios. To be identified as multidimensional poor, a person must be deprived in one out of three (33.3%) of the weighted indicators. Additionally, the censored Headcount Ratios indicate the specific indicators in which poor people experience deprivation.

The main measurement of MPI indicators are:

## Uncensored and Censored Headcount Ratios

The uncensored headcount ratio of an indicator represents the proportion of people deprived in that particular indicator, regardless of their poverty status. In 2023/24, the highest deprivations were most pronounced in cooking fuel (78.1%), housing materials (62.2%), and improved drinking water (47%), reflecting significant challenges in basic living conditions and livelihood sources. In contrast, indicators such as school attendance (4.5%) and improved sanitation (5%) show minimal deprivation. The censored headcount ratio narrow the focus to the population that is multidimensional poor and deprived in that indicator, revealing a smaller proportion of people deprived across all indicators, with cooking fuel (29.2%), housing materials (28.1%), and asset ownership (20.4%) showing highest levels of deprivation among the poor. The disparity between uncensored and censored headcount ratios underscores the multidimensional nature of poverty

and the need for targeted interventions to address specific vulnerabilities.

## Incidence of poverty (H), Intensity of poverty (A) and poverty Index (M0) at National level, by area of residence and province

The incidence of multidimensional poverty (H), or the proportion of the population experiencing multiple deprivations, is at 30.5% at the national level in Rwanda, with significant disparities between urban and rural areas. Urban areas report a poverty incidence of 15%, while rural areas experience a much higher rate of 37%, highlighting the rural-urban disparities. Among provinces, the City of Kigali has the lowest poverty incidence at 12.4%, whereas the Southern Province (35.2%), Eastern Province (34.4%), and Western Province (33.5%) report the highest levels of multidimensional poverty. The Northern Province stands at 29%, reflecting a moderate incidence. These findings emphasize the need for region-specific policies to address persistent poverty, especially in rural and high-incidence provinces.

The intensity of multidimensional poverty (A), or the proportion of the population experiencing multiple deprivations, is 45% at the national level in Rwanda. This indicates that poor individuals, on average, face nearly half of the weighted deprivations considered. The intensity is slightly higher in rural areas (45%) compared to urban areas (44%), reflecting marginal differences. Among provinces, the Eastern Province records highest intensity at 45.5%, followed by the Southern Province (45%) and Western Province (45%), while the City of Kigali (43%) and the Northern Province (43%) have the lowest intensity levels.

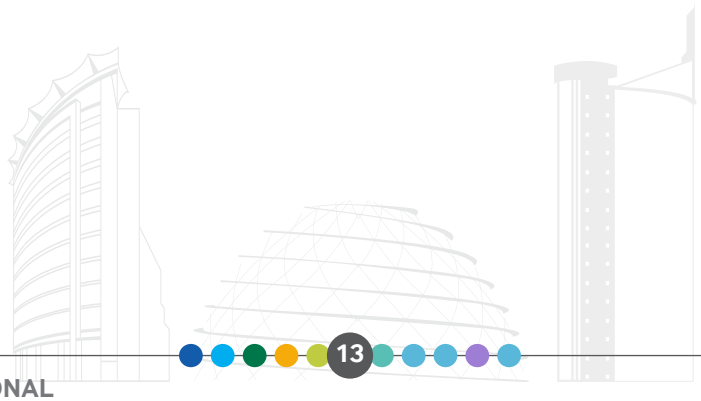
The adjusted multidimensional deprivation headcount (M0) in Rwanda is 0.136 at the national level, indicating that 14% of the population is both multidimensionally poor and experiences significant intensity of deprivation. The City of Kigali and the urban areas record the lowest deprivation levels at 0.053 and 0.065 respectively, reflecting improved living conditions compared to rural areas (0.164). Among provinces, the Southern Province (0.158) and Eastern Province (0.157) have the highest levels of deprivation, while the Western Province has a slightly lower rate at 0.149, and the Northern Province record the lowest deprivation levels at 0.123 below the national average. These results underscore the persistent rural-urban disparities and highlight the need for region specific interventions to reduce multidimensional poverty in high-deprivation areas.

## Incidence of poverty (H), Intensity (A) and MPI (Mo) by quintile

The analysis of multidimensional poverty by quintile reveals stark disparities across different consumption levels. The incidence of poverty (H) is highest among the poorest quintile (Q1) at 30.5%, gradually declining to just 7% in the wealthiest quintile (Q5). This trend reflects the strong correlation between poverty and consumption levels. The intensity of poverty which measures the average proportion of deprivations experienced by the poor remains relatively consistent across all quintiles, ranging from 46.3% in Q1 to 42.2% in Q5, suggesting that once individuals are poor, they experience similar depths of deprivation, regardless of their consumption level. The multidimensional poverty index (MPI), which combines both incidence and intensity, is highest in Q1 at 0.253 and lowest in Q5 at 0.118, demonstrating the concentrated nature of multidimensional poverty among the poorest households. These findings emphasize the necessity for targeted interventions to address poverty in the most vulnerable quintiles while ensuring equitable development across all consumption levels.

## Contribution of each indicator to the MPI at national level

The percent contribution of each indicator to the Multidimensional Poverty Index (MPI) at the national level highlights the areas driving poverty in Rwanda. The findings demonstrate that cooking fuel (15%) and housing materials (14.4%) constitute the most significant contributors. These are followed closely by access to healthcare services (10.5%) and electricity (9.5%). Improved drinking water (9%) and health insurance (9%) also contribute substantially to overall poverty. Other indicators such as asset ownership (7.8%), years of schooling (8%) and garbage disposal (7%) play moderate roles, while school attendance (1.2%) and sanitation (2.1%) show the lowest contributions. The findings highlight the need for strategic policy interventions targeting the major contributors, particularly in areas such as energy, housing, and access to healthcare services, to effectively reduce multidimensional poverty nationwide.



# 1 Overview of the Rwandan's multidimensional poverty measurement

The Government of Rwanda has developed comprehensive strategies to guide national development, including the long-term Vision 2050 and the short-term National Strategy for Transformation (NST-1), now succeeded by NST-2. These frameworks aim to transform Rwanda into a middle-income country, by reducing poverty among Rwandans, improving living standards, and ensuring sustainable development through sectoral strategic plans and action plans. The strategies emphasize the importance of investing in infrastructure and social services while recognizing poverty as a multidimensional issue, encompassing not only monetary deprivation but also deficit in health, education, and access to essential services. Acknowledging the imbalance between economic growth and social progress, the government is committed to implementing policies that improve socioeconomic indicators and address these disparities. Toward this agenda, the government has shown a strong commitment to monitor and analyze the living conditions of households and individuals through periodic integrated Household Living Condition Surveys (EICV).

Since the first EICV in 2000/01, Rwanda has measured monetary poverty using an expenditure-based approach. The National Institute of Statistics of Rwanda (NISR) first included the social dimensions and indicators to measure multidimensional poverty in EICV5 (2016/2017). Building on this approach, NISR will again incorporate these social dimensions and indicators in EICV7 (2023/2024) to evaluate the Multidimensional Poverty Index (MPI). This chapter examines Rwanda's MPI by tracing the history of poverty measurement in the country, describing the research context, and emphasizing the importance of capturing the complexity of poverty through diverse indicators. The findings aim to equip policymakers with actionable insights to reduce poverty and achieve sustainable development.

## History of poverty measurement in Rwanda

The EICV provides detailed information on monetary poverty, measured through household consumption expenditures, along with complementary socioeconomic data that facilitates the analysis of changes in household living conditions. According to EICV reports, Rwanda's poverty measurement methodology relies on the estimated food component of the consumption poverty line. This is defined as the cost of a food basket that provides a minimum daily energy intake of 2,400 kcal per adult, reflecting the calories based on the extreme poverty line.

The consumption-based absolute poverty measure adjusts household consumption to an adult equivalent scale, considering the recommended nutritional requirements. The total poverty line, commonly referred to as the "poverty line," is determined by adding a non-food allowance to the food component. A household and its members are classified as poor if their per capita consumption expenditure falls below the consumption poverty line.

To ensure comparability over time, the poverty line is adjusted for inflation during each estimation cycle. This adjustment facilitates tracking poverty trends, evaluating the impact of policies and programs on poverty incidence, and comparison of findings with earlier surveys.

While consumption provides a robust measurement of poverty, a well-designed framework, multidimensional poverty indices offer advantage of better reflecting human well-being. Recognizing this, the Government of Rwanda, through the NISR, introduced multidimensional poverty analysis in the EICV 2016/17. This initiative served to complete the monetary poverty measurements with social multidimensional poverty, and second, to reflect human well-being better than resource-based approaches.

## Objectives of the analysis

The Rwanda Multidimensional Poverty Index (MPI) analysis aims to generate reliable estimates that enable improvements in social indicators, reduction in poverty characteristics, and advancement of both national and international development goals. The MPI also aims to provide a holistic view of poverty by examining household deprivations across multiple dimensions of well-being, including health, education, access to basic services, and living standards, rather than just focusing on income or consumption expenditure alone. This would guide the Rwandan government and other stakeholders to design targeted programs and policies. Additionally, the MPI serves as a tool for monitoring and evaluation interventions, enabling stakeholders to address disparities between areas of residence and provinces and allocate resources, and prioritize the most vulnerable populations.

Rwanda's MPI plays critical role in governance by facilitating policy coordination, monitoring progress, and adjusting strategies to accelerate poverty reduction. Furthermore, it establishes a baseline for tracking multidimensional poverty over time and assessing the effectiveness of integrated policies and programs. By comparing results with data from the EICV surveys (2010/11, 2013/14, 2016/17 and 2023/24), the analysis provides a clear picture of progress and highlights areas necessitating further intervention. This evidence-based approach ensures that policies remain data-driven and aligned with the needs of the poor.

The MPI also guides private sector and NGO interventions, enabling them to identify areas of focus beyond economic aspects to include social dimensions of poverty.

Additionally, it supports Rwanda's progress toward the Sustainable Development Goals (SDGs) by promoting integrated policy approaches that leverage synergies across sectors. Such alignment with the SDGs ensures the cost-effectiveness and impact of interventions, thereby accelerating progress toward sustainable development objectives.

Finally, the MPI complements Rwanda's consumption poverty measure, providing a multidimensional perspective to evaluate poverty reduction efforts comprehensively. This dual approach is essential for understanding whether recent declines in consumption poverty have been accompanied by reductions in multidimensional poverty. By serving as both a policy tool and a benchmark for progress, Rwanda's MPI contributes to equitable and sustainable development while enhancing the effecacy of poverty reduction strategies.

# 2 Methodology and EICV data

This chapter presents an overview of the data collection and analysis processes used to derive multidimensional poverty indicators within the Rwandan context. Initially, poverty in Rwanda was assessed exclusively using a consumption-based approach, as evidenced in EICV1. However, starting with EICV5, the National Institute of Statistics of Rwanda (NISR) incorporated multidimensional poverty analysis, which integrates social dimensions and indicators to measure poverty. This multidimensional approach complements the monetary poverty methodology and aligns with Sustainable Development Goal (SDG) 1.2.2, which emphasizes reducing poverty in all its dimensions. Additionally, this chapter details the development and adaptation of the Alkire-Foster measurement framework to Rwanda's national MPI context.

## 2.1 Alkire Foster methodology

The Multidimensional Poverty Index (MPI), methodology was developed by Sabina Alkire and James Foster. First introduced in 2010 by Alkire and Santos, the MPI was designed to provide a comprehensive measure of poverty that goes beyond income, capturing deprivations in multiple dimensions such as education, health, and living standards. The methodology is rooted in the Alkire-Foster approach, which was further refined in subsequent publications, including Alkire et Al. (2015). The MPI provides a more nuanced understanding of poverty, empowering policymakers to design targeted interventions that address the complex, multifaceted nature of deprivation.

### 2.1.1 Computing the Multidimensional Poverty Index: Adjusted Headcount Ratio

The MPI computation consists of two key stages: identification and aggregation.

In the identification stage, deprivation scores are calculated for each individual, followed by the censoring of the scores to determine the multidimensionally poor based on specified cutoff. The aggregation stage involves computing two partial indices: the headcount ratio and intensity- whose product yields the MPI. Each of these concepts is explained in detail in following paragraphs.

#### B. Identifying the Poor

According to the Alkire and Foster (AF) methodology, identifying the poor relies on two levels of deprivation cutoffs: within-indicator and across-indicators, referred to as the dual-cutoff approach. The within-indicator cutoff, or first-order cutoff, is used to calculate the deprivation score, while the across-indicators cutoff, or second-order cutoff, determines who qualifies as multidimensionally poor. These concepts are explained in detail in the following sections.

#### i. Deprivation Score

Each household member is assessed as either deprived (denoted by 1) or not deprived (denoted by 0) in each indicator, based on their performance relative to the first-order cutoffs for those indicators.

For instance, consider a 17-year-old individual, referred to as A, with only 3 years of schooling. The first order cutoff for the years of schooling indicator requires that individuals aged 12 or older must have completed at least six years of schooling. Since individual A does not meet this requirement, they are marked as deprived in this indicator and assigned a score of 1. In contrast, individual B, a 12-year-old who has completed six years of schooling, meets the cutoff and therefore receives a score of 0 for this indicator. This process is applied consistently across all indicators until both individuals, A and B, have scores for each one.

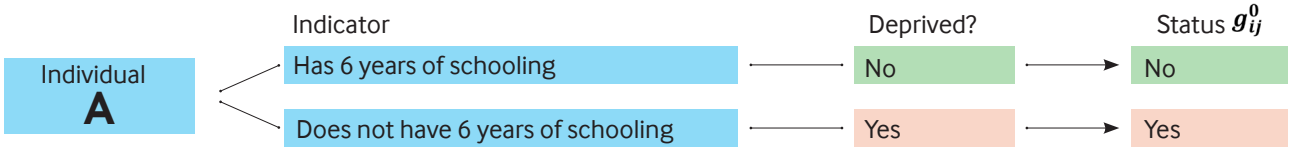
## Deprivation Status

If the achievement of an individual $i$ in indicator $j$ is represented as $x_{ij}$, the first order cutoff for indicator $j$ is denoted as $z_j$, and the deprivation status of the individual in that indicator is denoted as $g^0_{ij}$, then:

$$g^0_{ij} = \begin{cases} 1 \ if \ x_{ij} < z_j & (deprived), \\ 0 \ if \ x_{ij} \geq z_j & (not \ deprived) \end{cases} \qquad for \ all \ i = 1, 2 \ldots n \ and \ j = 1, 2 \ldots d$$

## Example: Deprivation Status

Finding $g^0_{ij}$ for indivdual **A**




The next step involves calculating the counting vector, also known as the deprivation score, for each individual. The deprivation score is determined by aggregating the weighted deprivation statuses across all indicators for the given individual.

Building upon the previous example, individual A, who is deprived in the years of schooling indicator, has a weighted status for this indicator calculated as 1 (representing deprivation) multiplied by 1/6 (the weight assigned to the years of schooling indicator). Therefore, A's weighted status for this indicator equals 1/6, or approximately 0.167. Conversely, individual B, who is not deprived in this indicator, receives a weighted status of 0. This process is applied to all indicators. Finally, the weighted scores for each indicator are summed for each individual to calculate their overall deprivation score.

## Counting Vector and Deprivation Score

The counting vector for the individual $i$ up to the $j$ -th indicator, also known as the deprivation score, is calculated as the sum of the status of individual $i$ in each indicator $g^0_{ij}$ multiplied by the weight $w_j$ assigned to that indicator.

The deprivation score (or weighted deprivation) for individual $i$ can therefore be expressed as:

$$c_i = \sum_{j=1}^{d} w_j \, . \, g^0_{ij}$$

Where:

$c_i$ is the deprivation score for individual $i$,

$g^0_{ij}$ is the status of individual $i$ in indicator $j$ (1 if deprived, 0 if not),

$w_j$ is the weight assigned to indicator $j$

$d$ is the total number of indicators.

Since the weight structure follows the AF methodology, the sum of relative weights of all the indicators equals 1. There, we have:

$$\sum_{j=1}^{d} w_j = 1$$

**Example: Calculating the deprivation score for individual A**

| Indicator | Deprived? | Status ($g^0_{ij}$) | | Weights | Score ($w_j . g^0_{ij}$) |
|---|---|---|---|---|---|
| Years of schooling | Yes | 1 | × | 1/6 | 0.16 |
| School attendance | Yes | 0 | × | 1/6 | 0 |
| Health Insurance | Yes | 1 | × | 1/9 | 0.11 |
| Access to healthcare | Yes | 1 | × | 1/9 | 0.11 |
| Electricity | No | 0 | × | 1/9 | 0 |
| Drinking water | Yes | 1 | × | 1/9 | 0.11 |
| Sanitation | No | 0 | × | 1/9 | 0 |
| Bank account | No | 0 | × | 1/9 | 0 |
| | | Deprivation Score ($c_i$) | | | 0.49 |

## ii. Poverty cutoff

The second order cutoff ($k$), as defined in the AF methodology, represents the poverty cutoff that marks the minimum deprivation score required to identify individuals as multidimensionally poor. Individuals with deprivation scores equal to or greater than the second order cutoff k are classified as multidimensionally poor.

For example, the second-order cutoff is set at 0.33 (33%), individual A with a deprivation score of 0.49 is considered multidimensionally poor. Likewise, if individual B has a deprivation score of 0.28, they will not be considered multidimensionally poor, despite having a non-zero deprivation score.

At this point, the true potential of the AF methodology becomes evident. The union method of multidimensional poverty identification classifies an individual as poor if they are deprived in any single indicator, often resulting in overestimation. Conversely, the intersection method identifies an individual as poor if they are deprived in all indicators, leading to underestimation. Neither approach offers sufficient insight for policymakers. The AF methodology, through its dual-cutoff approach, offers a balanced and realistic middle ground for estimating poverty.

**Applying the Poverty Cut-off**

The identification function for multidimensional poverty is denoted by $p$. This function $p$ depends on an individual's deprivation status ($x_i$) relative to the within-indicator cutoffs ($Z$) and the across-indicators cutoff ($k$). It can therefore be represented as:

$$p_k(x_i; z) = 1 \; if \; c_i \geq k \; and \; p_k(x_i; z) = 0 \; \; Otherwise$$

Therefore, the function $p$ considers an individual $i$ as multidimensionally poor when their deprivation score ($c_i$) is greater than or equal to the second-order cutoff ($k$).

**Example: Applying the Poverty-Cutoff**

| | Deprivation Score ($c_i$) | Higher than 0.33? ($c_i \geq k$) | is MPI poor? | Score $p_k(x_i; z)$ |
|---|---|---|---|---|
| Individual A | 0.49 | Yes | Yes | 1 |
| Individual B | 0.28 | No | No | 0 |

### iii. Censoring

After calculating the deprivation scores for all individuals, any score below the second order cutoff is replaced with 0. This process, referred to as censoring, is a key step in multidimensional poverty estimation.

Following our example, the deprivation score of individuals A (0.52) will remain unaltered the score of individuals B (0.20) will be replaced with 0.

**Censored Deprivation Score**

Censored scores are represented as $c_i(k)$ to distinguish them from original deprivation score ($c_i$). After the censoring process:

- *If* $c_i < k$, *then* $c_i(k) = 0$
- *If* $c_i \geq k$, *then* $c_i(k) = c_i$

In simple terms:

If $c_i(k) > 0$, the individual is multidimensionally poor, and $c_i(k)$ represents their deprivation score.

If $c_i(k) = 0$, the individual is classified as non-poor

**Example: Applying the Poverty-Cutoff**

| | Deprivation Score ($c_i$) | Higher than 0.33? ($c_i \geq k$) | is MPI poor? | Censored Deprivation Score $c_i(k)$ |
|---|---|---|---|---|
| Individual A | 0.49 | Yes | Yes | 0.52 |
| Individual B | 0.28 | No | No | 0 |

### B. Headcount Ratio

Once multidimensionally poor individuals have been identified, the next step is to calculate their proportion in the total population. This measure, known as the headcount ratio of multidimensional poverty or incidence of poverty, represents the first of two partial indices used to compute the MPI. The headcount ratio, denoted by H, answer the question: **How many are poor?**

**Headcount ratio**

$$H = \frac{q}{n}$$

Where $q$ is the total number of multidimensionally poor individuals identified in the previous steps (i.e, the total number of individuals for whom $p_k(x_i; z)=1$ ) and $n$ is the total population.

### i. Uncensored (Raw) Headcount Ratios

While the headcount ratio (H) reflects the proportion of multidimensionally poor individuals in the population, the uncensored headcount ratio represents the proportion of individuals who are deprived in indicator , regardless of whether they are multidimensionally poor or not.

**Uncensored Headcount Ratio**

The uncensored headcount ratio may be presented as

$$h_j = \frac{1}{n}\sum_{i=1}^{n} g_{ij}^0$$

Where $\sum_{i=1}^{n} g_{ij}^0$ denotes the sum of the deprivation status up to the $i^{th}$ individual for the indicator $j$ and n is the total population. In this report, the uncensored headcount ratios have been reported as percentages ($h_j$ x 100)

## ii. Censored Headcount Ratio

The censored headcount ratio, denoted as $h_j(k)$, represents the proportion of the population that meets two criteria: (1) they are identified as multidimensionally poor and (2) they are deprived in indicator $j$.

**Censored Headcount Ratio**

The censored headcount ratio be presented as:

$$h_j(k) = \frac{1}{n}\sum_{i=1}^{n} g_{ij}^0(k)$$

Where $n$ is the number of individuals in the population, and $g_{ij}^0(k)$ is the censored deprivation score of individual $i$ in indicator $j$ using a second order cutoff ($k$) of 33.3 percent. In this report, the censored headcount ratios have been reported as percentages ($h_j(k)$x100).

## iii. Intensity of poverty

The intensity of poverty, denoted as **A**, represents the average proportion of deprivations experienced by individuals identified as multidimensionally poor. Formally, it reflects the average deprivation score among all those identified as multidimensionally poor. **A** serve as the second partial index in the construction of the Multidimensional Poverty Index (MPI), addressing the question, **"How poor are the poor?"**

**Intensity of poverty**

Intensity of poverty is represented as:

$$A = \frac{1}{q}\sum_{i=1}^{q} c_i(k)$$

Where $C_i(k)$ is the censored deprivation score (i.e., deprivation score of multidimensionally poor individuals) up to the $i^{th}$ individual and $q$ is the number of multidimensionally poor individuals.

## iv. The Multidimensional Poverty Index (MPI)

The MPI reflects both the incidence and intensity of multidimensional poverty. The index (denoted by Mo) is the product of the two partial indices – the headcount ratio (H) and intensity (A) of multidimensional poverty.

**The Multidimensional Poverty Index (MPI)**

The MPI is represented as: $M_0 = H \times A$

or

$$H \times A = \frac{q}{n} \times \frac{1}{q}\sum_{i=1}^{q} c_i(k) = \frac{1}{n}\sum_{i=1}^{n} c_i(k) = \frac{1}{n}\sum_{i=1}^{n}\sum_{j=1}^{d} w_j g_{ij}^0(k)$$

The MPI is therefore the share of weighted deprivation faced by multidimensionally poor individuals divided by the total population. Hence the MPI is known as the adjusted headcount ratio.

## Example: Calculating the Headcount Ratio, Intensity and MPI for 3 Households

| Indicator | HH1 (6 members) Status ($g^0_{ij}$) | HH2 (4 members) Status ($g^0_{ij}$) | HH3 (3 Members) Status ($g^0_{ij}$) | | Weights | | HH1 (6 members) Score ($w_j g^0_{ij}$) | HH2 (4 members) Score ($w_j g^0_{ij}$) | HH3 (3 Members) Score ($w_j g^0_{ij}$) |
|---|---|---|---|---|---|---|---|---|---|
| Years of schooling | 1 | 1 | 0 | × | 1/6 | = | 0.17 | 0.17 | 0 |
| School attendance | 0 | 0 | 1 | × | 1/6 | = | 0 | 0 | 0.17 |
| Health Insurance | 1 | 1 | 0 | × | 1/6 | = | 0.17 | 0.17 | 0 |
| Access to healthcare | 1 | 1 | 0 | × | 1/6 | = | 0.17 | 0.17 | 0 |
| Electricity | 0 | 0 | 0 | × | 1/12 | = | 0 | 0 | 0 |
| Drinking water | 1 | 0 | 0 | × | 1/12 | = | 0.08 | 0 | 0.08 |
| Sanitation | 1 | 0 | 1 | × | 1/12 | = | 0.08 | 0 | 0 |
| Bank account | 0 | 1 | 0 | × | 1/12 | = | 0 | 0.08 | 0 |
| Deprivation Score ($c_i$) | | | | | | | 0.67 | 0.59 | 0.25 |
| Censored Deprivation Score ($c_i(k)$) | | | | | | | 0.67 | 0.59 | 0 |

Household members from HH1 and HH2 are multidimensional poor at k=0.33

| Headcount ratio | | Intensity of Poverty | | MPI |
|---|---|---|---|---|
| The Headcount ratio is calculated by dividing the total number of multidimensional poor individuals **(q)** by the total population **(n).**<br>**q**=6 + 4 & **n**= 6 + 4 + 3<br>$H = \frac{q}{n} = \frac{6+4}{6+4+3} = 0.76$<br>From this example, 76% of individuals are multidimensional poor. | X | The intensity of multidimensional poverty is calculated by summing the weighted deprivation scores of all the MPI poor divided the total number of MPI poor.<br>$A = \frac{1}{q}\sum_{i=1}^{q} c_i(k) = \frac{0.67*6+0.59*4}{6+4} = 0.638$<br>On average, an MPI individual is deprived in 63.8% of weighted indicators. | = | The MPI score is the product of the headcount ratio and intensity. It is also known as the adjusted headcount ratio.<br>**MPI= H x A** = 0.76 x 0.638 = **0.484** |

## 2.1 Alkire Foster methodology applied to Rwanda National MPI analysis

Rwanda's national MPI applies a set of dimensions, indicators, and cut-offs that reflect its priorities as expressed in the national plans, and that can be implemented using the EICV7 (2023/2024) datasets. This section describes the choice of these parameters.

### 2.2.1 Unit of identification and analysis

The unit of identification refers to the entity classified as poor or non-poor, usually either individuals or households. Rwanda's MPI adopts the household as its unit of identification, whereby: the household members' information is considered together, and deprivation scores are assigned similarly to all household members. This acknowledges intra-household caring and sharing – for example, educated household members assisting others with reading, and multiple household members being affected by someone's severe health conditions. In addition, it allows the measure to include indicators that are specific to certain age groups (for instance, school attendance or years of schooling).

The unit of analysis — referring to the level at which results are reported and analyzed — remains the individual. Accordingly, the headcount ratio reflects the percentage of individuals identified as poor, rather than the percentage of households. This approach ensures that the measure captures poverty at the level of each individual, providing a more nuanced understanding of how deprivations affect individuals within households.

### 2.2.2 Dimensions and Indicators

The Rwanda National Multidimensional Poverty Index (MPI) comprises four dimensions: Education, Health, Basic Services and the Living Standards.

The indicator choice reflects Rwanda's context and political priorities, as well as data availability in the EICV7 (2023/24) dataset. In total, 13 indicators were used in this national index, instead of the 10 used for the global measure. Two indicators are under the Education dimension (school attendance and years of schooling), two indicators are under Health (access to healthcare services and health insurance), five indicators under Basic Services (electricity for lighting, improved drinking water, improved sanitation, garbage disposal and source of cooking fuel), and four under Living standards (housing materials, overcrowding, assets ownership, and subsistence farming).

Each of the four dimensions is given an equal weight of 1/4 in the MPI. A person needs to be deprived in 1/3 (33.3%) of weighted indicators to be identified as multidimensional poor.

### 2.2.3 Deprivations weights

In the Rwanda MPI analysis, weights are allocated across the four dimensions: Education, health, basic services, and living standards, is assigned an equal weight of 1/4 of the total weight. Within the Education Dimension, the two indicators: school attendance and years of schooling are equally weighted at 1/8 each. As already mentioned, the Health Dimension includes two indicators: access to healthcare services and health insurance with each receiving an equal weight of 1/8. The Basic Services indicators include electricity for lighting, safe drinking water, improved sanitation, garbage disposal and source of cooking fuel are each weighted at 1/20. Finally, the Living Standards dimension include four indicators: housing materials, overcrowding, assets ownership, and subsistence farming each weighted equally at 1/16. Collectively, these weights sum to 1 or 100%, ensuring a balanced approach to measuring multidimensional poverty.

### 2.2.4. Cut-offs

The Alkire and Foster measurement framework, thresholds determine whether an individual is identified as multidimensionally poor. This involves two main steps: (a) setting a dimension-specific cutoff (deprivation cutoff) – where an individual is deemed deprived in a specific indicator if their achievement falls below the set cutoff; and (b) establishing a cross-indicator cutoff (or poverty cutoff) – where an individual is classified as multidimensionally poor if the weighted sum of their deprivations meets or exceeds the poverty cutoff.

For Rwanda's MPI, the poverty cutoff is chosen to be at 1/3 of the weighted indicators, meaning an individual is classified as multidimensionally poor if they are deprived in 33.3% or more of the weighted indicators. The results section further explores the poverty figures under alternative poverty cutoffs to provide a comprehensive understanding of multidimensional poverty in Rwanda.

***Rwanda's national MPI – Dimensions, indicators, deprivations cutoffs and weights***

| Dimension | Indicator | Deprivation cutoff (Deprived if,.....) | Indicator weight | Dimension weight |
|---|---|---|---|---|
| Education | School Attendance | At least one school-aged child (6-11 years) in the household is not attending school | 1/8 | 1/4 |
| | Years of Schooling | No eligible (12 years and more) household member that has completed at least 6 years of schooling | 1/8 | |
| Health | Access to health services | Household lives more than 3km away from healthcare facilities (Health post, Health Centre and District hospital) | 1/8 | 1/4 |
| | Health Insurance | There is at least one household member with no health insurance | 1/8 | |
| Basic service | Electricity | Household does not have improved electricity (not connected to electricity from REG or other electricity distributors and solar panel) | 1/20 | 1/4 |
| | Drinking Water | HH does not have access to improved drinking water (no piped water into dwelling, piped water into yard/plot, public tab/standpipe, tube well/ borehole, protected well / spring, or rainwater, or source of water is more than 500m in rural areas and more than 200m in urban areas.) | 1/20 | |
| | Sanitation | Household does not have improved sanitation (no flush toilet or pit latrine with slab) | 1/20 | |
| | Cooking fuel | The household cooks with solid fuel such as dung, wood, agriculture crops or shrubs, or coal (Charcoal will not be considered as deprivation in Rwandan context) | 1/20 | |
| | Garbage disposal | Household does not dispose garbage in publicly managed refuse area, rubbish collection service, or composting heap in own property. | 1/20 | |
| Living standards | Housing materials | The household has inadequate (natural or rudimentary) housing materials in any of the three components: floor, roof, and walls | 1/16 | 1/4 |
| | Assets | The household does not own more than one of the following assets: radio, TV, telephone, computer, bicycle, bike, motorbike or refrigerator and does own a car or truck. | 1/16 | |
| | Overcrowding | Household has more than 3 members per sleeping room. | 1/16 | |
| | Subsistence farming | Household is only engaged in subsistence agriculture and work as laborer in agriculture | 1/16 | |

*Source: Elaborated by NISR after consultation with stakeholders,*

## 2.3 Modifications to the MPI methodology for EICV7

The 7th round of the EICV-based MPI introduced key changes to enhance the accuracy of and relevance of poverty measurement in Rwanda. One major modification was the reduction of indicators from 14 to 13, with the elimination of the bank account indicator. This decision was made because future EICV rounds will no longer capture this, making it unsuitable for long-term comparisons. Additionally, the cooking fuel indicator was adjusted by reclassifying charcoal as non-deprivation, despite it not being a clean energy source. Charcoal remains the primary cooking fuel for most households, particularly prevalent among urban and wealthier households, meaning its classification as a deprivation factor no longer accurately reflects living standards.

Another notable adjustment was made to the asset indicator, which previously focused exclusively on communication assets. The new approach expands asset ownership to include a broader range of possessions, including mobility assets, in alignment with global standards. This modification acknowledges that, among communication assets such as mobile phone has become so widespread that has significantly weakened the effectiveness of communication assets as an indicator of deprivation. The school attendance and years of schooling indicators were also updated: the school attendance age range was adjusted from 7 -15 years to 6 – 11 years to reflect updated national policies. Similarly, the eligible population for the years of schooling changed from 15-60 years to those aged 12 years and above.

Additional refinements were made for housing and access to basic services. The housing materials indicator now consider three components -flooring, walls, and roofing- rather than only flooring, as in previous MPI measurements. Regarding electricity access, the classification of deprivation was refined: households relying on rechargeable batteries or phone lighting is now considered as deprived, while those using electricity from national or private distributors, as well as full solar panel systems, are classified as non-deprived. Furthermore, the overcrowding indicator was revised by lowering the deprivation threshold from more than four household members per sleeping room to more than three,

aligning with Sustainable Development Goals (SDG's) recommendations. Lastly, the poverty cutoff was adjusted from k= 40%, where individuals were classified as multidimensionally poor if deprived in more than 2/5 of the weighted indicators, to k = 33.3%, (now classifying individuals as multidimensionally poor if deprived in more than 1/3 of the weighted indicators). These modifications ensure that the MPI remains an accurate reflection of living conditions and evolving social-economic realities in Rwanda.

# 3 Main findings

This chapter provides the main results of the Rwanda Multidimensional Index (MPI) using EICV7(2023/24) as well as its partial indices; the incidence of poverty or the proportion of individual identified as multidimensional poor (H), the intensity of poverty or the average proportion of weighted indicators in which the poor are deprived in (A) and the overlaps of Multidimensional Poverty with Monetary Poverty in Rwanda. In addition, this chapter presents also disaggregated results by area of residence, by province and by quintile.

## 3.1 Rwanda uncensored and censored headcount ratios

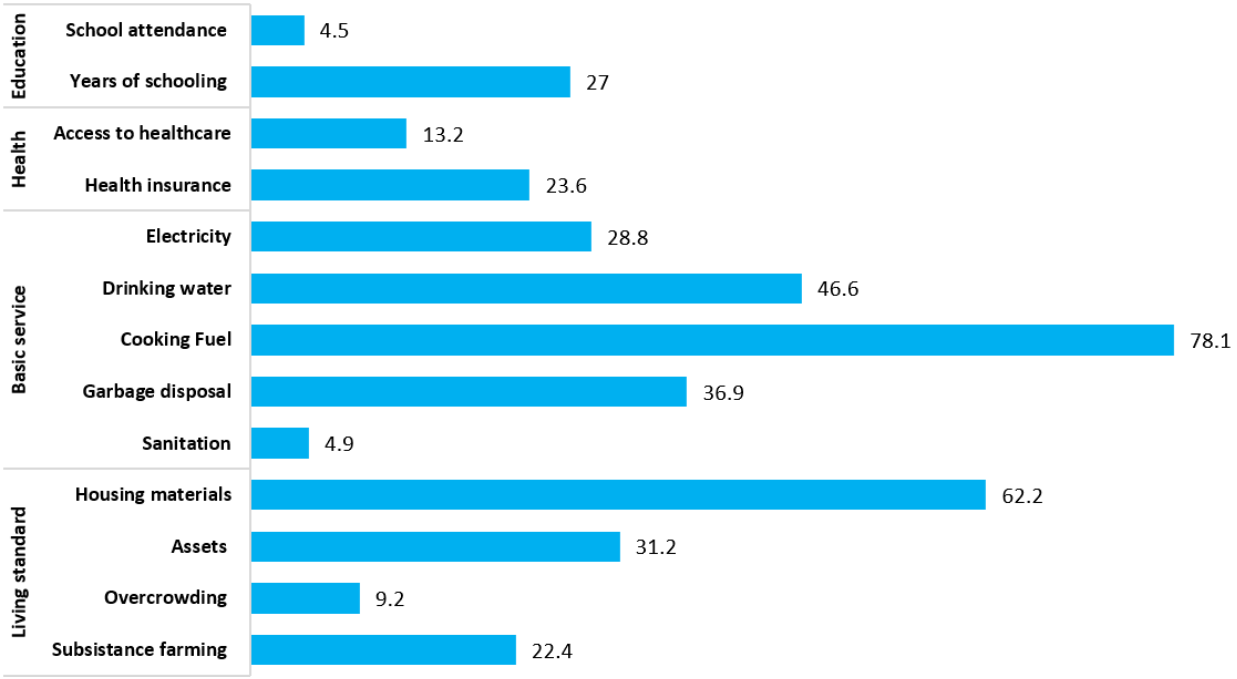
### 3.1.1 Uncensored headcount ratios for each indicator

The uncensored headcount ratio for each indicator represents the proportion of individuals deprived in that particular indicator, regardless of their poverty status. Figure 3.1 provides a comprehensive overview, offering critical insights into the country's poverty dynamics. It reveals pronounced disparities in access to essential services and resources. Notably, 78.1% of the population experiences deprivation in cooking fuel, highlighting a heavy reliance on traditional biomass for energy. Similarly, 62.2% are deprived in housing materials, indicating widespread inadequacies in housing quality, especially in rural areas. Additionally, 22.4% of individuals rely on subsistence farming, which limit economic diversification and increases vulnerability to external chocks.

Moderate levels of deprivation are observed in indicators related to basic services and infrastructure. For instance, 47% are deprived in access to improved drinking water within 500 meters in rural areas and 200 meters in urban areas, while 29% remain deprived of electricity access, highlighting persistent energy access gaps. Furthermore, 24% of individuals lack health insurance, limiting their access to affordable healthcare. Education related indicators present mixed results, with 27% experiencing deprivation in years of schooling, reflecting challenges in long-term educational attainment, while, only 4.5% are deprived in school attendance, indicating relatively strong efforts to ensure school enrollment. Additionally, deprivation in access to sanitation (5%) and overcrowding (9.2%) reflect significant progress in these domains but highlight the need for targeted interventions to achieve universal access to basic services.

These achievements are likely attributable to strategic policies and investments aimed at improving infrastructure and promoting access to essential services. However, these successes must be balanced with targeted action in areas with high deprivation rates, such as cooking fuel, housing materials, and drinking water, to ensure that improvements are equitably distributed. This holistic approach will be critical in reducing multidimensional poverty and achieving Rwanda's long-term development goals.

*Figure 3. 1: Uncensored headcounts ratios, proportion of people deprived in each indicator, 2023/24*




*Source: National Institute of Statistics of Rwanda, EICV7*

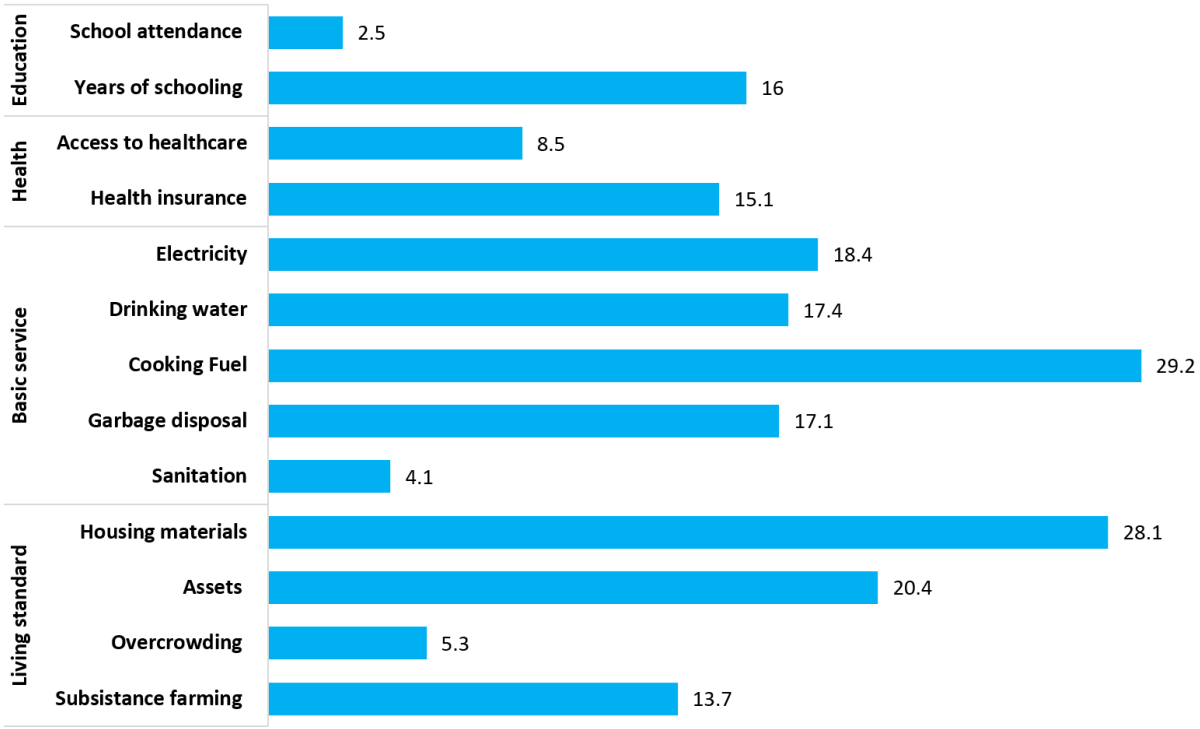
## Censored headcount ratios for each indicator at national level, urban/rural, province, and quintile

Figure 3.2 presents the censored headcount ratios, which detail the proportion of individuals identified as multidimensionally poor (with poverty cutoff of k=33.3%) and simultaneously deprived in each indicator. The data highlights that cooking fuel (29.2%) and housing materials (28.1%) exhibit the highest deprivation rates among those classified as MPI poor. This indicates that inadequate housing conditions and the reliance on inefficient cooking methods remain as critical challenges affecting the poor. Similarly, years of schooling (16%) represent a significant barrier to human capital development.

Indicators such as drinking water (17.4%) and health insurance (15.1%) demonstrate significant deprivation levels among MPI-poor individuals, highlighting gaps in basic infrastructure and health service access that directly impact the wellbeing of impoverished populations. Moreover, the prevalence of subsistence farming (14%) indicates that many MPI-poor households remain dependent on agriculture as their primary livelihood strategy. The data calls for targeted interventions to diversify income sources and address systematic barriers to social service.

Encouragingly, some indicators exhibit lower levels of deprivation among MPI poor, such as school attendance (2.5%), sanitation (4.1%), overcrowding (5.3%), and access to healthcare facilities (8.5%). These figures indicate that significant progress in ensuring access to healthcare, and education infrastructure in recent years. However, the persistence of higher deprivation levels in housing materials, cooking fuel, and education quality underscores the need for sustained, targeted effort to reduce multidimensional poverty in Rwanda. By addressing these critical dimensions, the country can further advance its social and economic development agenda.

***Figure 3. 2: Censored Headcount Ratios at indicators level (k = 33.3%) or proportion of people who are MPI poor and deprived in each indicator***




*Source: National Institute of Statistics of Rwanda, EICV7*

## 3.2. Incidence of multidimensional poverty (H)

This section shows the Rwanda Incidence of multidimensional poverty, or the proportion of people identified as multidimensional poor (H), using EICV7 (2023/24). As said earlier, a person needs to be deprived in 1/3 (33.3%) of weighted indicators to be identified as multidimensional poor.

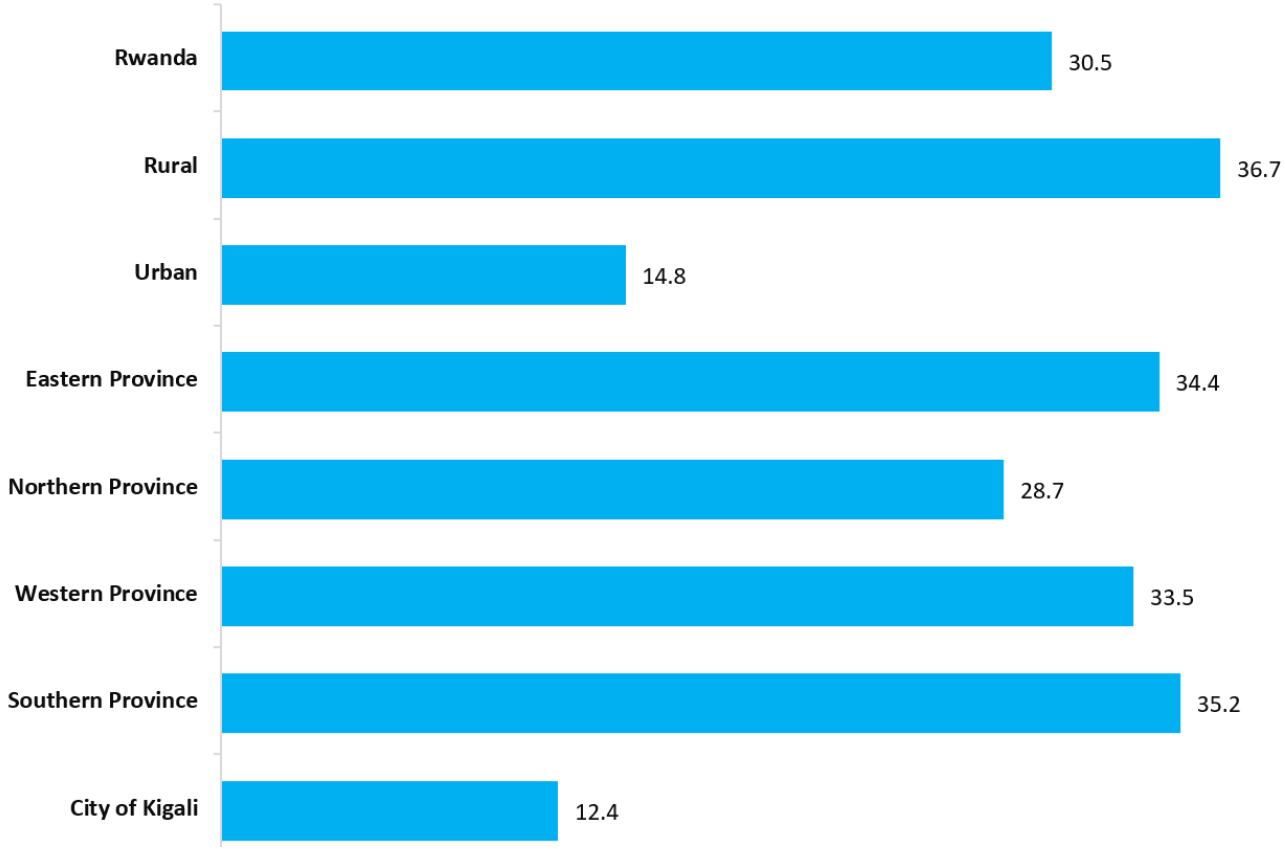
### 3.2.1. Incidence of Multidimensional Poverty at national, urban/rural, province

As indicated in figure 3.3, the incidence of multidimensional poverty (MPI) at national level, 30.5% of the population is multidimensionally poor. However, the distribution of MPI across urban and rural areas, as well as across provinces, reveals significant disparities, emphasizing the uneven distribution of poverty and the need for tailored interventions.

The incidence of poverty is significantly lower in urban areas (15%) compared to rural areas (37%). This gap reflects urban advantages in infrastructure, education, healthcare, and economic opportunities. Notably, the City of Kigali records the lowest poverty incidence at 12.4%, showcasing its status as Rwanda's economic hub with improved social services and livelihood opportunities.

Across provinces, Southern Province (35.2%) and the Eastern Province (34.4%) have the highest incidences of multidimensional poverty, followed by the Western Province (33.5%). In contrast, the Northern Province (29%) exhibits a lower incidence, potentially reflecting improved access to education and health services in recent years. The disparities underscore the importance of geographically targeted poverty alleviation strategies, particularly in high-poverty rural areas and provinces, to ensure equitable progress in mitigating multidimensional poverty.

*Figure 3. 3: Incidence of Multidimensional Poverty at national, urban/rural and province*




*Source: National Institute of Statistics of Rwanda, EICV7*

### 3.2.2 Incidence of Multidimensional Poverty by quintile

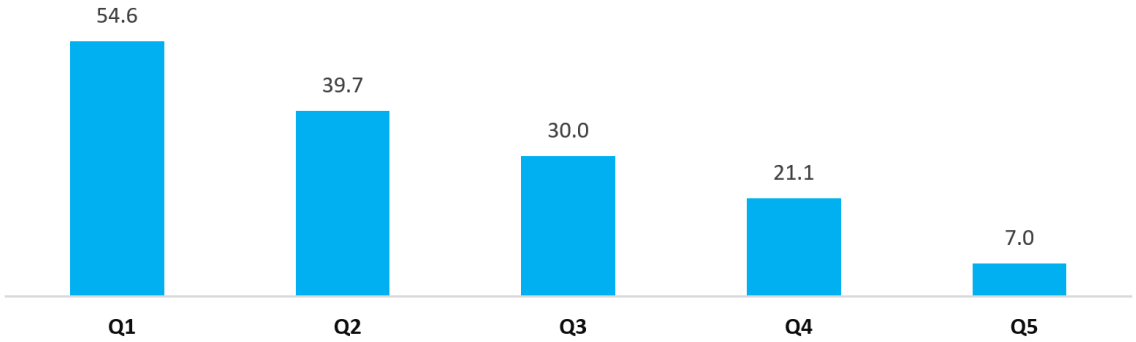
In addition, poverty is inversely proportional to wealth quintiles. As illustrated in figure 3.4, the incidence of multidimensional Poverty (MPI) across consumption quintiles, measured by real consumption per adult equivalent (AE), using a poverty cutoff k=33.3%. The results highlight the strong correlation between multidimensional poverty and household consumption levels, underscoring how lower consumption levels are associated with higher rates of deprivation.

The first quintile (Q1), representing the poorest households, exhibits the highest MPI incidence at 55% indicating that nearly half of individuals in the lowest consumption group are multidimensionally poor. These households face multiple and overlapping deprivations in education, health, access to basic services, and living standards. While the second quintile (Q2) shows a significant decline in MPI incidence (40%), deprivation remain considerable compared to Q1.

As consumption levels increase, the incidence of multidimensional poverty declines steadily. The third quintile (Q3) records an MPI incidence of 30%, while the fourth quintile (Q4) demonstrates a further reduction to 21.1%. Notably, the fifth quintile (Q5), which includes the wealthiest households, reports the lowest MPI incidence at 7%, indicating that nearly all households in this group experience minimal multidimensional deprivations.

This distribution underscores the strong association between consumption and multidimensional poverty. It highlights the need for policies aimed at improving livelihoods, particularly for the lowest quintiles, through targeted interventions such as access to education, healthcare, and improved living conditions to break the cycle of poverty.

***Figure 3. 4: Incidence of multidimensional poverty by Quintile (k = 33.3%)/Proportion of MPI Poor people by quintiles***




*Source: National Institute of Statistics of Rwanda, EICV7*

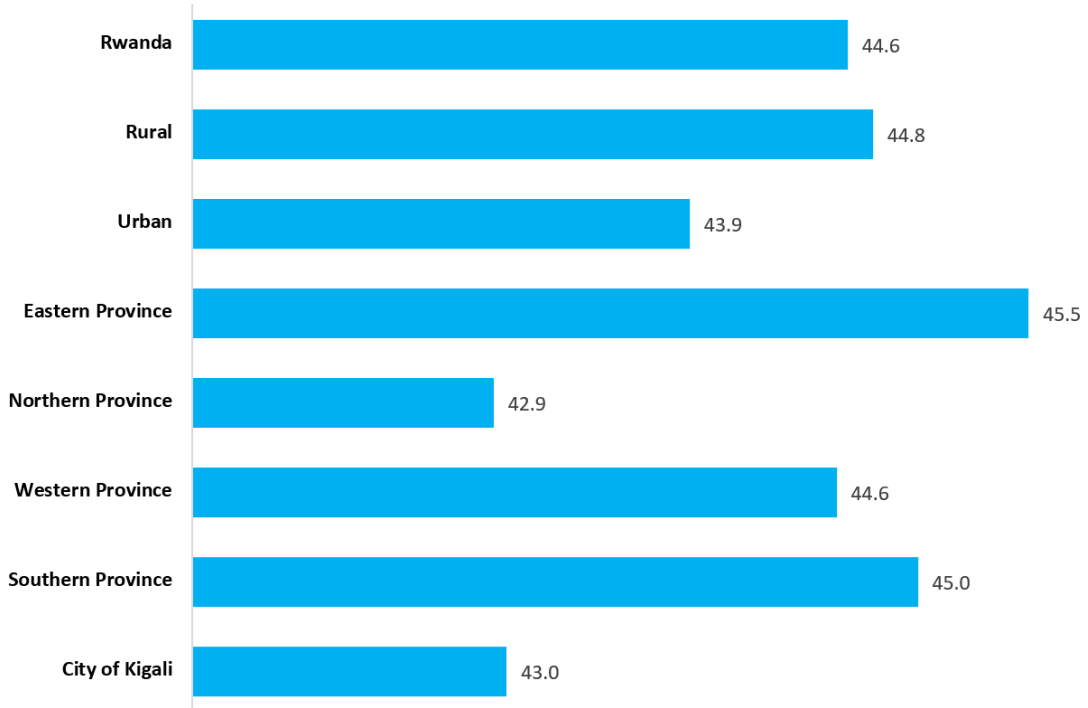
## 3.3 Intensity of people's poverty (A)

This section describes an examination of poverty intensity in Rwanda, measured as the average proportion of weighted deprivations experienced by multidimensionally poor individuals, across national, urban/rural, and provincial levels. The intensity of poverty reflects how deprived the poor are, on average, in multiple dimensions of wellbeing such as Education, Health, and Living standards.

### 3.3.1 Intensity of poverty at national, urban/rural and province

At the national level, the poverty intensity stands at 45%, indicating that, on average, multidimensionally poor individuals in Rwanda experience nearly half of all possible deprivations. The comparison between urban and rural areas reveals that, the poverty intensity in urban areas (44%) is slightly lower than in rural areas (45%), suggesting that the poor in rural areas experience a marginally higher degree of multidimensional deprivation.

***Figure 3. 5: Intensity of poverty at national level, urban/rural and province***




*Source: National Institute of Statistics of Rwanda, EICV7*

At the provincial level, the Eastern Province exhibits the highest poverty intensity at 45.5%, indicating that multidimensionally poor individuals in this region experience more severe deprivations compared to other provinces. The Western and Southern Provinces follow closely both at 45% respectively, while the City of Kigali records an intensity of 43%, which reflects a lower level of deprivation among its poor population. Most remarkably, the Northern Province registers the lowest poverty intensity at 43%, indicating that poor individuals in this region face comparatively fewer deprivations.

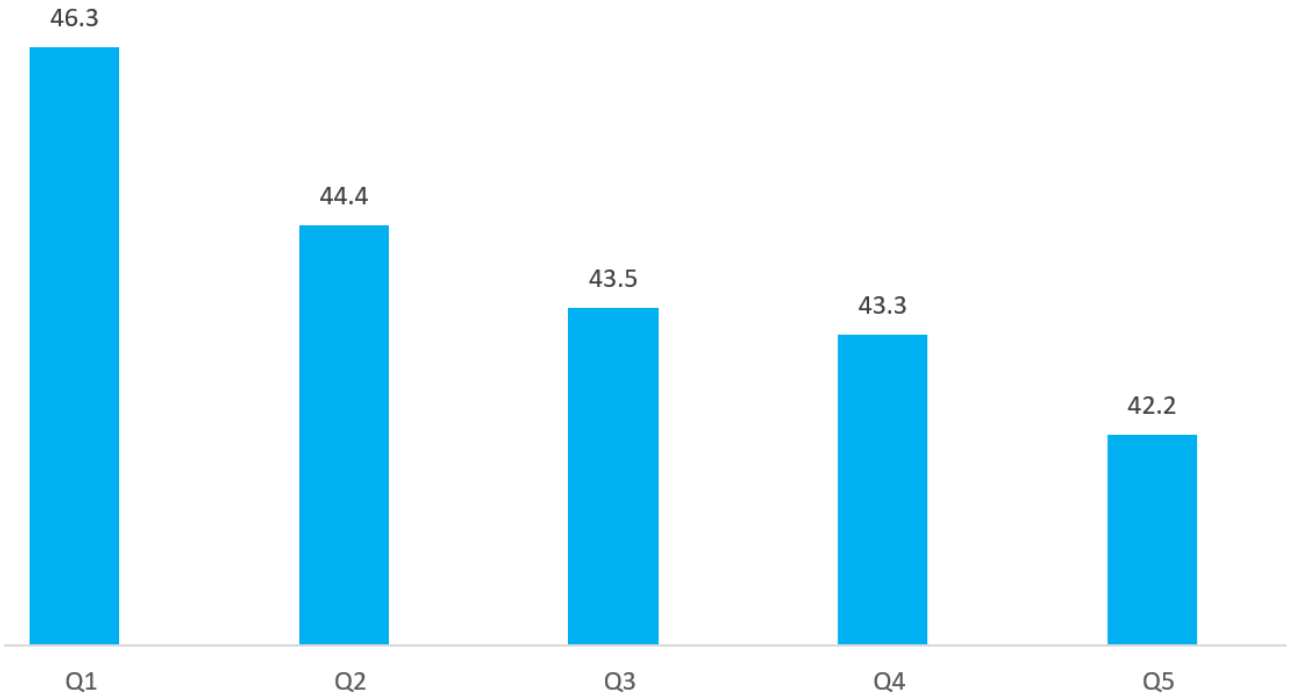
This distribution highlights that while the overall intensity of poverty does not vary significantly across regions, targeted interventions are necessary to address the specific deprivations experienced in rural areas and provinces with higher poverty intensity, such as the Eastern and Western provinces. Mitigating these disparities will require a multidimensional approach that prioritizes the most deprived regions and ensures sustainable poverty reduction across the country.

### 3.3.2 Intensity of poverty by quintile

Figure 3.6 further illustrates the intensity of poverty by quintiles of real consumption per adult equivalent (AE) in Rwanda. The intensity of poverty measures the average share of deprivations experienced by individuals classified as multidimensionally poor. Across all quintiles the intensity values are relatively high, ranging from 42.2% (Q5) to 46.3%(Q1), indicating that poor individuals in every income group experience multiple and significant deprivations.

The highest intensity of poverty is observed in the poorest quintile (Q1), where individuals face nearly half (46.3%) of the total weighted deprivations. This highlights the compounded nature of poverty among the poorest, reflecting their limited access to basic services and resources including education, healthcare, and adequate housing. However, even in the wealthiest quintile (Q5), the intensity remains substantial at 42.2%, demonstrating that multidimensional poverty persists beyond the poorest income groups. This points to overlapping deprivation affecting individuals across socioeconomic strata.

***Figure 3. 6: Intensity of poverty by Quintile (K-value=33.3%)***




*Source: National Institute of Statistics of Rwanda, EICV7*

## 3.4 Multidimensional Poverty Index (MPI)

In the context of Rwanda's MPI report, the Multidimensional Poverty Index (MPI) is a comprehensive measure of poverty, calculated as the product of the headcount ratio (H) – which represents the proportion of the population identified as multidimensionally poor – and the intensity of poverty (A) – which reflects the average share of deprivations experienced by the poor. Unlike traditional monetary methods, the MPI captures the progress at both levels, making it the preferred indicator for assessing poverty trends over time. This dual focus provides a more complete and accurate picture of poverty dynamics. For instance, there are scenarios where only one component – such as the headcount ratio – shows improvement while the intensity of poverty remains unchanged, or where intensity declines without corresponding to headcount reduction. In such cases, exclusive reliance on the headcount ratio might produce misleading conclusions about poverty trends, whereas the MPI would reflect a reduction due to improvement in the deprivation intensity. Consequently, the MPI offers a more holistic and reliable approach for both tracking and addressing poverty.

### 3.4.1 MPI poverty Index at national, urban/rural and province

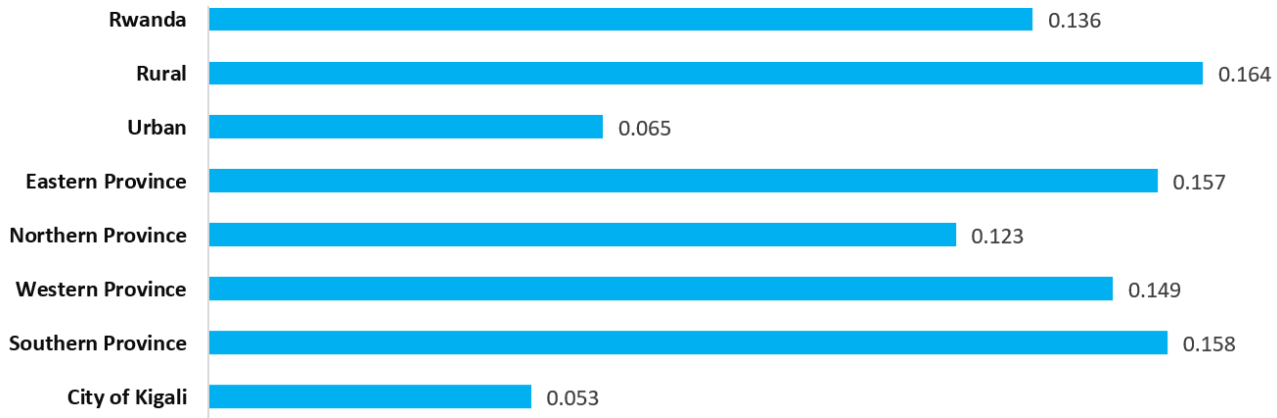
The adjusted multidimensional deprivation headcount (M0) reflects the proportion of the population experiencing multidimensional poverty, adjusted by the intensity of deprivations. Nationally, Rwanda's MPI score stands at 0.136 for 2023/24, indicating that multidimensionally poor individuals experienced 13.6% of the total possible deprivations in all measured indicators.

At the residential level, rural areas exhibit a higher MPI value of 0.164 compared to urban areas, which report a much lower M0 of 0.065. This reflects the persistent gap between rural and urban populations in terms of multidimensional poverty. Urban areas, particularly those in Kigali City, benefit from better infrastructure, access to services, and economic opportunities, which reduce both the incidence to essential services, livelihoods, and basic infrastructure.

Provincially, the Southern and Eastern provinces register the highest MPI score of 0.158 and 0.157 respectively, indicating the most severe multidimensional poverty in the country. The Western province follows closely with an MPI score of 0.149, while the Northern province reports slightly lower deprivation with a score of 0.123. The City of Kigali, as expected, registers the lowest MPI score of 0.053, underscoring its status as Rwanda's economic hub and its stronger capacity to deliver basic needs.

Overall, this figure underscore the need for region-specific and rural-focused policies to address disparities and reduce the multidimensional poverty in Rwanda. Prioritizing investments in underserved regions and addressing specific indicators of deprivation will be critical for achieving equitable development across the country.

***Figure 3. 7: Multidimensional Poverty Index at national, urban/rural and province***




*Source: National Institute of Statistics of Rwanda, EICV7*

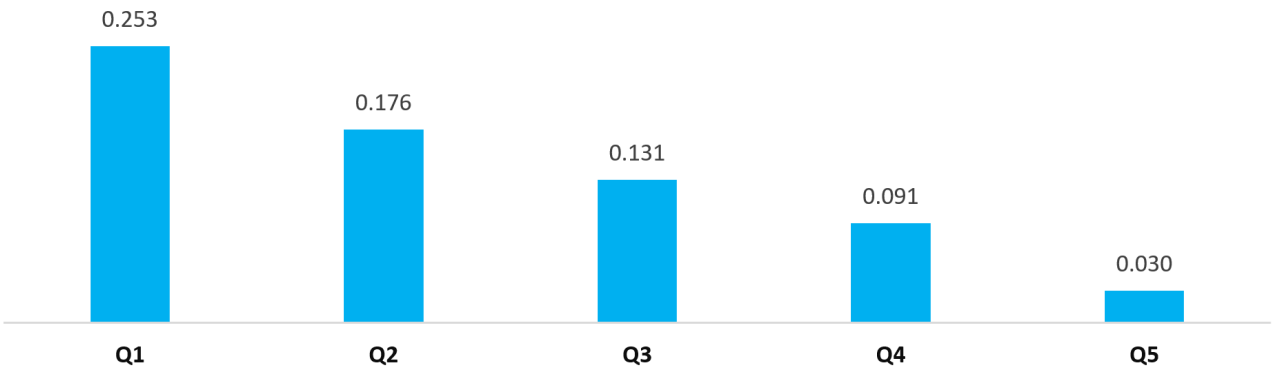
### 3.4.2 Multidimensional Poverty Index by quintile

The graph provides a breakdown of Rwanda's Multidimensional Poverty Index (MPI) by quintiles, with a cut-off value of 33.3%. It reveals a pronounced disparity in multidimensional poverty across the wealth spectrum. The poorest quintile (Q1) exhibits the highest MPI score of 0.253, indicating significant deprivation in multiple dimensions including education, health, basic services and living standards. In contrast, the wealthiest quintile (Q5) reports an MPI score of only 0.030, demonstrating minimal multidimensional poverty among this group.

The MPI values show clear, consistent decline from Q1 to Q5, highlighting that wealthier households face fewer deprivations compared to poorer households. For example, the Q2's MPI (0.176) is nearly half that of Q1, while Q3 (0.131) represents a further substantial reduction. By Q4, the MPI decreases to 0.091, suggesting that while some deprivation persists, their intensity is significantly less severe compared to lower quintiles. This trend underscores the strong correlation between socio-economic status and multidimensional poverty.

These results emphasize the need for targeted intervention to address disparities in multidimensional poverty. Priority should be given to supporting the poorest quintile (Q1) through improvement in education, healthcare access, and living standards. Additionally, as the MPI decreases more gradually in the middle quintiles, focused policies can ensure that these groups do not fall into deeper poverty. Overall, the MPI analysis provides valuable insights for crafting effective, equity driven poverty alleviation strategies in Rwanda.

***Figure 3.8: MPI by Quintile (k –value = 33.3%)/ Multi-dimensional Poverty Index by quintile***




*Source: National Institute of Statistics of Rwanda, EICV7*

## 3.5 Contribution of each indicator to the MPI at national, urban/rural and province

To gain a deeper understanding of multidimensional poverty, it is essential to examine the percentage contribution of each of the 13 indicators to the overall multidimensional poverty not only at the national level but also across rural and urban areas, as well as by province in Rwanda.

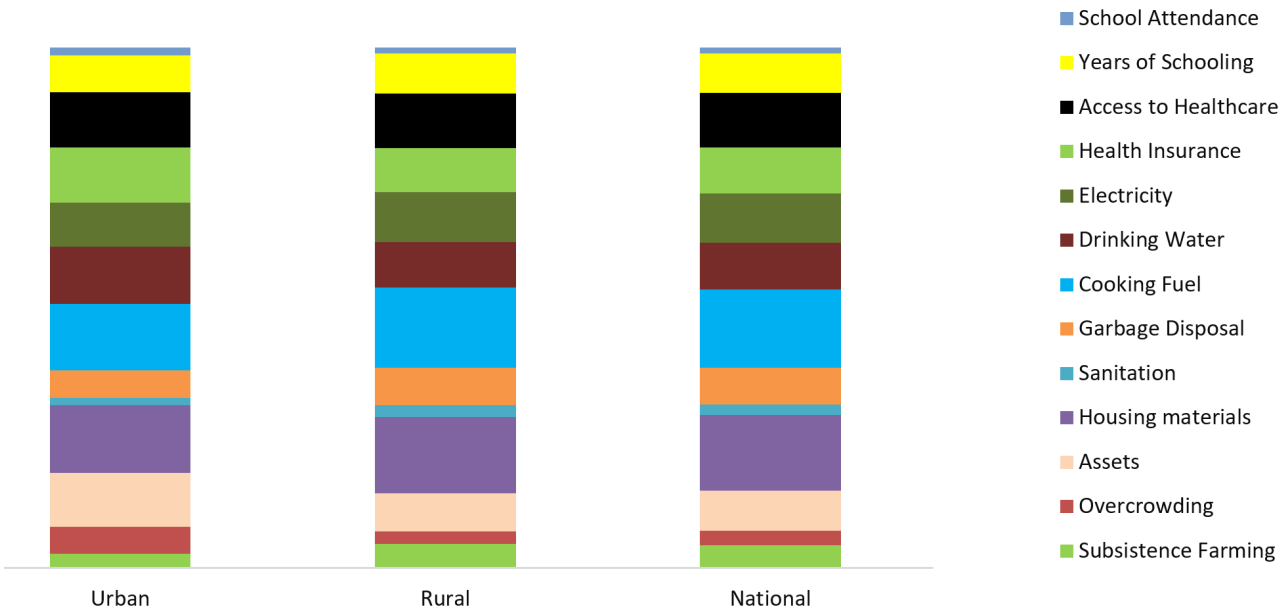
Initially, cooking fuel, housing materials, and distance to healthcare facilities emerge as most significant contributors to MPI across all geographic levels. Cooking fuel contributes the most to MPI, with 15% nationally, 15.4% in rural areas and 13% in urban areas, indicating the persistent reliance on traditional cooking methods, particularly among rural households. Housing materials follow closely, accounting for 15% in rural areas, 13.1% in urban areas, and 14.4% nationally. Distance to healthcare facilities contributes 10.5% nationally. Additionally, electricity and access to improved drinking water also contribute moderately to 9.5% and 8.9% respectively.

Secondly, disparities in indicator contributions between urban and rural areas reveal distinct poverty profiles. For instance, garbage disposal (7.3% in rural areas vs. 5.2% in urban areas) and sanitation (2.2% in rural areas vs. 1.4% in urban areas) contribute more to the Multidimensional Poverty Index (MPI) in rural areas, reflecting greater challenges in waste management and hygiene infrastructure. Conversely, assets (10.4% in urban areas vs 7.4% in rural areas) and health insurance (11% in urban areas vs 8.5% in rural areas) have a higher contribution in urban areas.

Lastly, education-related indicators, such as years of schooling (8% in rural areas vs. 7.1% in urban areas) and school attendance (1.2% nationally,1.1% in rural areas, and 1.5% in urban areas) emphasize the role of human capital development in poverty alleviation. Although school attendance has a relatively low contribution to MPI, it reflects improved access to education compared to other poverty dimensions.

The variations in indicator contributions emphasize the need for targeted interventions that address specific vulnerabilities in rural and urban areas. Policies focused on improving infrastructure, promoting clean energy, and enhancing access to education and healthcare would effectivelyreduce multidimensional poverty and foster sustainable development.

***Figure 3.9: Percentage contribution of each indicator to the MPI at national and urban/rural***

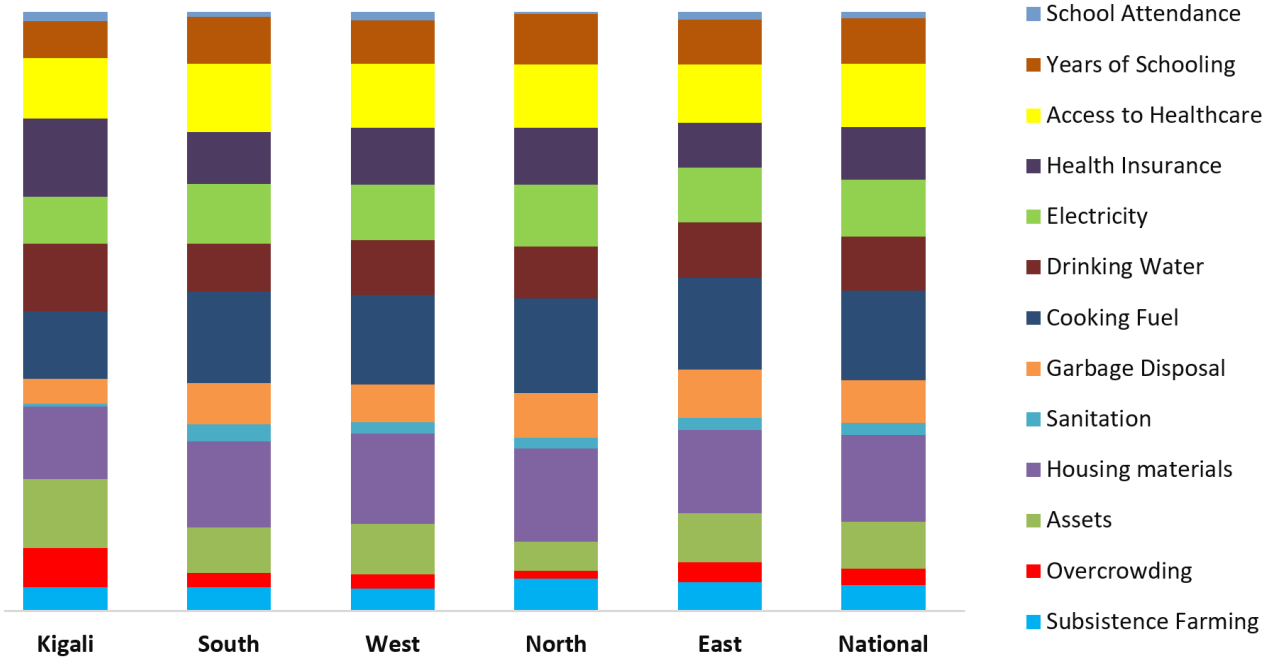



*Source: National Institute of Statistics of Rwanda, EICV7*

The Graphs provides insights into the percentage contribution of various indicators to the Multidimensional Poverty Index (MPI) at the provincial level in Rwanda. Notable disparities are evident among the provinces, reflecting variation in living conditions and development priorities. Housing materials and cooking fuel emerge as the most significant contributors nationwide, with housing materials accounting for 16% in the Northern Province and cooking fuel reaching its highest contribution in the Northern (16%) and Southern (15.3%) provinces. These figures indicate persistent reliance on inadequate housing and traditional cooking methods, particularly in rural areas.

Additionally, infrastructure-related indicators, such as distance to healthcare facilities and drinking water access, remain significant contributors across all provinces. The Southern Province shows the highest contribution (11.4%) for healthcare access. Garbage disposal demonstrates considerable variation, with the Eastern Province reporting the highest contribution (8.1%). Conversely, overcrowding is more pressing issue in Kigali (7%) compared to other provinces, reflecting higher population density and housing constraints in urban areas. Similarly, drinking water contributes significantly to MPI in Kigali (11.3%), pointing to urban water supply issues despite better overall infrastructure.

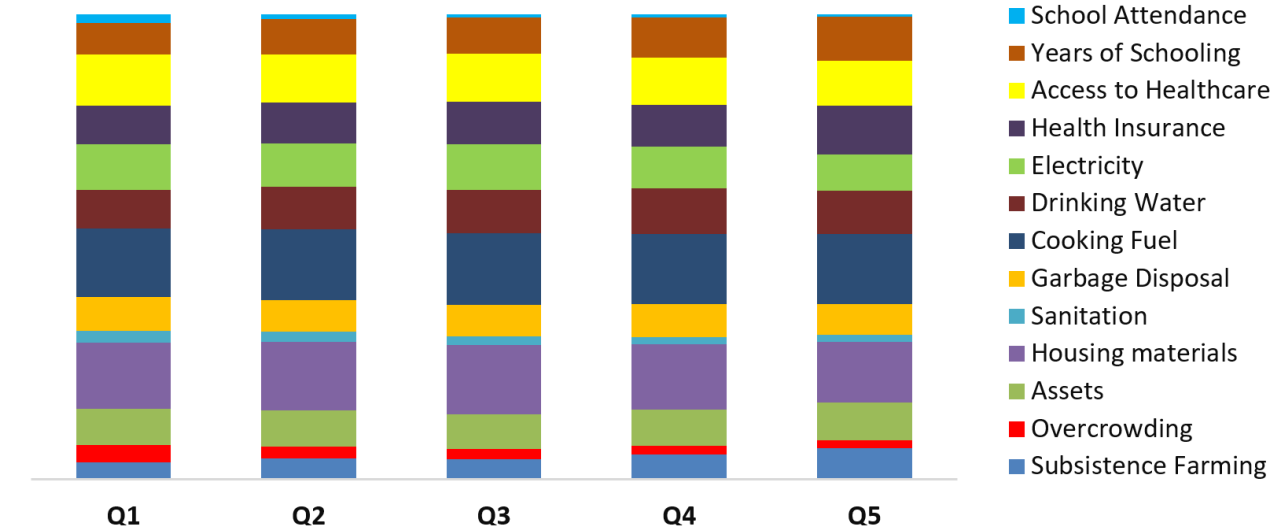
***Figure 3. 10: Percentage contribution of each indicator to the MPI at province level***




*Source: National Institute of Statistics of Rwanda, EICV7*

Figure 3.11 provides an analysis of Rwanda's Multidimensional Poverty Index (MPI) across quintiles (Q1 to Q5), revealing disparities in key indicators. The data highlights notable trends, with indicators such as housing materials, cooking fuel, and distance to health care facilities consistently contributing significantly to MPI across all quintiles. Notably, the contribution of school attendance decreases from 1.8% in the poorest quintile (Q1) to 0.5% in the wealthiest (Q5), reflecting improved access to education among wealthier groups. Similarly, sanitation, and overcrowding indicators maintain relatively low contributions to MPI across all quintiles, with Q5 showing the lowest deprivation. Electricity, drinking water, sanitation, and subsistence farming exhibit moderate contributions, though gaps persist. However, subsistence farming and health insurance, key livelihood measures, show increasing prevalence in wealthiest quintile (Q5), indicating its persistence even among relatively wealthier households. Overall, the graph highlights persistent inequalities across wealth groups, emphasizing the need for targeted interventions to address multidimensional poverty.

***Figure 3. 11: Percentage contribution of each indicator to the MPI by quintile***




*Source: National Institute of Statistics of Rwanda, EICV7*

## 3.6 Overlaps of multidimensional poverty and the monetary poverty

Understanding the overlap between monetary poverty and multidimensional poverty (MPI) is crucial for developing comprehensive poverty reduction strategies. While monetary poverty focuses on income-based deprivation, MPI captures broader aspects of well-being, such as access to education, healthcare, and basic living standards. Analyzing their intersection provides valuable insights into the extent which income poverty aligns with broader deprivations, helping policymakers to design targeted interventions. The following analysis examines the extent of this overlap in Rwanda, highlighting the proportion of individuals who experience one or both forms of poverty.

The table 3.1 shows that 14.3% of the population experiences both monetary poor and MPI poverty, meaning they suffer from income poverty as well as significant deprivation in education, health, and living conditions. Additionally, 16.2% of the population is MPI poor but not monetarily poor, indicating that despite having sufficient income, these individuals face substantial non-monetary deprivations. Conversely, 13.1% of the population is monetarily poor but not MPI poor, suggesting that while their income falls below the poverty threshold, they do not suffer from severe multidimensional deprivation. The largest share, 56.4%, is neither monetary nor MPI poor, reflecting adequate income and access to essential services. With an overall MPI poverty rate of 30.5% and monetary poverty rate of 27.4%, these findings emphasize the importance of using both income-based and multidimensional measures to accurately assess and address poverty in Rwanda.

***Table 3.1: Overlaps of Multidimensional Poverty with Monetary Poverty in Rwanda***

| National level | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-Poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 56.4 | 13.1 | 69.5 |
| | Poor | 16.2 | 14.3 | 30.5 |
| | Total | 72.6 | 27.4 | 100 |

*Source: National Institute of Statistics of Rwanda, EICV7*

The table 3.2 below illustrates the intersection of monetary poverty and multidimensional poverty (MPI) in both urban and rural areas of Rwanda, highlighting the extent of their overlap. In urban areas, 2.6% of the population is monetarily poor but not MPI poor, while 2.1% experiences both monetary and MPI poverty, indicating a relatively limited overlap. Additionally, 2.1% is MPI poor but not monetarily poor, suggesting that some individuals face deprivations in education, health or living conditions despite having sufficient income. The urban MPI poverty rate stands at 4.2%, while monetary poverty affects 4.7% of the urban population, reinforcing the need for targeted policies that address non-income dimensions of deprivation.

Conversely, rural areas show a higher incidence of combined monetary and MPI poverty, demonstrating a significant overlap between income-based and multidimensional deprivation. Furthermore, 14.1% of the rural population is MPI poor but not monetarily poor, reinforcing the importance of considering factors beyond income in poverty alleviation efforts. Meanwhile, 10.5% is monetarily poor but not MPI poor, suggesting that some low-income individuals still access essential services. The overall MPI poverty rate in rural areas is 26.3%, compared to a monetary poverty rate of 23%. These findings highlight urban-rural disparities, emphasizing the need for comprehensive poverty reduction strategies that combine income support with improvements in education, healthcare, and living conditions, particularly in rural areas, where multidimensional deprivation is more pronounced.

***Table 3. 2: Overlaps of Multidimensional Poverty with Monetary Poverty by area of residence***

| Urban | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 21.5 | 2.6 | 24.1 |
| | Poor | 2.1 | 2.1 | 4.2 |
| | Total | 23.6 | 4.7 | 28.4 |

| Rural | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 34.9 | 10.5 | 45.4 |
| | Poor | 14.1 | 12.1 | 26.3 |
| | Total | 49.0 | 22.63 | 71.6 |

*Source: National Institute of Statistics of Rwanda, EICV7*

As presented in table 3.3, the proportion of individuals experiencing both multidimensional and monetary poverty is lowest in the City of Kigali (0.7%), followed by the Northern Province (1.3%). In contrast, the highest proportion was observed in the Western Province (4.11%). However, the incidence of combined multidimensional and monetary poverty is relatively similar across the Western (4.11%), Southern (4.09%), and Eastern (4.10%) provinces, each at approximately 4.1%, with the exception of the city of Kigali and Northern Province.

***Table 3. 3: Overlaps of Multidimensional Poverty with Monetary Poverty by province***

| City of Kigali | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 11.5 | 0.6 | 12.0 |
| | Poor | 1.1 | 0.7 | 1.7 |
| | Total | 12.5 | 1.2 | 13.7 |

| Southern | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 10.8 | 3.7 | 14.5 |
| | Poor | 3.8 | 4.1 | 7.9 |
| | Total | 14.6 | 7.8 | 22.4 |

| Western | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 10.4 | 3.9 | 14.3 |
| | Poor | 3.1 | 4.1 | 7.2 |
| | Total | 13.4 | 8.0 | 21.4 |

| Northern | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 9.2 | 1.8 | 11.0 |
| | Poor | 3.2 | 1.3 | 4.4 |
| | Total | 12.4 | 3.1 | 15.5 |

| Eastern | | | | |
|---|---|---|---|---|
| | | Monetary poor with National poverty line | | |
| | | Non-poor | Poor | Total |
| MPI poor With k=33.3% | Non-poor | 14.6 | 3.1 | 17.7 |
| | Poor | 5.2 | 4.1 | 9.3 |
| | Total | 19.8 | 7.2 | 27.0 |

*Source: National Institute of Statistics of Rwanda, EICV7*

# 4 Conclusion and Recommendations

The analysis of Rwanda's Multidimensional Poverty Index (MPI) underscores the critical need to look beyond monetary poverty to understand the multiple deprivations affecting people's lives. The country's progress in multidimensional poverty reduction demonstrates strong alignment with the Sustainable Development Goals (SDGs), particularly SDG Goal 1 (No poverty), which calls for the eradication of all forms of poverty.

The findings indicate that poverty is not solely an issue of limited income but is deeply rooted in factors such as housing conditions, access to clean energy, education, healthcare services, and basic infrastructure. Notably, 29.2% of MPI poor individuals lack access to clean cooking fuel, while 28.1% are deprived in housing materials, and 20.4% face deprivation in asset ownership. These three indicators alone contribute significantly to Rwanda's national MPI – 15%, 14.4%, and 7.8% respectively- highlighting key areas for targeted intervention.

Overtime, Rwanda has made significant progress in poverty reduction, as evidenced by the national MPI incidence standing at 30.5% and intensity of 45%, reflecting improvements across various sectors. However, the persistence of poverty, especially in rural areas and certain provinces, highlights the necessity for continued and targeted interventions to ensure inclusive growth. For instance, the MPI in rural areas (0.164) is more than double that of urban areas (0.065). Similarly, the City of Kigali reports the lowest MPI (0.053), while the Southern, Eastern, and Western Provinces report significantly higher levels (0.158, 0.157, and 0.149 respectively)

While some indicators such as school attendance (2.5%) and sanitation (4.1%) demonstrate relatively low deprivation levels, others, including access to drinking water (17.4%), garbage disposal (17.1%), and health insurance (15%) remain persistent concerns. The data highlights the need for environmentally sustainable solutions, such as promoting clean energy and waste management systems, alongside enhanced accessibility to essential services like healthcare and education. For instance, access to healthcare facilities contributes 10.5% to the national MPI, underscoring the role of the health sector in poverty reduction efforts.

Moving forward, Rwanda should continue to integrate multidimensional poverty measures into national planning and policymaking to ensure sustained progress. Strengthening social protection programs, promoting economic diversification, and ensuring equitable resource distribution will be vital for reducing poverty across all dimensions. Additionally, fostering regional and global collaboration on poverty reduction strategies can provide valuable insights and best practices. By adopting a data-driven, inclusive and multisectoral approach, Rwanda can accelerate progress toward meaningful poverty reduction, ensuring that no one is left behind in its journey toward sustainable development.

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# ANNEXES

## A: Multidimensional poverty maps

***Figure A. 1: Incidence of multidimensional poverty (H) by province, 2023/24***

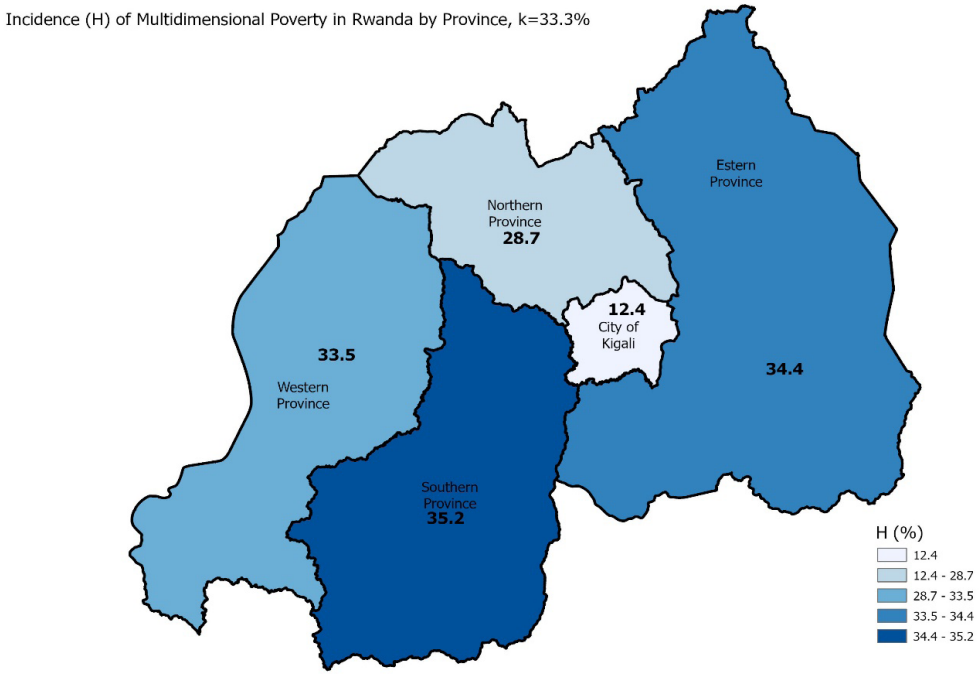



***Figure A. 2: Intensity of multidimensional poverty (A) by province, 2023/24***

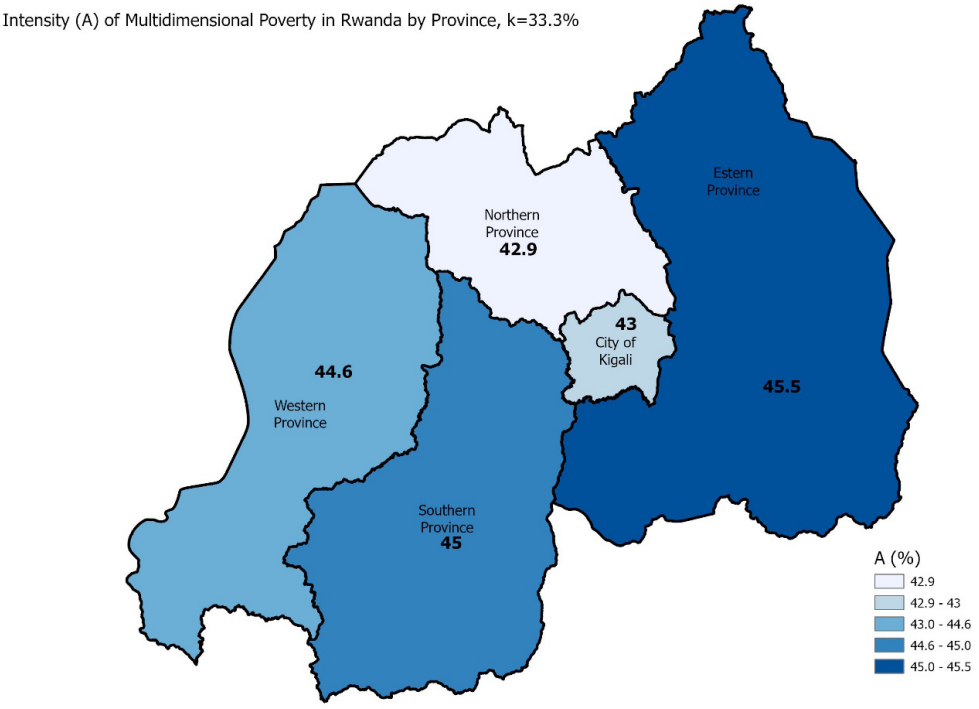
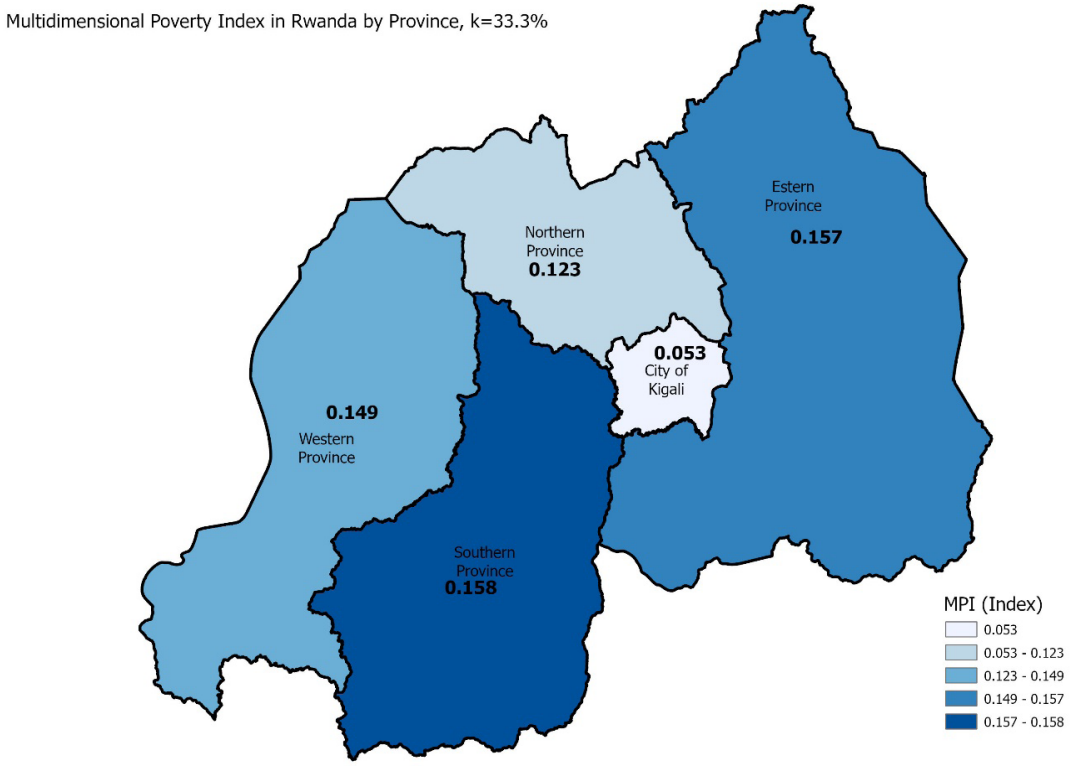


***Figure A. 3: Multidimensional Poverty Index (MPI) by province, 2023/24***



## B: Tables

### *Table B.1: Uncensored Headcount Ratios (k=33.3%)*

Proportion of poor people deprived in each indicator.

| Dimension | Indicator | EICV7 |
|---|---|---|
| Education | School Attendance | 4.5 |
| | Years of Schooling | 27.0 |
| Health | Access to Health care | 13.2 |
| | Health Insurance | 23.6 |
| Basic Services | Electricity | 28.8 |
| | Drinking Water | 46.6 |
| | Cooking Fuel | 78.1 |
| | Garbage Disposal | 36.9 |
| | Sanitation | 4.9 |
| Living Standards | Housing materials | 62.2 |
| | Assets | 31.2 |
| | Overcrowding | 9.2 |
| | Subsistence Farming | 22.4 |

*Source: National Institute of Statistics of Rwanda, EICV7*

### *Table B.2: Censored Headcount Ratios (K=33.3%)*

Proportion of people who are MPI poor and deprived in each indicator at national level and urban/rural

| Dimension | Indicator | Urban | Rural | National |
|---|---|---|---|---|
| Education | School Attendance | 1.4 | 3.0 | 2.5 |
| | Years of Schooling | 6.8 | 19.9 | 16.0 |
| Health | Access to Health care | 2.5 | 10.9 | 8.5 |
| | Health Insurance | 9.6 | 17.3 | 15.1 |
| Basic Services | Electricity | 7.9 | 22.6 | 18.4 |
| | Drinking Water | 10.2 | 20.3 | 17.4 |
| | Cooking Fuel | 11.8 | 36.1 | 29.2 |
| | Garbage Disposal | 9.8 | 20.0 | 17.1 |
| | Sanitation | 1.3 | 5.2 | 4.1 |
| Living Standards | Housing materials | 12.1 | 34.4 | 28.1 |
| | Assets | 9.8 | 24.6 | 20.4 |
| | Overcrowding | 4.8 | 5.5 | 5.3 |
| | Subsistence Farming | 4.8 | 17.2 | 13.7 |

*Source: National Institute of Statistics of Rwanda, EICV7*

### *Table B.3: Censored Headcount Ratios, by province (k = 33.3%)*

Proportion of people who are MPI poor and deprived in each indicator by province

| Dimension | Indicator | City of Kigali | Southern | Western | Northern | Eastern | Total |
|---|---|---|---|---|---|---|---|
| Education | School Attendance | 1.2 | 2.4 | 3.6 | 0.8 | 3.6 | 2.5 |
| | Years of Schooling | 4.8 | 19.5 | 17.0 | 16.2 | 18.3 | 16.0 |
| Health | Access to Health care | 3.0 | 9.2 | 8.0 | 9.7 | 10.6 | 8.5 |
| | Health Insurance | 8.6 | 17.1 | 18.0 | 8.7 | 18.1 | 15.1 |
| Basic Services | Electricity | 5.8 | 22.5 | 19.8 | 18.5 | 20.3 | 18.4 |
| | Drinking Water | 8.4 | 18.2 | 19.7 | 15.5 | 20.6 | 17.4 |
| | Cooking Fuel | 8.4 | 34.8 | 31.8 | 28.3 | 33.7 | 29.2 |
| | Garbage Disposal | 9.7 | 19.7 | 20.2 | 16.9 | 16.5 | 17.1 |
| | Sanitation | 0.3 | 6.7 | 4.1 | 3.2 | 4.4 | 4.1 |
| Living Standards | Housing materials | 9.0 | 32.5 | 32.0 | 28.0 | 30.9 | 28.1 |
| | Assets | 7.5 | 26.0 | 22.7 | 19.0 | 21.3 | 20.4 |
| | Overcrowding | 4.9 | 5.4 | 5.1 | 2.3 | 7.4 | 5.3 |
| | Subsistence Farming | 3.1 | 15.5 | 13.4 | 13.4 | 17.9 | 13.7 |

*Source: National Institute of Statistics of Rwanda, EICV7*

### *Table B.4: Censored Headcount Ratios, by quintile (k = 33.3%)*

Proportion of people who are MPI poor and deprived in each indicator by quintile

| Dimension | Indicator | Q1 | Q2 | Q3 | Q4 | Q5 |
|---|---|---|---|---|---|---|
| Education | School Attendance | 7.7 | 2.9 | 1.4 | 1.0 | 0.2 |
| | Years of Schooling | 29.7 | 21.3 | 15.9 | 11.7 | 3.9 |
| Health | Access to Health care | 13.4 | 11.4 | 8.3 | 6.9 | 2.8 |
| | Health Insurance | 28.3 | 19.9 | 14.0 | 10.0 | 3.3 |
| Basic Services | Electricity | 35.6 | 23.6 | 18.2 | 11.6 | 3.2 |
| | Drinking Water | 30.1 | 22.8 | 17.8 | 12.5 | 3.9 |
| | Cooking Fuel | 53.3 | 38.5 | 28.7 | 19.5 | 6.1 |
| | Garbage Disposal | 30.4 | 22.1 | 17.4 | 11.6 | 4.3 |
| | Sanitation | 9.0 | 5.3 | 3.5 | 2.0 | 0.6 |
| Living Standards | Housing materials | 51.9 | 37.0 | 28.0 | 18.1 | 5.3 |
| | Assets | 39.6 | 26.2 | 19.4 | 12.8 | 3.9 |
| | Overcrowding | 13.3 | 6.4 | 3.9 | 2.3 | 0.7 |
| | Subsistence Farming | 26.5 | 17.2 | 12.9 | 9.0 | 2.7 |

*Source: National Institute of Statistics of Rwanda, EICV7*

### *Table B.5: Incidence, Intensity and MPI, by area and province (k = 33.3%)*

| Province | EICV7 | | | |
|---|---|---|---|---|
| | Pop. Share | Incidence (H), % | Intensity (A); % | MPI (M0) |
| National | 100 | 30.5 | 44.6 | 0.136 |
| Urban | 28 | 14.8 | 43.9 | 0.065 |
| Rural | 72 | 36.7 | 44.8 | 0.164 |
| City of Kigali | 14 | 12.4 | 43.0 | 0.053 |
| Southern | 22 | 35.2 | 45.0 | 0.158 |
| Western | 21 | 33.5 | 44.6 | 0.149 |
| Northern | 15 | 28.7 | 42.9 | 0.123 |
| Eastern | 27 | 34.4 | 45.5 | 0.157 |

*Source: National Institute of Statistics of Rwanda, EICV7*

### *Table B.6: Incidence, Intensity and MPI, by Quintile (k = 33.3%)*

| Province | EICV7 | | | |
|---|---|---|---|---|
| | Pop. Share | Incidence (H), % | Intensity (A); % | MPI (M0) |
| Q1 | 20.00 | 54.6 | 46.3 | 0.253 |
| Q2 | 20.01 | 39.7 | 44.4 | 0.176 |
| Q3 | 19.99 | 30.0 | 43.5 | 0.131 |
| Q4 | 20.00 | 21.1 | 43.3 | 0.091 |
| Q5 | 20.00 | 7.0 | 42.2 | 0.030 |

*Source: National Institute of Statistics of Rwanda, EICV7*

### *Table B.7: Percentage contribution of each indicator to the MPI at national level, and urban/rural (k = 33.3%)*

| Dimension | Indicator | Urban | Rural | National |
|---|---|---|---|---|
| Education | School Attendance | 1.5 | 1.1 | 1.2 |
| | Years of Schooling | 7.1 | 7.6 | 7.6 |
| Health | Access to Health care | 8.6 | 9.6 | 9.5 |
| | Health Insurance | 13.1 | 14.7 | 14.4 |
| Basic Services | Electricity | 5.2 | 2.4 | 2.7 |
| | Drinking Water | 12.7 | 15.4 | 15.0 |
| | Cooking Fuel | 1.4 | 2.2 | 2.1 |
| | Garbage Disposal | 11.0 | 8.6 | 8.9 |
| | Sanitation | 10.7 | 8.5 | 8.8 |
| Living Standards | Housing materials | 10.4 | 7.4 | 7.8 |
| | Assets | 10.6 | 10.5 | 10.5 |
| | Overcrowding | 2.7 | 4.7 | 4.4 |
| | Subsistence Farming | 5.2 | 7.3 | 7.0 |

*Source: National Institute of Statistics of Rwanda, EICV7*

***Table B.8: Percentage contribution of each indicator to the MPI, by province (k = 33.3%)***

| Dimension | Indicator | City of Kigali | Southern | Western | Northern | Eastern | National |
|---|---|---|---|---|---|---|---|
| Education | School Attendance | 1.6 | 0.9 | 1.5 | 0.4 | 1.4 | 1.2 |
| | Years of Schooling | 6.2 | 7.8 | 7.2 | 8.4 | 7.5 | 7.6 |
| Health | Access to Health care | 7.8 | 9.9 | 9.3 | 10.3 | 9.2 | 9.5 |
| | Health Insurance | 12.1 | 14.3 | 15.0 | 15.6 | 14.0 | 14.4 |
| Basic Services | Electricity | 6.6 | 2.4 | 2.4 | 1.3 | 3.3 | 2.7 |
| | Drinking Water | 11.3 | 15.3 | 14.9 | 15.8 | 15.2 | 15.0 |
| | Cooking Fuel | 0.4 | 2.9 | 1.9 | 1.8 | 2.0 | 2.1 |
| | Garbage Disposal | 11.3 | 8.0 | 9.2 | 8.6 | 9.3 | 8.9 |
| | Sanitation | 13.0 | 8.7 | 9.5 | 9.4 | 7.5 | 8.8 |
| Living Standards | Housing materials | 11.5 | 7.5 | 8.4 | 4.8 | 8.2 | 7.8 |
| | Assets | 10.1 | 11.4 | 10.6 | 10.6 | 9.6 | 10.5 |
| | Overcrowding | 4.0 | 4.1 | 3.7 | 5.4 | 4.8 | 4.4 |
| | Subsistence Farming | 4.1 | 6.8 | 6.3 | 7.4 | 8.1 | 7.0 |

*Source: National Institute of Statistics of Rwanda, EICV7*

***Table B.9: Percentage contribution of each indicator to the MPI (k = 33.3%) by quintile***

| Dimension | Indicator | Q1 | Q2 | Q3 | Q4 | Q5 |
|---|---|---|---|---|---|---|
| Education | School Attendance | 1.8 | 1.0 | 0.6 | 0.7 | 0.5 |
| | Years of Schooling | 6.9 | 7.5 | 7.8 | 8.7 | 9.5 |
| Health | Access to Health care | 9.8 | 9.4 | 9.7 | 9.1 | 7.7 |
| | Health Insurance | 14.3 | 14.7 | 14.9 | 14.1 | 12.9 |
| Basic Services | Electricity | 3.7 | 2.5 | 2.1 | 1.8 | 1.7 |
| | Drinking Water | 14.7 | 15.3 | 15.3 | 15.2 | 15.1 |
| | Cooking Fuel | 2.5 | 2.1 | 1.9 | 1.6 | 1.6 |
| | Garbage Disposal | 8.3 | 9.0 | 9.5 | 9.7 | 9.5 |
| | Sanitation | 8.4 | 8.8 | 9.2 | 9.0 | 10.5 |
| Living Standards | Housing materials | 7.8 | 7.9 | 7.4 | 7.8 | 8.2 |
| | Assets | 10.9 | 10.4 | 10.3 | 10.0 | 9.6 |
| | Overcrowding | 3.7 | 4.5 | 4.4 | 5.4 | 6.8 |
| | Subsistence Farming | 7.3 | 6.8 | 6.9 | 7.0 | 6.5 |

*Source: National Institute of Statistics of Rwanda, EICV7*

***Table B.10: Incidence, intensity, and multidimensional poverty index by different k-values***

| k-value | Incidence (H) | Intensity (A) | MPI |
|---|---|---|---|
| 5 | 92.3 | 26.7 | 0.245 |
| 10 | 83.8 | 29.0 | 0.240 |
| 15 | 71.8 | 32.1 | 0.227 |
| 20 | 57.7 | 35.8 | 0.204 |
| 25 | 44.5 | 39.8 | 0.175 |
| 30 | 34.2 | 43.2 | 0.147 |
| **33** | **30.5** | **44.6** | **0.136** |
| 35 | 27.2 | 46.0 | 0.124 |
| 40 | 20.3 | 49.5 | 0.100 |
| 45 | 13.8 | 53.4 | 0.074 |
| 50 | 8.2 | 58.1 | 0.048 |
| 55 | 4.4 | 63.3 | 0.028 |
| 60 | 2.5 | 67.4 | 0.017 |
| 65 | 1.4 | 70.9 | 0.010 |
| 70 | 0.8 | 74.9 | 0.006 |
| 75 | 0.4 | 79.2 | 0.003 |
| 80 | 0.1 | 83.9 | 0.001 |
| 85 | 0.0 | 88.4 | 0.000 |
| 90 | 0.0 | 93.8 | 0.000 |
| 95 | 0.0 | 100 | 0.000 |
| 100 | 0.0 | 100 | 0.000 |

*Source: National Institute of Statistics of Rwanda, EICV7*

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