Republic of Rwanda

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

The Fifth Integrated Household Living Conditions Survey

EICV5
2016/17

Thematic Report
Multidimensional Child Poverty Report
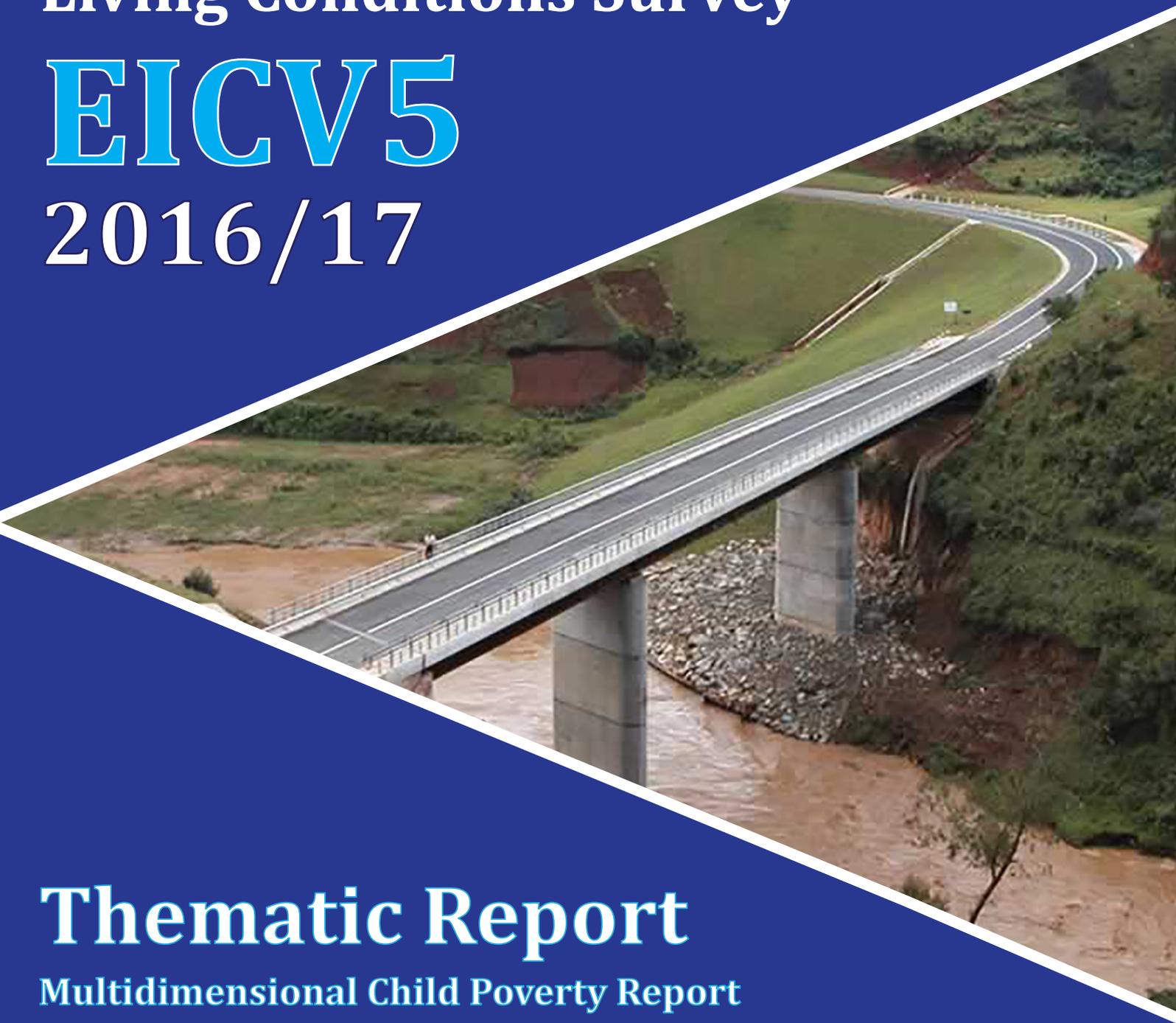
EICV5

Integrated Household Living Conditions Survey (Enquête Intégrale sur les Conditions de Vie des Ménages)

-2016/2017 -

EICV5_Thematic Report

Multidimensional Child Poverty Report

December 2018

Acknowledgement

The Fifth Integrated Household Living Conditions Survey (EICV5) was conducted from October 2016 to October 2017, and is designed to provide accurate and up-to-date information that are useful to goverment, analysts, and the public as they seek to monitor and evaluate efforts to reduce poverty.

The NISR now conducts EICV surveys every three years, and this has been made possible by strong collaboration and support from our stakeholders, who are as interested as we are in supporting evidence-based decision making, and planning processes that are grounded on reliable and valid statistics.

We sincerely appreciate the support given by the Government of Rwanda for the development of statistics in the country, and are grateful for the help that we continue to receive from all government institutions.

We are most grateful to our development partners for the support that they have given for the collection and development of statistics in Rwanda, and especially for EICV5. They include UK Aid, the European Union, the World Bank, and the UN partners in the country.

The measurement and analysis of poverty and living standards is an exercise that requires considerable tecnical skills. We would like to thank NISR technical and management team for their work - from the planning and implementation of EICV5 through the analysis and publication of the results. We further appreciate the valuable technical support provided by the international experts. The generation and use of complex survey data can only be achieved through teamwork.
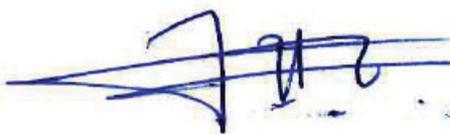
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Acronyms and Abbreviations

MODA	:	Multiple Overlapping Deprivation Analysis
DHS	:	Demographic and Health Surveys
EICV	:	Integrated Households Living Conditions Surveys
EPRI	:	Economic Policy and Research Institute
MDGs	:	Millennium Development Goals
MPI	:	Multidimensional Poverty Index
NISR	:	National Institute of Statistics of Rwanda
OPHI	:	Oxford Poverty and Human Development Initiative
SDGs	:	Sustainable Development Goals
UNICEF	:	United National Children's Fund
UNDP	:	United Nations Development Program
WFP	:	World Food Program
WHO	:	World Health Organization

Executive summary

The Multidimensional child poverty analysis, 2016/17 used data from EICV and focused on children aged 5 to 14 and 15 to 17 years. Assessing the current challenges from a child's point of view offers important insights on the nature of poverty in Rwanda – who are the poor, why their poverty persists, and how poverty is inter-generationally transmitted.

The Multidimensional child poverty analysis for Rwanda has five dimensions namely Health, Education, Water, Sanitation and Housing, disaggregated by key backgrounds such as area, province, sex, education, and family composition.

In 2016/17, the highest deprivations for children aged 5-14 years are found for distance to water source (with 47.3% of children being deprived in this indicator), followed by deprivation in garbage disposal (46.6%) in housing dimension, whereas the lowest deprivations are in School attendance (6.3%) in education dimension, toilet type (13.1%) in sanitation dimension, water source (13.4%) in water dimension, environmental destruction (14.8%) in housing dimension, and lighting source (14.9%) in sanitation dimension.

For children aged 15 to 17 years, the highest deprivation is for school attendance (57.2%), followed by distance to water source (44.7%), and deprivation in garbage disposal (40.2%), whereas the lowest deprivations are toilet type (11.1%), deprivation in water source (13.3), lighting source (13.6%) and deprivation in environmental destruction (15.1%).

The children deprived in at least three deprivations are 40.0%, two deprivations are 67.7%, and then none deprived children are only 10.8%.

Also, a child facing at least three deprivations (deprived in three dimensions) is considered multidimensionally poor. This analysis presents the details on single sector, the number of dimensions in which children are deprived, the Multidimensional deprivation overlaps, Multidimensional deprivation ratios/indices namely the multidimensional headcount rate (H); the average intensity (A) and the adjusted deprivation headcount *(M0).* Children 5 to 14 years are multidimensional poor at 25.3%, they face an intensity of 64.3% and face the child poverty index of 0.16.

However, 40.0% aged 15-17 years are multidimensionally poor, facing an intensity of around 68% and child poverty index of 0.27.
For children aged 5 to 14 years, the multidimensional poverty headcount rate decreased over time from 39.3% in 2010/11, 29.2% in 2013/14 and to 25.3% in 2016/17. The average intensity reduced from 66% in 2010/11, 65% in 2013/2014 and 64.3% in 2016/17. The M0 has decreased from 0.26 in 2011, 0.19 in 2014 and to 0.16 in 2016/17.

The decrease was also identified for children 15 to 17 years, where the multidimensional poverty headcount rate decreased by 20.0% from 60.2% in 2010/11 to 40.1% in 2016/17. The average intensity reduced slightly from 71.5% in 2010/11, 69.2% in 2013/2014 and 68.2% in 2016/17. The M0 decreased from 0.43 in 2011 to 0.31 in 2014 and finally to 0.27 in 2016/17.

It appears that 17.5% of children aged 5-14 years are at the same time deprived in Health, Water and Housing dimensions, and those deprived in two dimensions at the same time are

16.6% deprived in water and housing, 11.8 deprived in Health and Water and 8% in Health and Housing. The percentage of children aged 5-14 years who are at the same time deprived in Health, Water and Housing dimensions are slightly higher in urban area (16.8%) than in rural area (15.5%).

On the other hand, 20.1% of children aged 15-17 years are at the same time deprived in Education, Water and Housing dimensions, and 36.2% are deprived in two dimensions (11.5% in Education and water, 9.7% in Water and Housing, 15.0% in Education and Housing). Only 14.5% of children aged 15-17 years are non-deprived in the three dimensions.

The percentage of people aged 15-17 years who are at the same time deprived in three dimensions (Education, Water and Housing) is higher in rural area than in urban area (21.5% and 13.0% respectively). Those deprived in two dimensions (education and water, water and housing, education and housing) is much higher in rural areas (39.0%) than urban areas (23.3%).

In addition, 29.2% of children aged 5-14 are simultaneousely multidimensionally deprived and monetary poor, meaning that they experience both monetary poverty and deprived in other dimensions of wellbeing such as access to safe drinkinhg water, Education, Housing, Health and Sanitation. The proportion of none poor (those who don't experience monetary poverty and multidimensional poverty) are 30.3%. On the other hand, the overlap between monetary poor and multidimensional poor children aged 15-17 is 21.6% while those who are neither monetary poor nor multidimensional poor are at 42.3%.

The using data for EICV 2016/2017 corresponds to the year of opportune moment, on which Rwanda   focuses on a much more challenging set of development goals – the Sustainable Development Goals (SDGs) and other National programs. This report helps to Understand the current context of child poverty and establish the baselines to assess progress for achieving the 2030 targets and the National Strategy for Transformation (NST1) which places emphasis on poverty reduction under the pillars of Economic and Social Transformation with a target of eradicating extreme poverty by 2024.

Introduction

It has been widely acknowledged that children have basic human rights, such as a sufficient supply of healthy foods, access to health care, access to education, and freedom to grow up in a safe environment. These rights are fundamental to child well-being and enshrined in the United Nations '1989 Convention on the Rights of the Child (CRC).

Like UNICEF's Global Study on Child Poverty and Disparities (Gordon et al.2003; UNICEF 2007) that also used the rights based approach, MODA puts a greater emphasis on overlapping dimensions and age-appropriate "lifecycle" constructs for children and youth (see de Neubourg et al.2012).

Based on the MODA methodology (De Neubourg et al, 2012a), deprivation overlap analysis is carried out to study to what extent the different sectoral deprivations overlap and to show which types of deprivation children experience simultaneously. There are two ways in which this analysis is carried out. Firstly, each of the sectors is studied by looking at how many children are deprived only in the selected dimension and no other dimensions, and how many children are deprived in one to five other dimensions at the same time. This shows to what extent each of the deprivations is a unique problem among children requiring a single-sector response, and which deprivations occur together with other deprivations at the same time, pointing towards the need for an integrated approach to reducing deprivation intensity among children. Secondly, the deprivation overlap is studied by looking at three dimensions at a time, presented in a Venn-diagram to better visualise how the selected deprivations coincide.

The aim of this study was to apply the MODA toolkit to put forward a new measure of multidimensional poverty among Children using data from the Integrated Household and Living Conditions Surveys (EICV3-EICV5) for Rwanda.

Unlike more traditional definitions of multidimensional poverty that focus on capabilities and objective individual outcomes (e.g. Alkire et al.2015), the rights-based MODA framework also allows for more subjective relational aspects of poverty.

It is noteworthy that all countries have signed up to the new Sustainable Development Goals (SDGs), which explicitly mention multidimensional poverty in addition to monetary poverty (Yekaterina et al, 2017). The SDG Target 1.2 calls for reducing at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions by 2030. Rwanda has achieved remarkable progress in reducing poverty over the past decades. For example, Rwanda is one of the few countries on track to achieve the target of reducing child poverty by at least half by 2030 (UNICEF, 2014). Thus all nations are expected to monitor the proportion of children living in multidimensional poverty.

This study highlights the need to concentrate on the most vulnerable children in Rwanda, especially those deprived in several dimensions. Such multiple and overlapping deprivations during childhood and adolescence can have irreversible effects on the eventual productivity and social inclusion of children. Alleviating the intensity and severity of deprivation among children will contribute significantly towards Rwanda's future economic growth and overall productivity.

Building an understanding of the nature of child poverty and children's deprivations is essential to adequately address the needs of children through suitable programmes and policies. The majority of historical methods of poverty analysis have focused on household or individual monetary income or expenditure, but these measures are less appropriate for measuring child poverty or wellbeing. As children are not typically decision-makers or primary income-earners in a household, their wellbeing is not necessarily related to the level of household income. Also, children's needs are unique and specific at different stages of development, and these needs are not necessarily met by increased household wealth.

Multidimensional poverty analyses therefore complement existing studies on monetary-based poverty. UNICEF's Multiple Overlapping Deprivation Analysis (MODA) methodology aims to holistically identify and quantify the nature of children's deprivations with a view to help inform the design of services and interventions which accurately meet the needs of children.

This report presents the results of a MODA study carried out to identify, locate and create a profile of children with deprivations in Rwanda. The analysis uses data from the Integrated Household Living Conditions Surveys (EICV5-2016/17, EICV4-2013/14, and EICV3-2010/11) to identify the type, level and overlap of child deprivation. Further disaggregation reveals regional disparities, urban/rural differences, and other individual or household characteristics which may be linked to the multidimensional phenomenon of child poverty.

While the results of these analyses corroborate those of existing studies of monetary poverty (that children living in financially poor households suffer from multiple deprivations), the MODA also reveals the deprivations of children living in better-off households. And the study emphasizes the severity of multiple deprivations from which a group of children may suffer–such aspects are not covered in existing child poverty analyses.

The deprivation analysis covers the dimensions of access to basic essential services in the areas of education, health, water, sanitation and housing. Children are studied by age group of 5-14 years and 15-17 years.

Chapter 1: Methodology

The Multiple Overlapping Deprivation Analysis (MODA) methodology is the basis of the child poverty analysis presented in this report. It is a measure specifically designed to capture multidimensional poverty among children (0-17 years). MODA builds upon other prominent approaches to capture multidimensional poverty – in particular UNICEF's Global Study on Child Poverty and Disparities, 2007 (which applied the so called 'Bristol University' approach to multidimensional poverty) and the well-known Multidimensional Poverty Index (MPI) spearheaded by Oxford's Poverty and Human Development Initiative (OPHI). MODA distinguishes two main concepts of poverty: monetary poverty and multidimensional deprivation (de Neubourg et al., 2014) and uses both to analyse child poverty when data used for the analysis has information on both. Monetary poverty measures a household's lack of financial means to provide its members with basic goods and services deemed necessary for their survival and development. Deprivations measure the individual status in each of the various sectors considered as crucial for individuals' survival and development.

However, as the data used from the EICV is limited to the 5 and above years, this report presents only the MODA among children aged 5-14 years and 15-17 years old children.

MODA differs from other multidimensional poverty indices in several ways, including:
- It broadens the scope of sector-based approaches through overlapping deprivation analysis – providing useful evidence for integration of services/programmes.
- It takes the child as the unit of analysis, rather than the household (where possible: due to data constraints, some part of the analysis are based on household unit analysis). This approach recognizes that children experience deprivations differently from adults with regard to their developmental needs.
- MODA promotes the use of individual-level data when possible so that any differences across gender, ages or within households may be observed.
- The method follows a life-cycle approach, with indicators changing according to the needs of children at different life stages.
- It includes the prevalence and depth of deprivation for each child, providing a profile of the most vulnerable children (those with a higher number of simultaneous deprivations).
- In addition, it generates profiles of the geographical and socio-economic characteristics of children experiencing multidimensional poverty - potentially allowing for improved targeting of programs and more effective policy responses and interventions.

The MODA method has already been extensively applied to a series of countries in the region and globally. The first Multidimensional Child Poverty analysis was conducted by UNICEF in 2014 by using the Demographic and Health Surveys (DHS) and EICV datasets. This Rwandan Multidimensional Child Poverty analysis applies an adaptation of MODA on EICV5 (2016/17) for single sector analysis and other EICV waves (EICV3, EICV4 and EICV5) for trend analysis in order to produce Rwanda-specific and relevant analysis, with the aim of:
- Capturing national objectives concerning child development;
- Exploring the profile of deprived children, to locate them both geographically and socially;
- Improving the understanding of how the different deprivations by sector overlap to

inform which deprivations may need to be addressed simultaneously;

- Informing equity-based public policy responses to multidimensional child poverty; and indicating deprivation manifestations that need further theoretical and empirical elaboration.

1.2. Selection of indicators and dimensions

The MODA analysis is based on indicators, dimensions, deprivation thresholds and age groups, as follows:

A dimension largely follows the social sectors of Rwanda, i.e. the dimensions chosen for MODA analysis in Rwanda for this report are: health, water, sanitation, education, and housing.

Each dimension is constructed based on a number of key **indicators** which are relevant to each dimension. For example, the indicators which form the water dimension are drinking water source and distance to water source; and then under education dimension there is only one indicator (school attendance); the indicators under health dimension are health insurance and distance to health center; under Sanitation dimension there are two indicators (toilet type and lighting source); and two indicators are under Housing dimension (garbage disposal and environmental destruction). A child who is deprived in any of the indicators which make up the dimension is considered deprived in that dimension. All indicators were chosen on the basis that they partly explain the realization (or not) of a child's rights. Since each dimension reflects a basic right, they are considered to have the same importance and have been given equal weight in the analysis.

Deprivation thresholds are set for each indicator, and determine whether or not a child is deprived in that specific indicator (and if deprived in that indicator, then consequently deprived in the dimension). For example, the deprivation threshold for the drinking water source is whether a child lives in a household with an improved drinking water source (such a child would not be deprived in water) or in a household with an unimproved drinking water source (in which case the child would be deprived in water).

The analysis (dimensions and indicators) differs based on **age groups**, taking into account that the needs of children differ across their **life cycle** (i.e. different dimensions and/or indicators are chosen for different age groups). Due to lack of information on under 5 children, this MODA analysis 2016/17 for Rwanda includes multidimensional analysis for two distinct age groups: 5-14 years and 15-17 years.

The dimensions, indicators and deprivation thresholds for Rwanda were selected following data-driven feasibility assessments (i.e. what is possible to derive and analyse from available national data sets - the EICV gives more precise and contextualized information on children aged 5-17, so it is the one used in this study), discourse with national partners and consideration of internationally-agreed definitions of the essential rights and needs of the child, in particular the United Nations Convention on the Rights of the Child (CRC). The final selection of dimensions, indicators and deprivation thresholds for Rwanda reflects the consultations of key country stakeholders, national standards, research interests and data availability.

Some dimensions do not apply to the entire child population (for reasons including empirical consistency and data constraints). For instance, education only covers school-aged children (aged 5-17), while sanitation is relevant to all age groups. In fact, the water, sanitation and housing dimensions are based on household-unit data and therefore apply to all age groups.

Table 1 illustrates the dimensions used in the MODA analysis for children aged 5-14 and 15-17 years old in **Rwanda.**

Table 1. 1*: Selected dimensions for each age group under study*

No	Dimension	(Indicators) A child is considered deprived in (dimension) if
1	Health	Child is not covered by health insurance; and/or
		Child lives in a household where the time needed to go to the health facility is more than 1 hour (on foot)
2	Education	Child does not attend school; and/or
		Child did not successfully complete primary education (only for 15-17 years); and/or
		Child cannot read and write a simple letter or note and cannot make a simple calculation
3	Water	Child lives in a household where the main source of drinking water is unimproved; and/or
		Child lives in a household where the distance to the nearest water source is more than 500m for rural areas or more than 200m for urban areas
4	Sanitation	Child lives in a household which uses unimproved toilet facility
5	Housing	Child lives in household where main lightning source is unimproved; and/or
		Child lives in a household where mode of rubbish/garbage disposal is unimproved; and/or
		Child lives in a household affected by floods, mountain slides, destructive rains, or other environmental destruction during the last 12 months.

Source: Elaborated by NISR after discussion with stakeholders, partners and EPRI

Being deprived in at least one dimension does imply that a child is deprived of his/her rights. However, as resources are scarce, it is important (and also efficient) to focus on the poorest of the poor. Therefore, a threshold determining the number of dimensions in which the child should be deprived to be defined as suffering from multidimensional poverty needs to be set for MODA, and these vary by countries. In Rwanda the following criteria were considered:
The threshold must not be set too high (requiring a child to be deprived in many dimensions to be considered poor), but on the other hand if the threshold is set too low, almost all children will be considered multidimensionally poor, which will not provide useful information for programming and policy prioritization.

Consequently, following national consultation, it was decided that in the Rwandan context a child facing at least three deprivations (deprived in three dimensions) is considered multidimensionally poor.

1.3 Definition of key concepts

Single sector analysis: the percentage of children deprived in each dimension (and for each indicator) was estimated to give a sector perspective. This gives a first insight into which deprivations are particularly relevant for children of different age groups.
The distribution of the number of dimensions in which children are deprived: the number of deprivations per child provides an overview of the distribution of all deprivations among the

different age groups (i.e. how many children in a given age group suffer multidimensional poverty according to the cut-off of being deprived in three or more dimensions) and according to different background characteristics (profiling variables). The deprivation count also provides an overview of the depth of multidimensional deprivation.

Multidimensional deprivation overlaps: the analysis explores different deprivations that are most commonly experienced simultaneously (the overlap of deprivations/dimensions). Combinations of overlapping deprivations are highlighted and estimates made of the number of children suffering from one to five deprivations. This analysis enhances the information provided by single dimension approaches, giving insight into the severity of child deprivations and identifying deprivations that need to be addressed simultaneously.

Multidimensional deprivation ratios/indices: several multidimensional deprivation indices are calculated to provide summary statistics:

(i) The multidimensional headcount rate (H) looks at the incidence of multiple deprivations in the dimensions – it is useful to capture the prevalence of multidimensional poverty, however it is insensitive to the intensity and depth of poverty among children (i.e. the number of deprivations simultaneously suffered by one child). It looks at the total number of multidimensionally deprived children affected by at least three deprivations (deprived in at least three dimensions), divided by the total number of children in that particular age group;

(ii) The average intensity (A) looks at the number of deprivation a child experiences as a percentage of all possible deprivations; and

(iii) The adjusted deprivation headcount (M0) captures both the incidence and depth of deprivation. It is calculated by multiplying the multidimensional deprivation headcount (H) by the average intensity (A) and is therefore sensitive to changes in both.

For all the analyses, a chi-square test was performed to determine whether the differences between deprivation rates were significant at the 5% level. The use of an asterix (*) implies that the difference is statistically significant.

After discussion of the methodology (chapter 1) and its application in the broader context of children's deprivations in Rwanda, the overlap between monetary and multidimensional poverty is discussed in Chapter 2.

Chapter 2: Multidimensional child poverty analysis by age group

This chapter provides an in-depth analysis of multidimensional child poverty for the following age groups: 5-14 years and 15-17 years. The analysis is based on different sets of dimensions and indicators adjusted to these age groups.

The multidimensional child poverty or deprivation analysis has been undertaken at two levels:

(a) S*ingle sector analysis* (where the deprivation rates per indicator and dimension are presented to inform sectorial policies); and

(b) Multidimensional deprivation (poverty) analysis (where simultaneous deprivations are studied). The multidimensional deprivation or poverty analysis is the crux of this study and aims to identify the most vulnerable children – those facing simultaneous deprivations in several dimensions of their wellbeing. The analysis focuses on: the distribution of simultaneous deprivations, the headcount rate of multidimensional poverty, the intensity (or depth) of deprivation, and the overlap between deprivations.

2.1. Children aged 5-14 years

2.1.1. Single sector analysis

This section covers the child poverty (or deprivation) analysis for children aged 5-14 years using five dimensions: health, education, water, sanitation and housing. The deprivation rates for the indicators used to measure each dimension of wellbeing are shown in Figure 2.1 and Figure 2.2.

When it comes to the health dimension, 44% of the children aged 5-14 years are deprived in health dimension, as measured using the indicators health insurance and distance to health centre (recording deprivation levels of 28% and 24%, respectively).

Under the education dimension, Rwanda is doing relatively well, with around 6.3% of children aged 5-14 years deprived in this dimension by not attending school, both dimension of education and indicator of school attendence have the same values.

More than a half children aged 5-14 years are deprived in water dimension (52.2%). 13.4% do not have access to an improved water source, and 47.3% are deprived in the indicator distance to water source, meaning the distance to the nearest water source is more than 500m in rural areas or more than 200m in urban areas.

Figure 2.1: Deprivation rate in each indicator of a child's wellbeing, for children 5-14 years old at national level

Deprivation Headcount Ratio (%)

Dimension	Indicator	Value
Health	Health insurance	27.9
Health	Distance to health center	47.3
Education	School attendance	6.32
Water	Water source	13.4
Water	Distance to water source	47.3
Sanitation	Toilet type	13.1
Housing	Lighting source	14.9
Housing	Disposal of garbage	46.6
Housing	Evironmental destruction	14.8
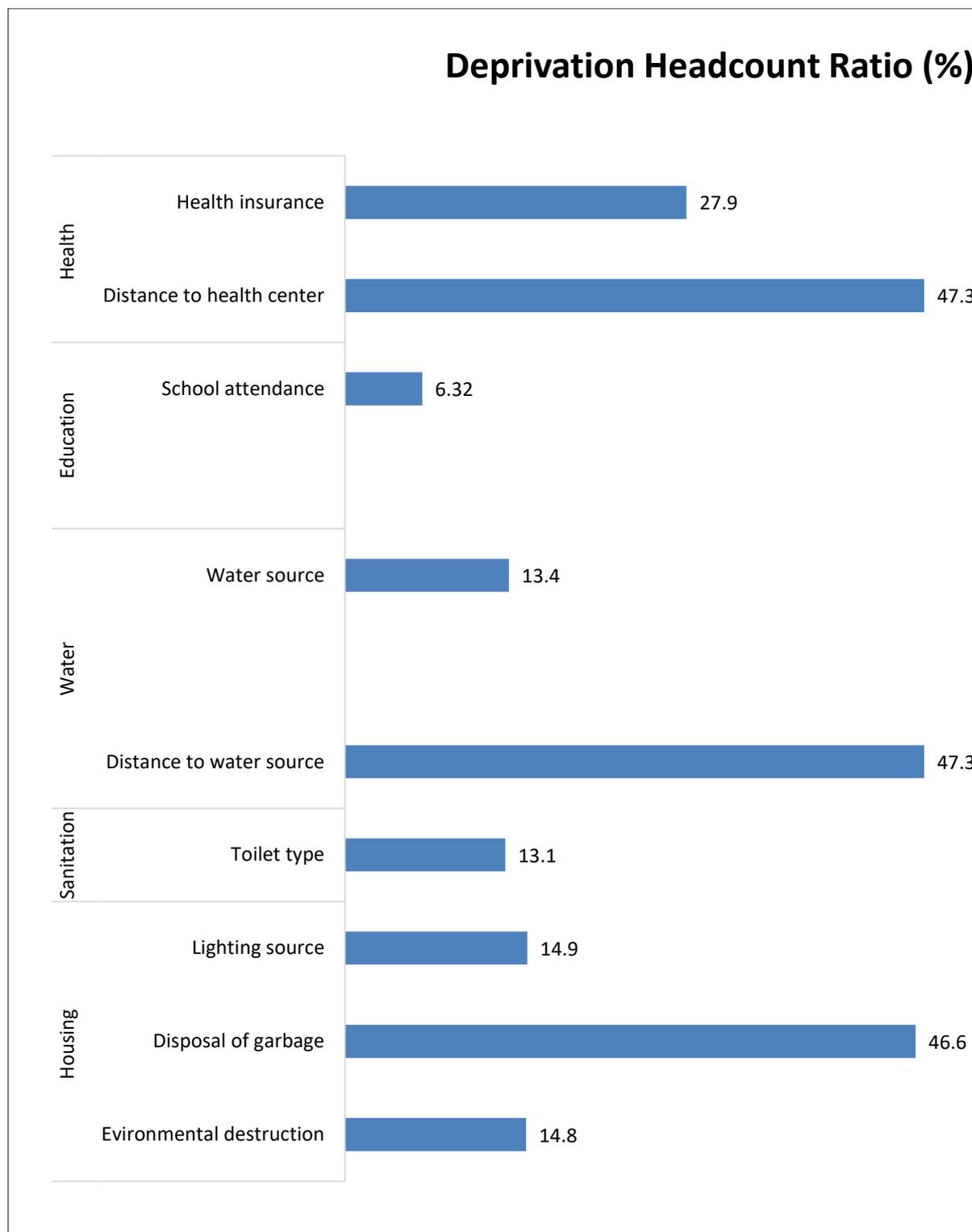
Source: Produced by NISR based on data from EICV5 (2016/17)

About 13.1% of children aged 5-14 years are deprived in sanitation as 13% do not have improved toilet and 15% lack an improved source of lighting.

Around three out of five children (60.4%) aged 5-14 years are deprived in housing dimension- figure 2.1b, 47% of children being deprived in garbage disposal (mainly due to the absence of

good method to destroy or collect the garbage disposal), and 15% deprived in environmental destruction (figure 2.2).

Figure 2.2: Deprivation rate by each dimension of a child's wellbeing, for children 5-14 years old at national level
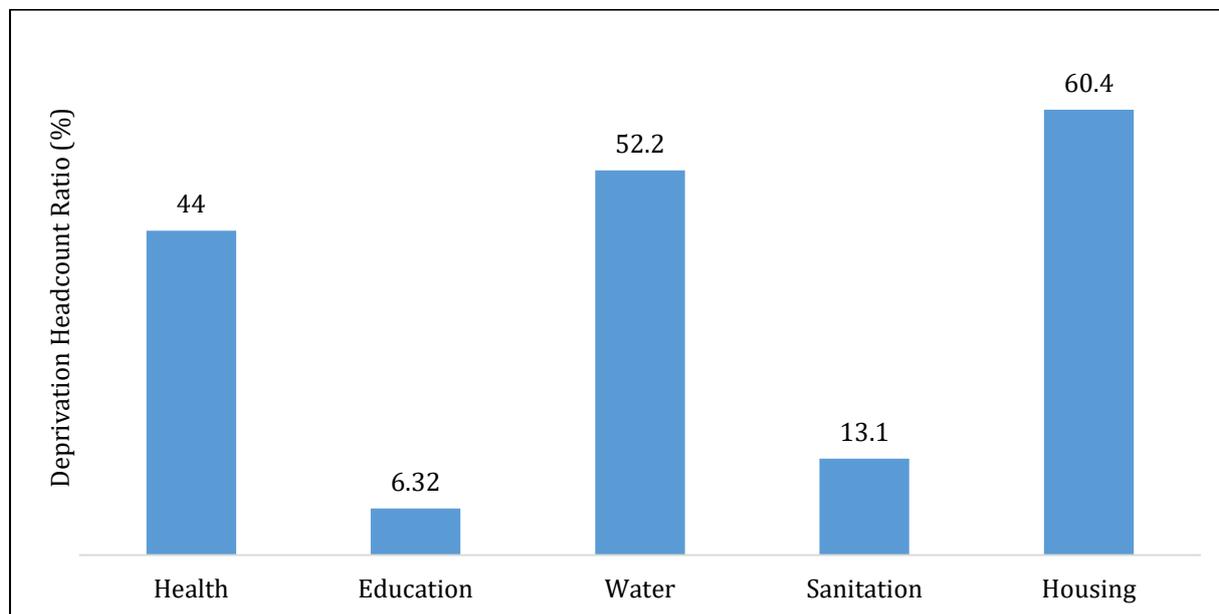
Source: Produced by NISR based on data from EICV5 (2016/17)

For any dimension considered, the deprivation rates are higher for children aged 5-14 years living in rural areas than for those living in urban areas, the difference is of 17.1% for health,14.2% for water, 13.2% for housing and 8.1% for sanitation (Figure 2.3). The difference is only low for the education dimension where it is 0.8 percent.

Figure 2.3: Deprivation rate in each dimension of a child's wellbeing, for children 5-14 years old by area of residence
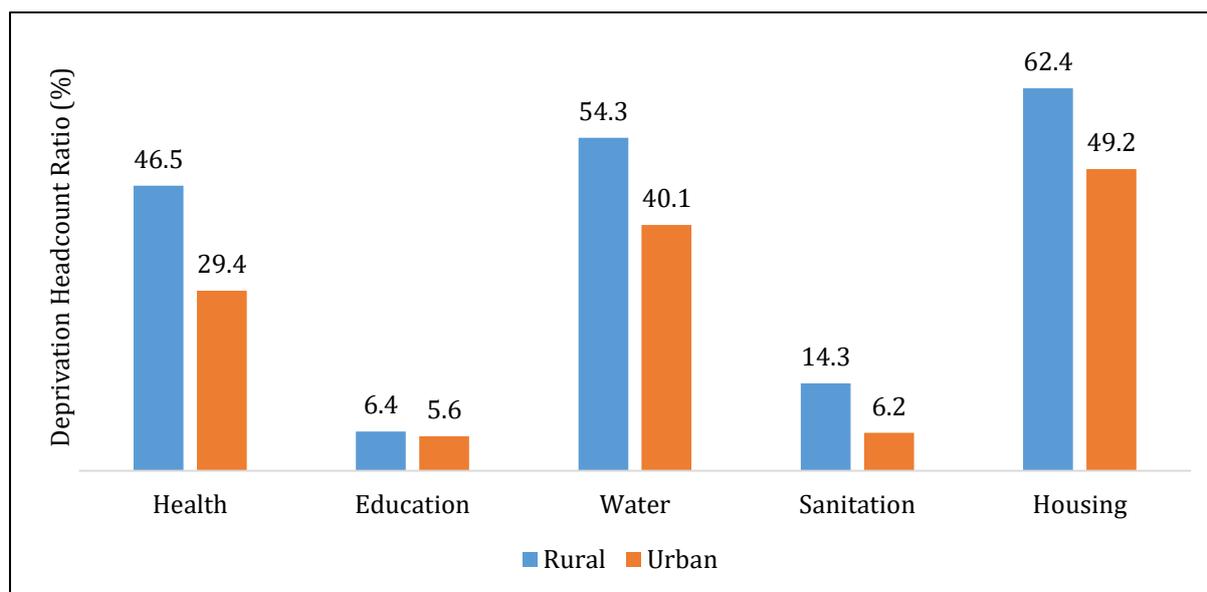
Source: Produced by NISR based on data from EICV5 (2016/17)

Southern province has the highest deprivation rates in health, sanitation, and housing (52%%, 24%, and 70% respectively). Eastern province has the highest deprivation rates in water (58%).

The lowest deprivation for children aged between 5-14 years is reported in the city of Kigali, but still it is over 39% in Water and Housing-figure 2.4.

Figure 2.4: Deprivation rate in each dimension of a child's wellbeing, for children 5-14 years old by province
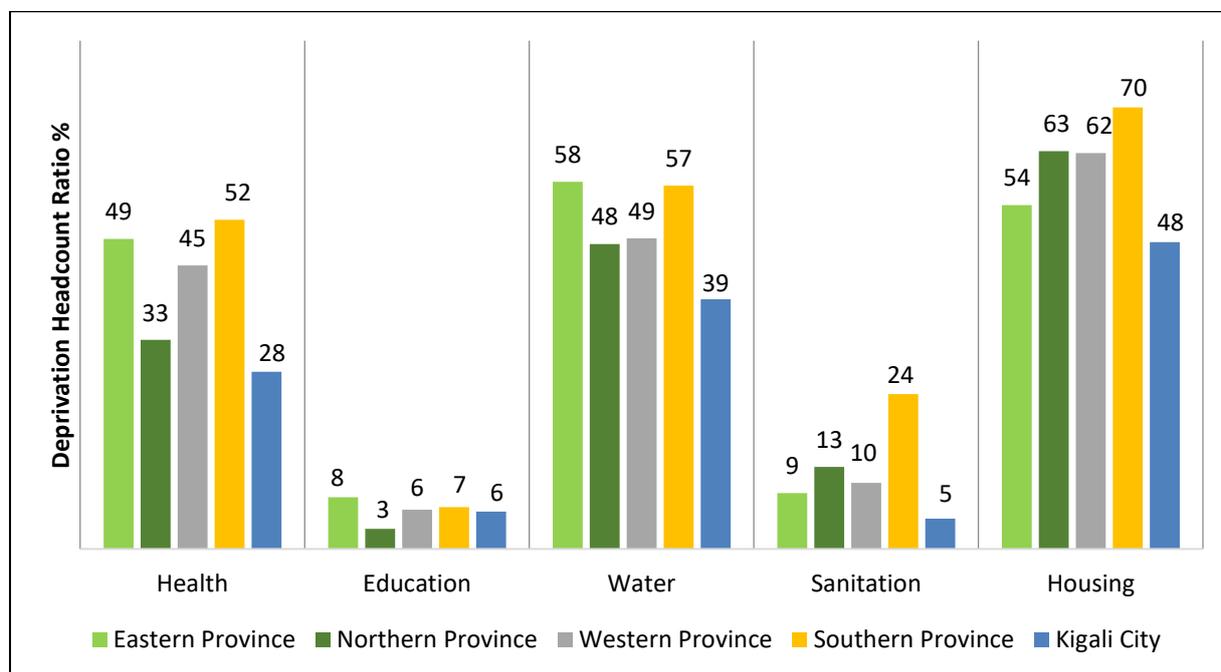
Source: Produced by NISR based on data from EICV5 (2016/17).

Figure 2.5 indicates that there is no significant sex differences for children aged 4-15. A slight difference (1.6%) appears for education dimension where males are more deprived than females.

Figure 2.5: Deprivation rate, in each dimension of a child's wellbeing, for children 5-14 years old by gender
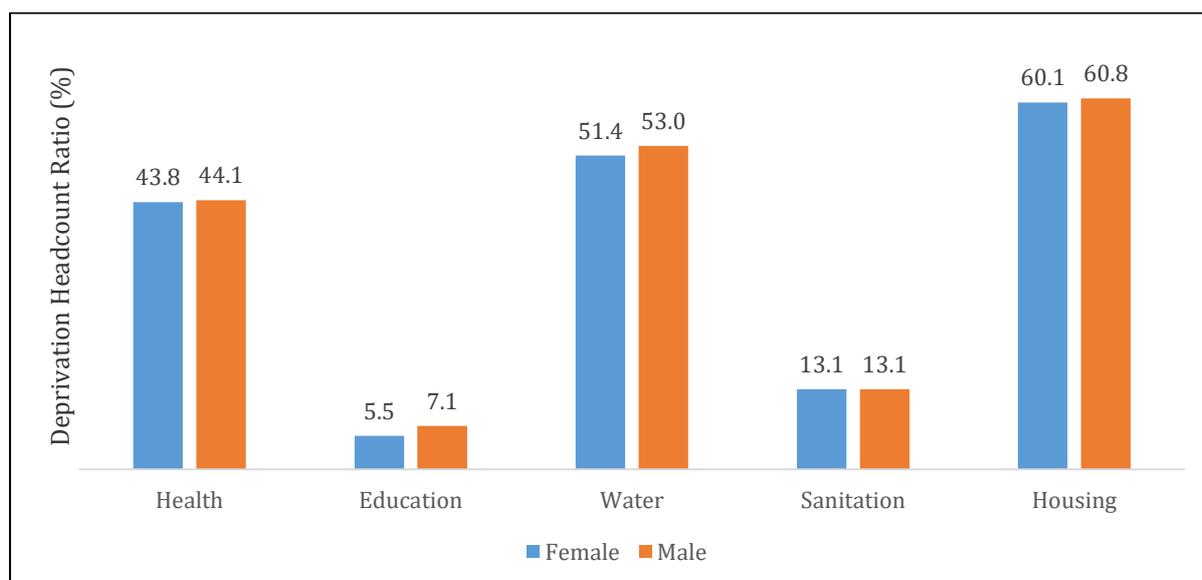
Source: Produced by NISR based on data from EICV5 (2016/17)

The educational level of the household head has a high influence on the deprivation rate – as the level of education of the head of household increases, the deprivation rate of children living with him decreases and this is true for any dimension considered (Figure 2.6). Considering the health dimension for instance, 49% for children living with household head with no level of education are deprived, while the deprivation rate is 39% for children whose parents has primary education (a difference of 10%) and 21.5% for children whose parents has secondary or higher level of education(a difference of 17.5%). The disparities in deprivation rate observed between children whose household heads having secondary or higher levels of education and those whose household heads having primary level of education are higher than the disparities between children whose household heads have no level of education and those with primary level of education.

Figure 2.6: Deprivation rate in each dimension of a child's wellbeing, for 5-14 years old children by education level of the household head
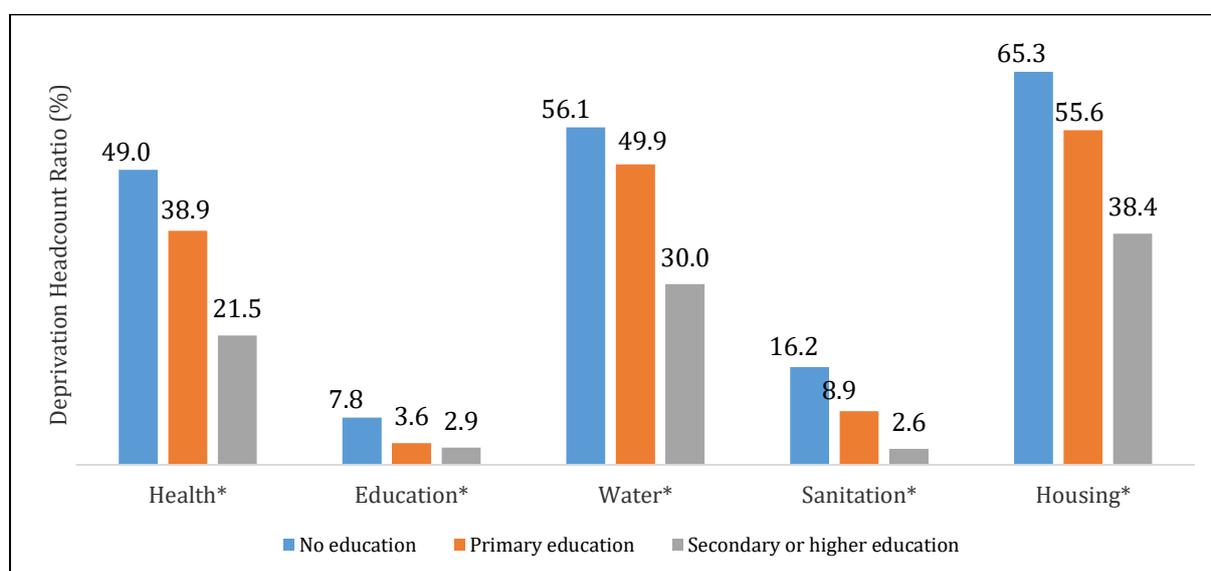
Source: Produced by NISR based on data from EICV5 (2016/17)

2.1.2. Multidimensional deprivation analysis

a. Distribution of deprivations

As shown in figure 2.7, at national level, about 14.1% of children experience no deprivation. Most children aged 5-14 years are deprived in two dimensions (33%), around 28% of children are deprived in one dimension, 20.3% deprived in three dimension and 5.0% are deprived in at least 4 dimensions.

Figure 2.7: Deprivation distribution for children 5-14 years old at the national level
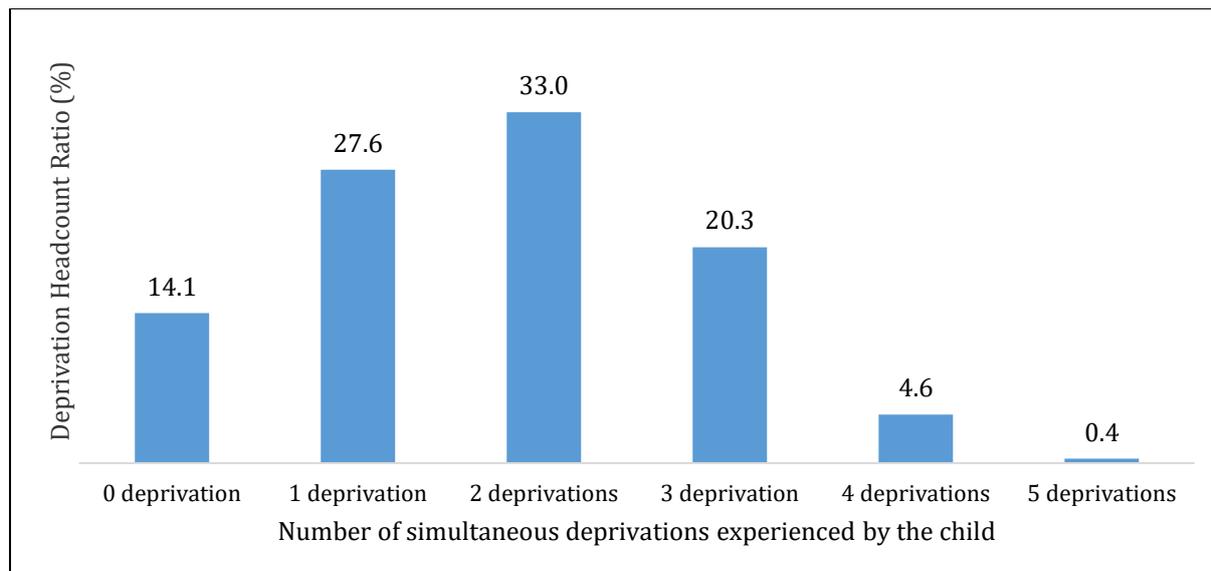
Source: Produced by NISR based on data from EICV5 (2016/17)

Children aged 5-14 years in rural areas (Figure 2.8) are more likely to experience more deprivations than those living in urban areas: 11% of children in rural areas experienced no deprivations compared to 32% in urban areas. It can be observed that 22% of children living in rural areas experienced 3 deprivations compared to 13% of children living in urban areas.

Figure 2.8: Deprivation distribution for children 5-14 years old by area of residence
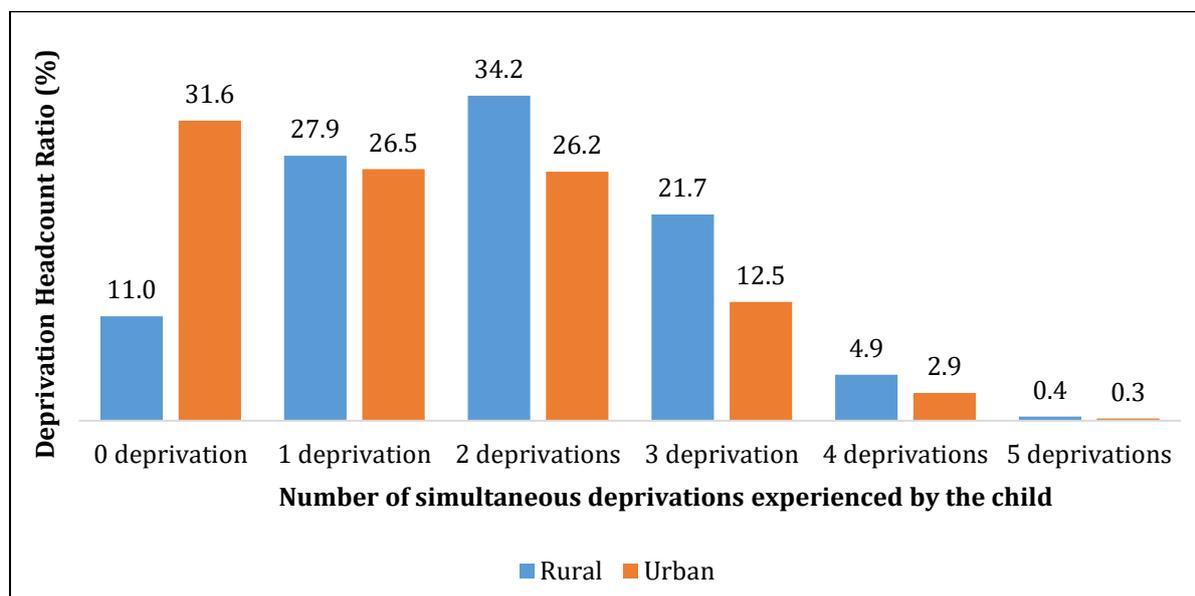
Source: Produced by NISR based on data from EICV5 (2016/17)

As shown in Figure 2.9, children in Kigali City have lowest rates of deprivation, with 32% experiencing no deprivations. Deprivations in Southern Province are higher than in the other provinces, with 27% of children deprived in three dimensions and 8% deprived in four. Despite such differences across provinces, it is remarkable that, most of the children across all provinces experience the lowest count of deprivations (0 to 3 deprivations) and the lowest proportion of children face the highest count of deprivations (between 4 and 5 deprivations).

Figure 2.9: Deprivation distribution for children 5-14 years old by province
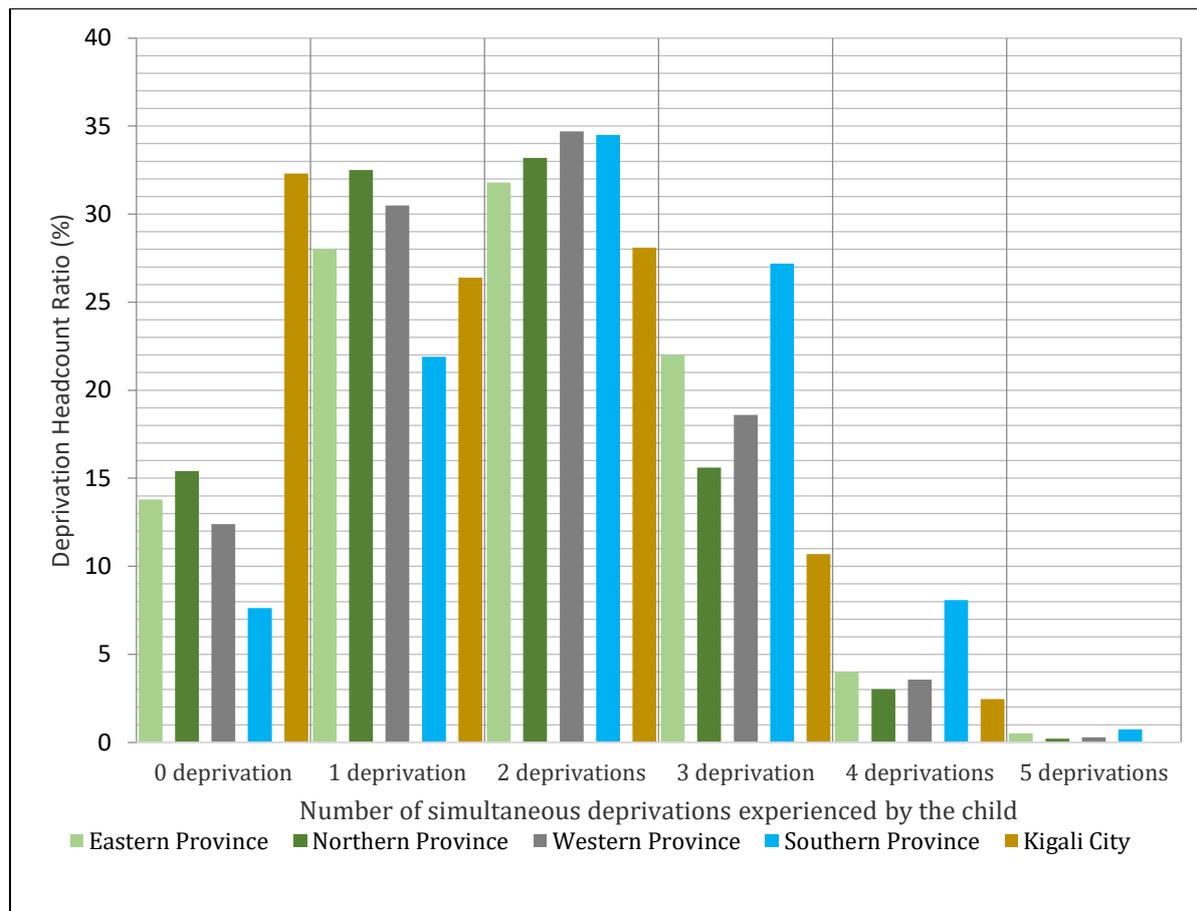
Source: Produced by NISR based on data from EICV5 (2016/17)

Looking at the deprivation distribution by sex of the child, there is no clear-cut gender difference for children aged 5-14 (Figure 2.10). However, it seems that the distribution of deprivation counts is skewed to the left, meaning that most children regardless of their sex face the lowest count of deprivations (between 0 and 3 deprivations), and the lowest proportion face the highest count of deprivations (between 4 and 5 deprivations).

Figure 2.10: Deprivation distribution for children 5-14 years old by gender of the child
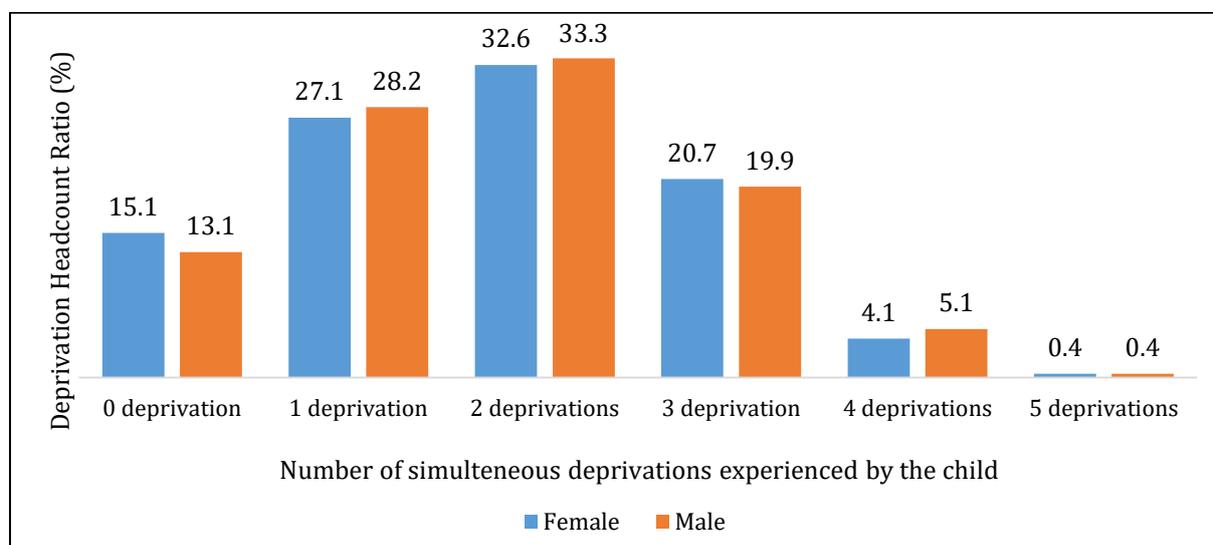
Source: Produced by NISR based on data from EICV5 (2016/17)

Multidimensional child poverty for children aged 5-14 years is more prominent in female-headed households (facing at least two deprivations), and less prominent in male-headed households (facing between 0 and 1 deprivations). This implies that, the absence of a father in a household is associated with higher multidimensional child poverty (figure 2.11).

Figure 2.11: Deprivation distribution for children 5-14 years old by gender of household head
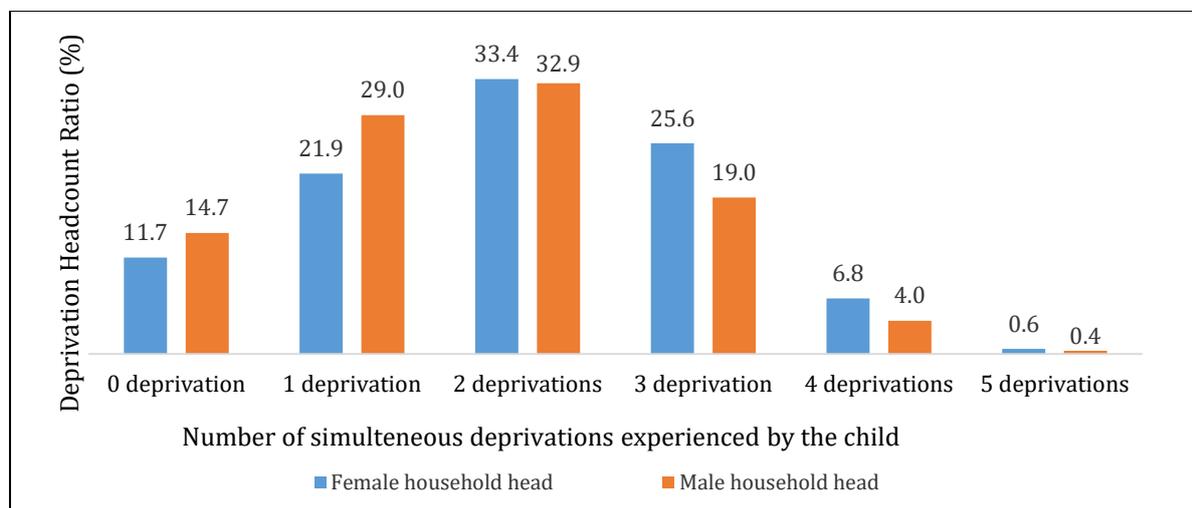
Source: Produced by NISR based on data from EICV5 (2016/17)

Also, the size of the household does not clearly affect the deprivation distribution. The difference being minimal between different size of household members for any number of deprivations considered (Figure 2.12). It is however interesting that, the highest proportion of children regardless of household size in which they live experience lower counts of deprivations (between 1 and 3 deprivations), whereas the lowest proportion of children experience the highest count (between 4 and 5 deprivations).

Figure 2.12: Deprivation distribution for children 5-14 years old by household size
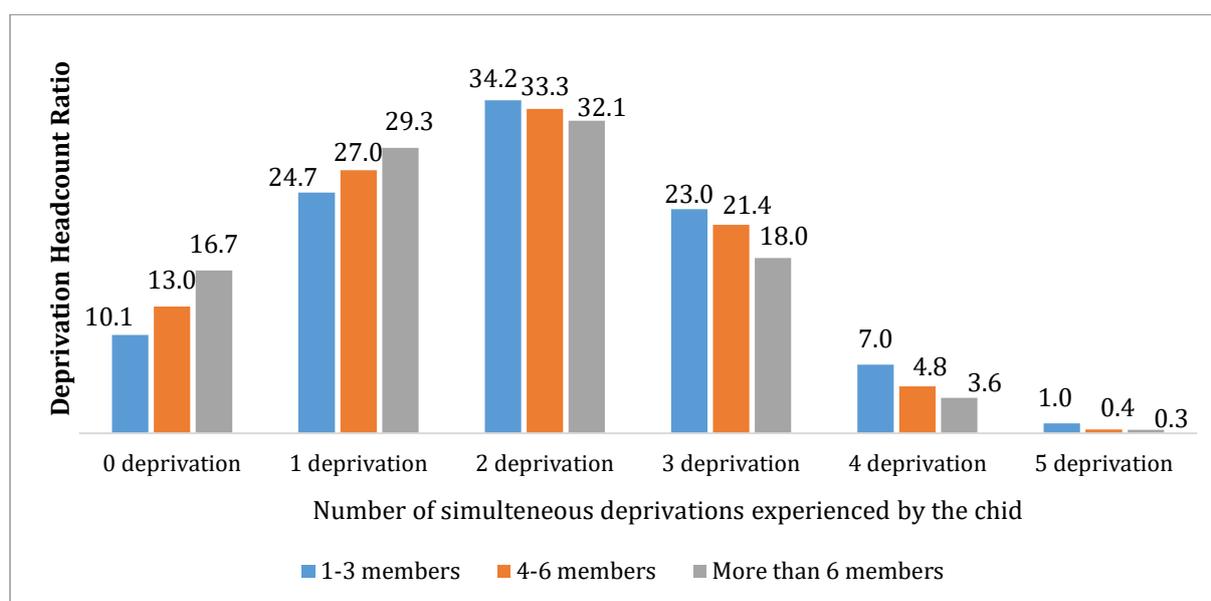
Source: Produced by NISR based on data from EICV5 (2016/17)

The percentage of children with no deprivation or with only one deprivation decreases with the level education of the household head. Figure 2.13 indicates that, 74.1% of children aged 5-14 whose household head has secondary or higher education experience no deprivations or only 1 deprivation (38.2% and 35.9%, respectively). Children whose household head did not attain any level of education or with primary education are significantly more likely to face at least three deprivations (40.4%) compared to only 6.0% for children living in secondary or higher educated households. 9.4% of children with a household head who did not attain any education or with only primary education are deprived in four or five dimensions compared to only 0.7% of children living with secondary or higher educated households. This clarifies that, children living with no educated or with only primary educated households are 13 times more deprived in four or five dimensions compared to children living in secondary or higher educated households.

Figure 2.13: Deprivation distribution for children 5-14 years old by education level of the household head
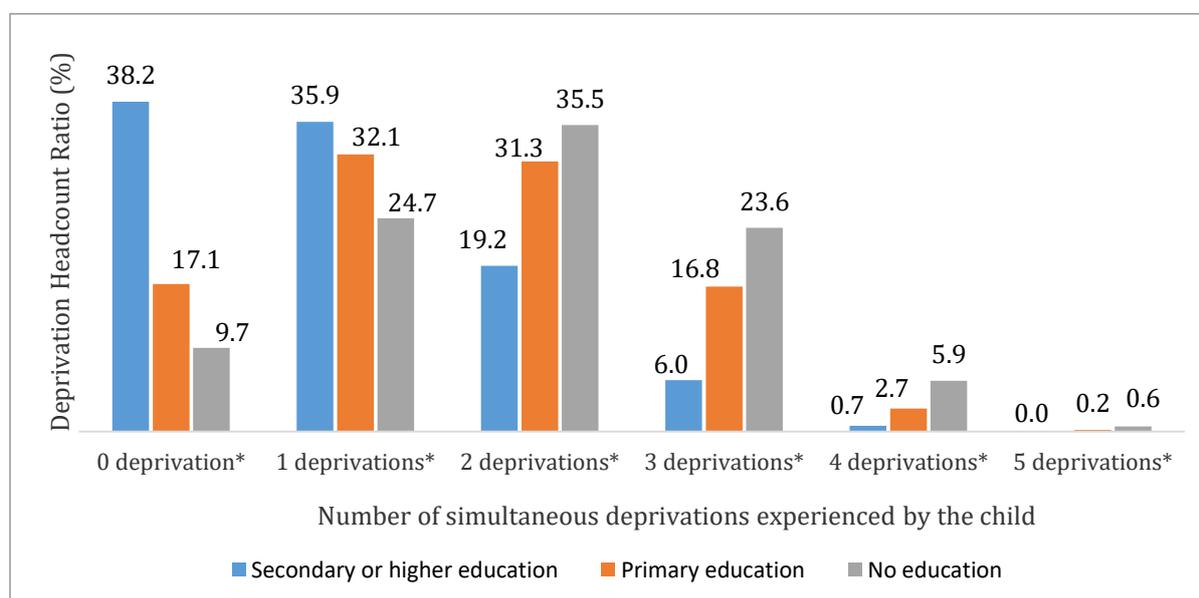
Source: Produced by NISR based on data from EICV5 (2016/17)

b. Multidimensional deprivation headcount (H)

Figure 2.14 shows the multidimensional deprivation headcount (H) for children aged 5-14 by different counts of deprivations the child experiences. At the national level, it appears that the percentage of deprived children decreases with the increase of the deprivations the child experiences. 85.9% of children aged 5-14 are deprived in at least one dimension, and 58.2% in at least 2 dimensions. In terms of multidimensional poverty, 25.3% of the children in this age group are multidimensionally poor, meaning that they face at least three deprivations and 0.4% are deprived in all five dimensions.

Figure 2.14: Multidimensional deprivation headcount ratio for children 5-14 years old at the national level
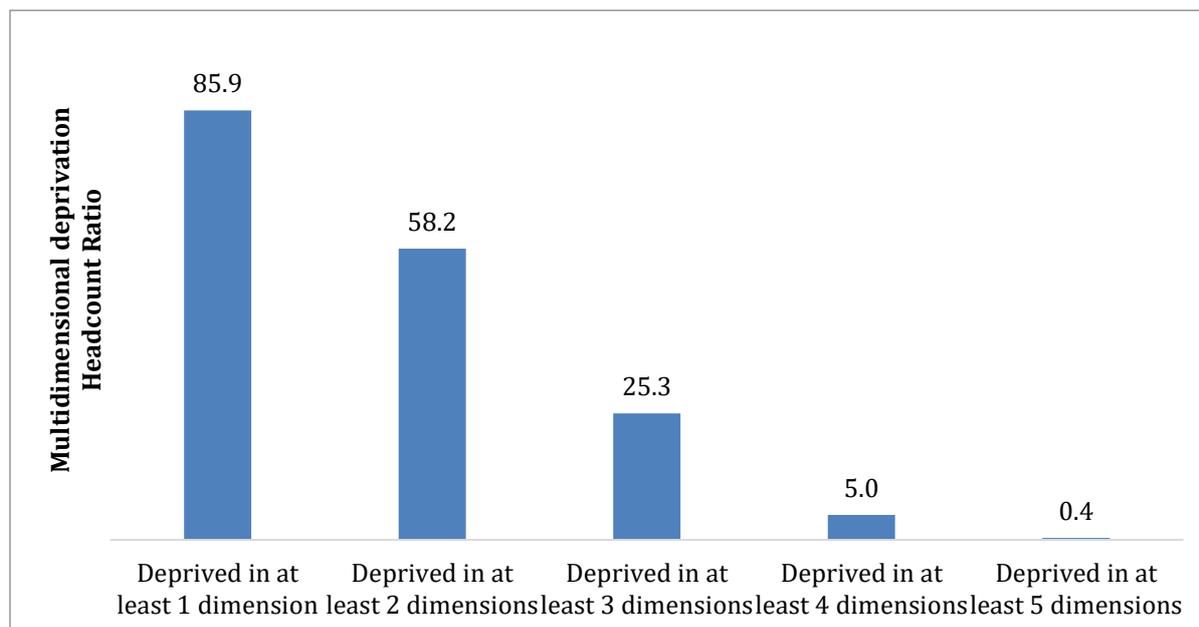
Source: Produced by NISR based on data from EICV5 (2016/17)

c. The average intensity of poverty (A) and the multidimensional poverty Index (MO) for children
5-14 years old

At the national level, 25% of children aged between 5-14 years are multidimensionally poor (figure 2.15).

Rural areas and Southern province have the highest deprivation rates with 27% and 36% respectively, of children deprived in at least three dimensions. The lowest incidence of poverty is reported in Kigali city (13%) and Northern province (19%).

The average intensity among the deprived children does not vary across areas and provinces. There is only slight variation in southern province (65.0%) compared to other provinces (64.0%).

The multidimensional child poverty index (M0) is lowest (0.1) in Kigali City, Western province and Northern province and highest (0.2) in southern province and Eastern province. In this age group, children living in urban areas are much less deprived (at 0.1 of multidimensional poverty index) than children living in rural areas (0.2).

Figure 2.15: Indices for children 5-14 years old who are deprived in at least 3 dimensions at the national level and by area & province of residence
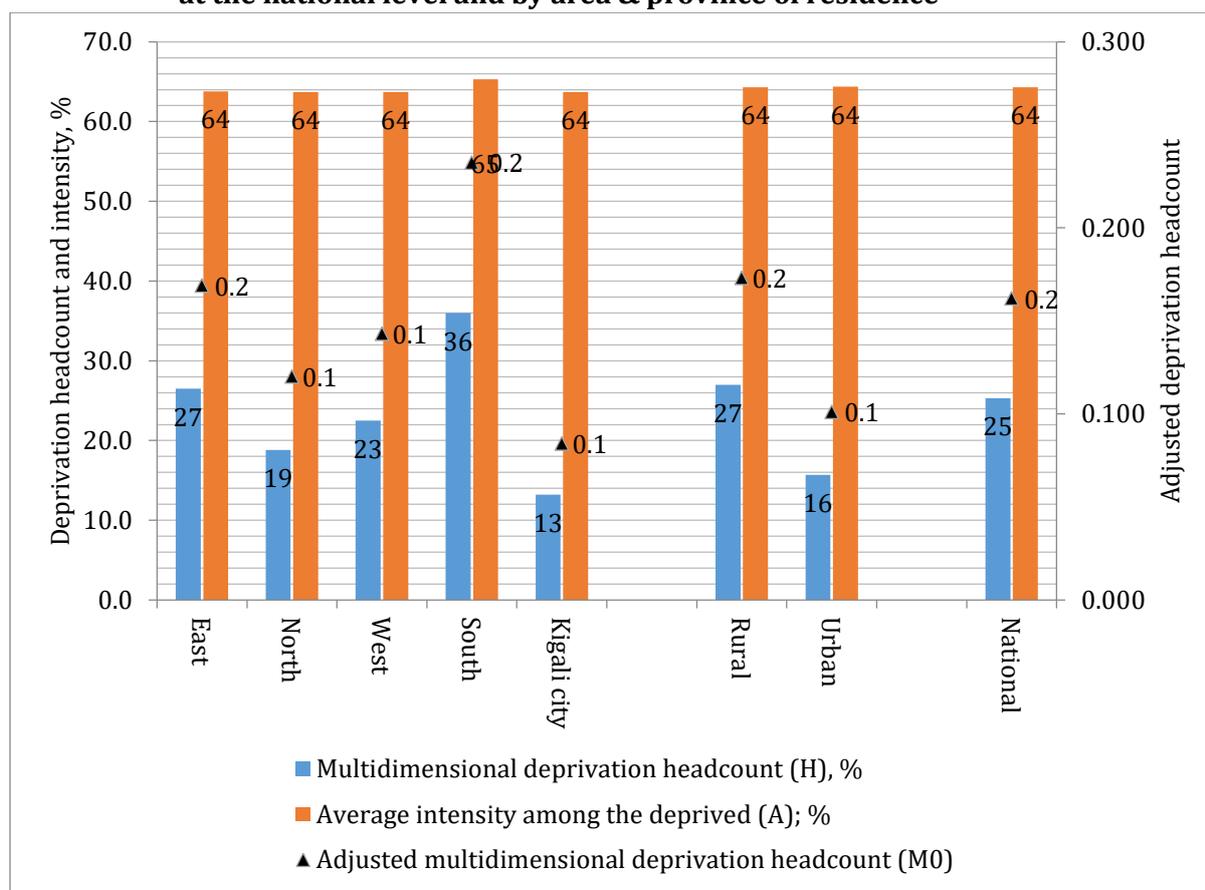
Source: Produced by NISR based on data from EICV5 (2016/17)

d. Contribution of each dimension to deprivation level

The decomposition analysis for children aged 5-14 years was done to understand which dimensions contribute most to the multidimensional deprivation index and overall deprivation levels. The decomposition presented in Figure 2.16 indicates almost similar patterns for national level and in urban and rural areas, except on education dimension where it is 4.7% at the national level, and 6.0% in urban areas, and Sanitation dimension (11.7%) at the national level and 7.9% in urban areas. Housing, Water and Health contribute the most to national, urban and rural deprivation levels.

Education and Sanitation contribute the least to Multidimensional poverty at the National level and in both urban and rural areas.

Figure 2.16: Contribution of each dimension to the M0 for children 5-14 years at national level and by area of residence
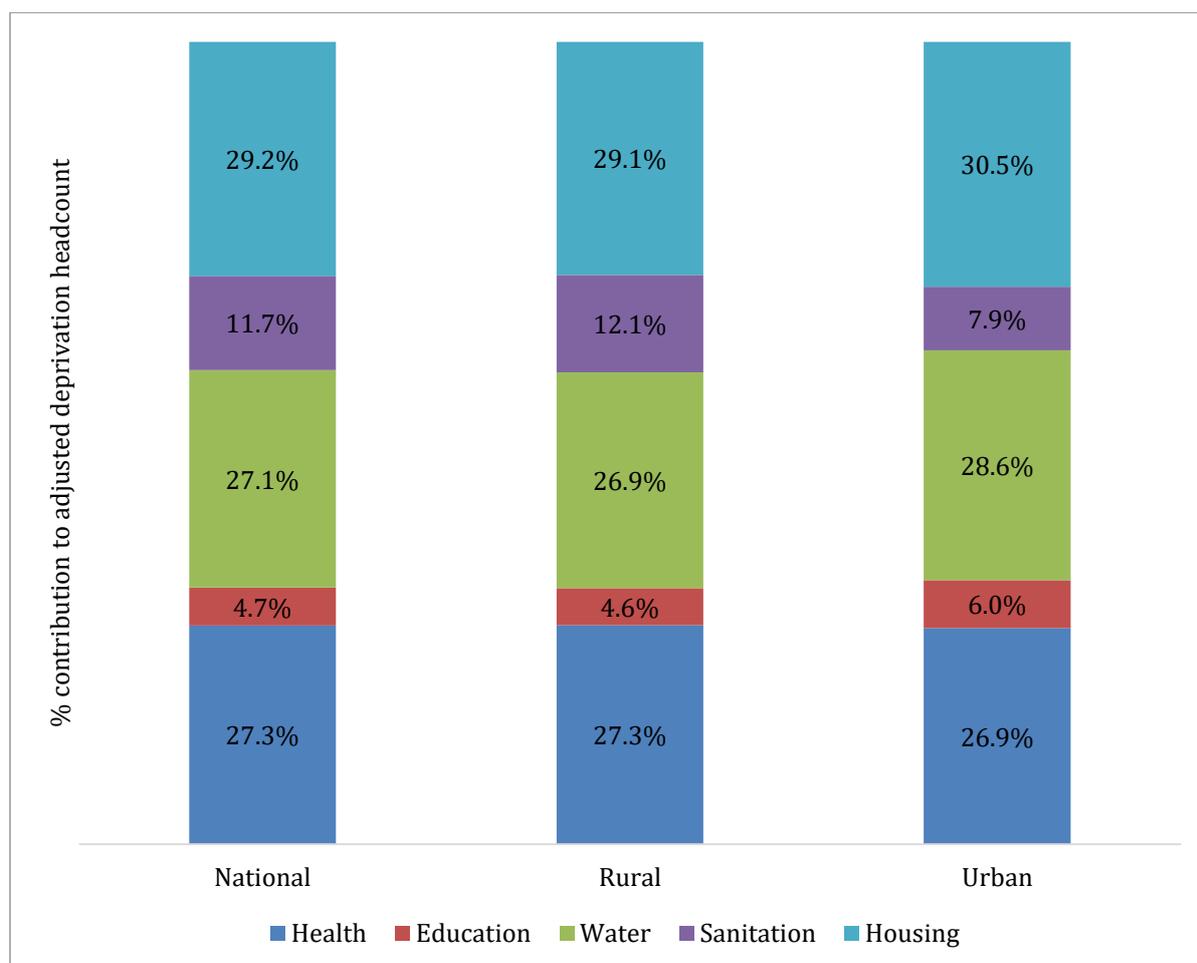
Source: Produced by NISR based on data from EICV5 (2016/17)

e. Deprivation overlap analysis

For children aged between 5-14 years, very few of them are deprived in only one dimension meaning that most children who are deprived in one dimension are also simultaneously deprived in at least two other dimensions. For instance, of all children deprived in Health, only 5.5% are deprived only in health dimension, 16.3% are deprived in one other dimension, and 17.3% are deprived in two other dimensions. A relatively higher part of children (12.4%) are deprived in only housing than in any other single dimension. Housing and Water appear to be the dimensions within which there are most significant overlaps, whereby the least overlapping dimensions are Education and Sanitation (figure 2.17).

Figure 2.17: Deprivation overlaps for children 5-14 years old by dimension
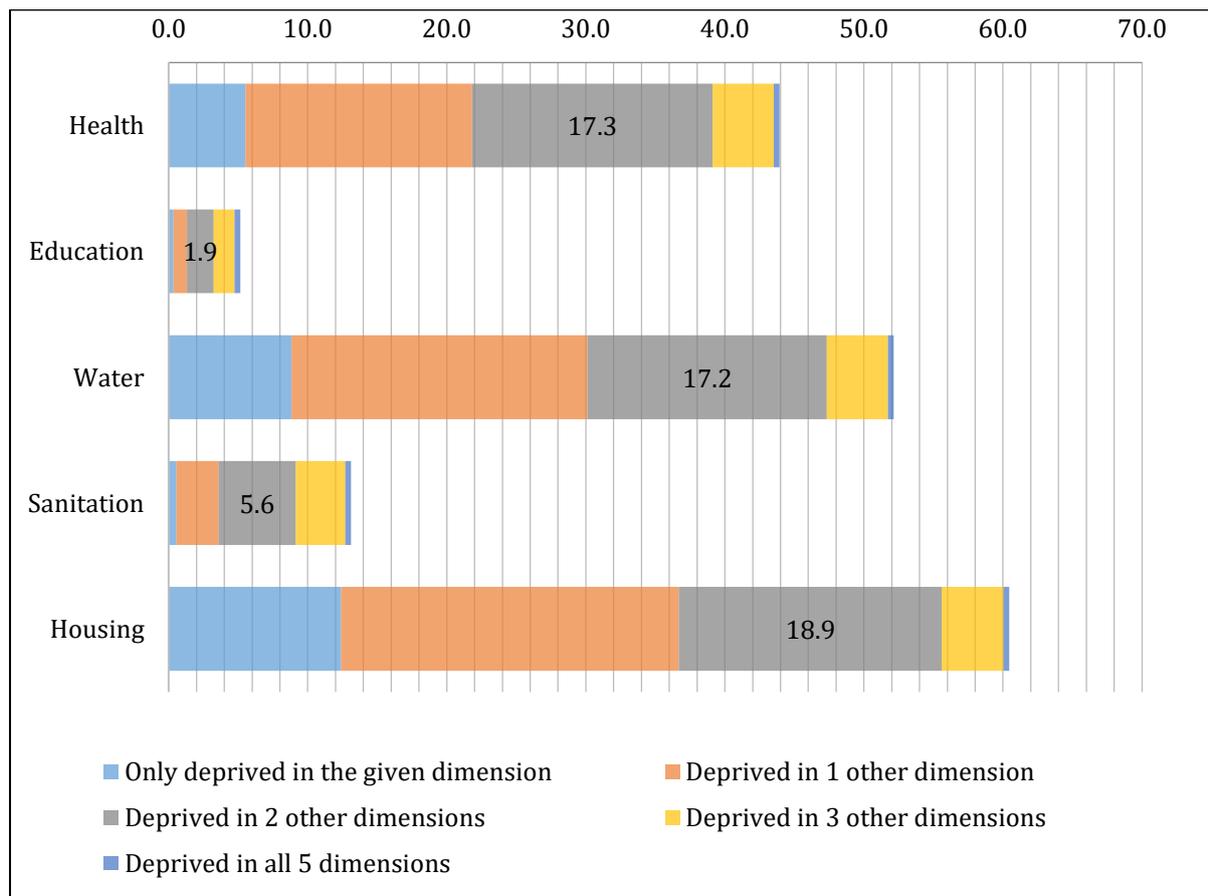
Source: Produced by NISR based on data from EICV5 (2016/17)

It appears from figures 2.18 that 17.5% of children aged 5-14 years are at the same time deprived in health, water and housing dimension and 36.4% in two dimensions (16.6% in water and housing, 11.8% in health and housing and 8.0% in health and water). Only 15% of children are non-deprived in the three dimensions.

The percentage of children aged 5-14 years who are at the same time deprived in health, water and housing dimensions are slightly higher in rural area (16.8%) than in urban area (15.5%). For those deprived in two dimensions, the percentage of those deprived in health and water as well as in health and housing is much higher in rural areas (8.9% and 12.6%) than in urban areas (4.7% and 6.5%).

Figure 2.18: Overlap between health, water and housing for children 5-14 years old at national level and by area of residence

National
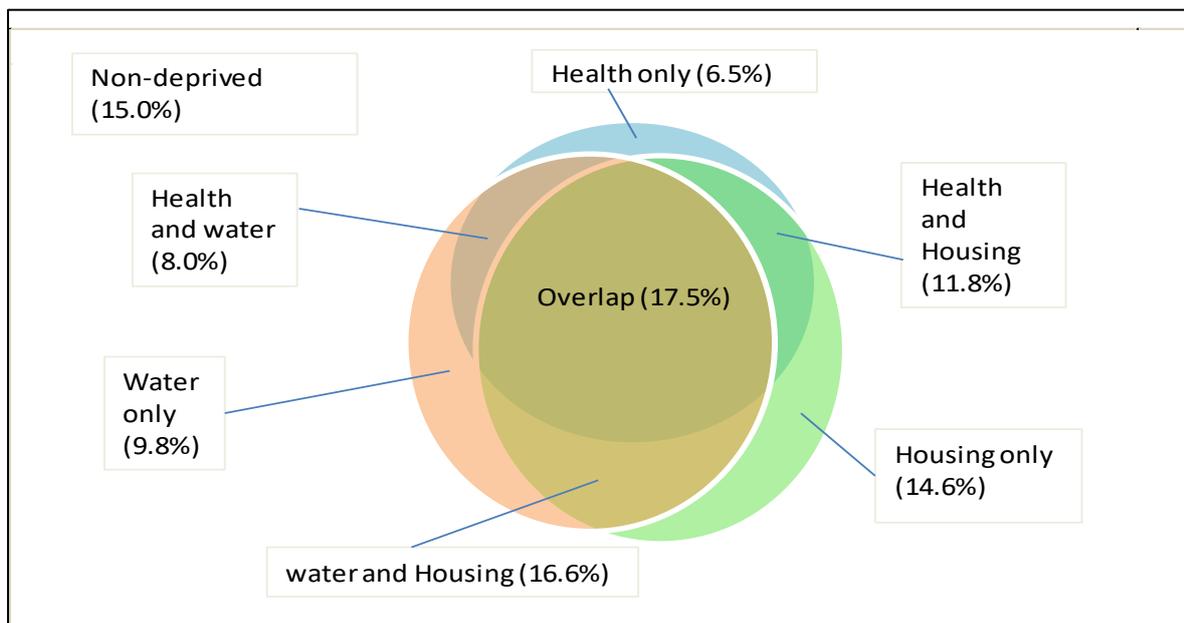
Source: Produced by NISR based on data from EICV5 (2016/2017)

Rural
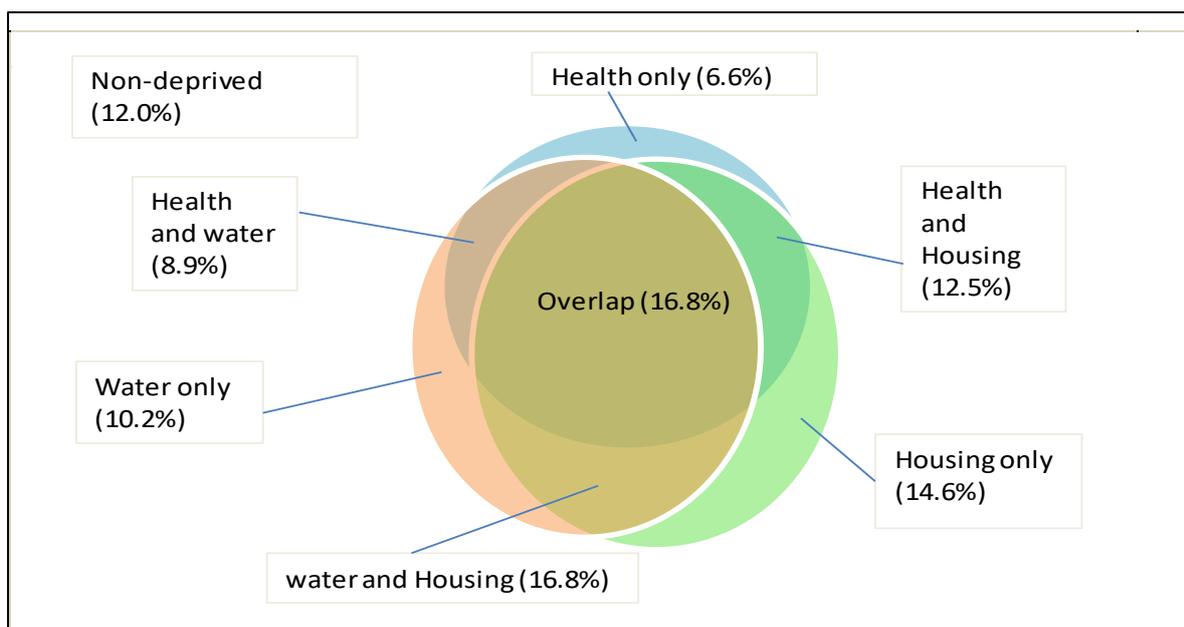
Source: Produced by NISR based on data from EICV5 (2016/2017)

Urban

Non-deprived (32.5%)

Health only (5.9%)

Health and water 4.7%)

Health and Housing (6.5%)

Overlap (15.5%)

Water only (7.7%)

Housing only (14.9%)

water and Housing (15.5%)
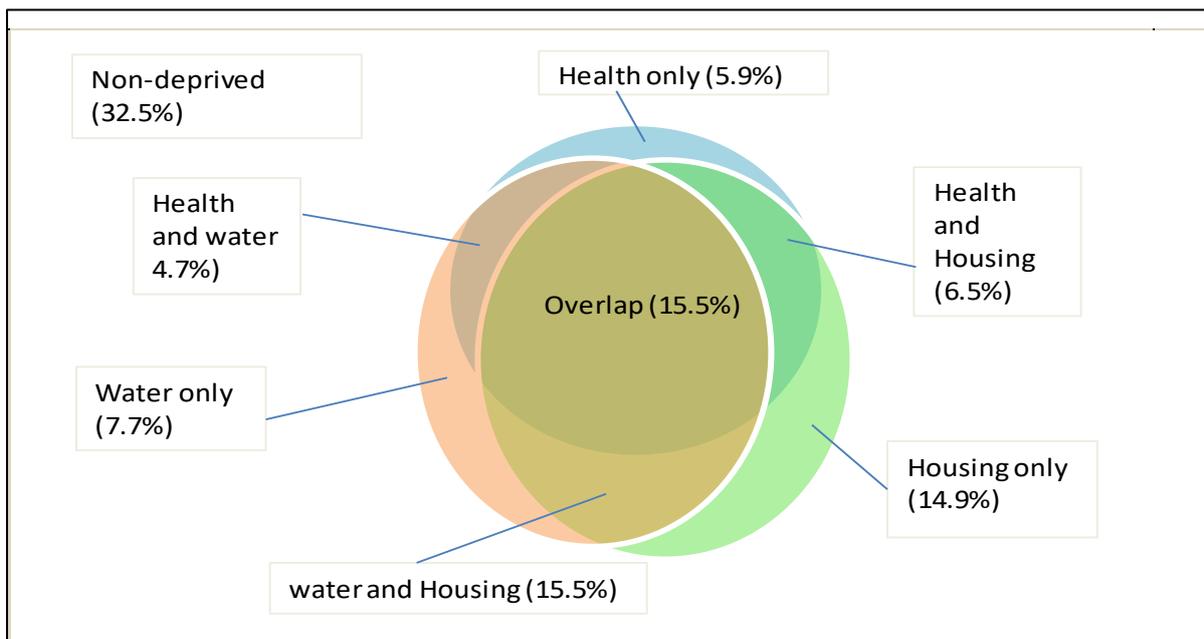
Source: Produced by NISR based on data from EICV5 (2016/17)

Figure 2.19 shows the overlaps of multidimensional child deprivation with the monetary poverty. The results shows that in Rwanda, based on the five dimensions, 29.2% children aged 5-14 are simultaneousely multidimensionally deprived and monetary poor, meaning that they are more vulnerable. Children who are multidimentionally deprived but not monetary poor represent 23.1% while the share of those who are only monetary poor is 17.4%. Thus the proportional of children who are neither multidimensional deprived nor monetary poor is 30.3%.

Figure 2.19: Overlap between monetary and multidimensional deprivation for children 5-14 years old at national level
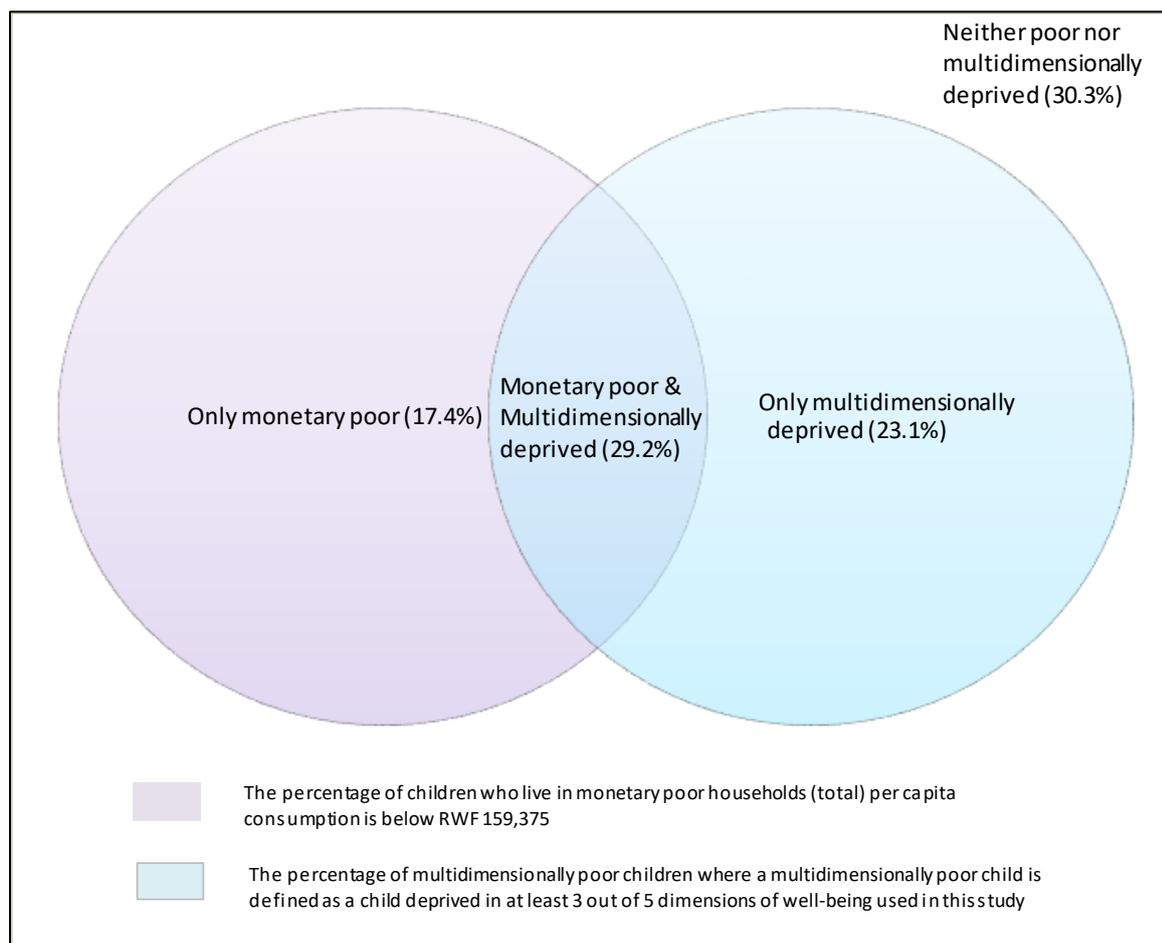
Source: Produced by NISR based on data from EICV5 (2016/17)

2.2. Children aged 15-17 years

2.2.1. Single sector analysis

This section covers the child poverty (or deprivation) analysis for children aged 15-17 years using five dimensions: health, education, water, sanitation and housing. The deprivation rates for the indicators used to measure each dimension of well-being are shown in Figure 2.20

Under the health dimension, 24.4% of children in this age group do not have health insurance and 22.9% are deprived in the distance to health center indicator (i.e. living in a household where the time needed to get to the health center is more than one hour on foot).

Under the education dimension, school attendance is a major challenge for children aged 15-17, with 57.2% of them not attending school which is the same as education dimension in 2017, 30.5% did not successfully complete their education and 17.4% do not meet literacy and numeracy standards.

Under the water dimension, 13.3% of children of this age group do not have access to an improved water source and 44.7% of children are deprived in the distance to water source indicator (i.e. the nearest water source is more than 200m away from their households in urban areas and more than 500m in rural areas).

The sanitation dimension (measured in terms of access to improved toilet facility) gives a lowest deprivation rate of 11.1%.

Education is the dimension with the highest deprivation headcount rate (57.2%) followed by housing (54.8%). Under the housing dimension, 13.6% use unimproved lighting source, 40.2% live in households where garbage disposal is unimproved and 15.1% live in households that were affected by floods, landslides, destructive rains and other environmental hazards.

Figure 2.20: Deprivation rate in each indicator and dimension of a child's wellbeing for children 15-17 years old at national level

Source: Produced by NISR based on data from EICV 2016/17

23
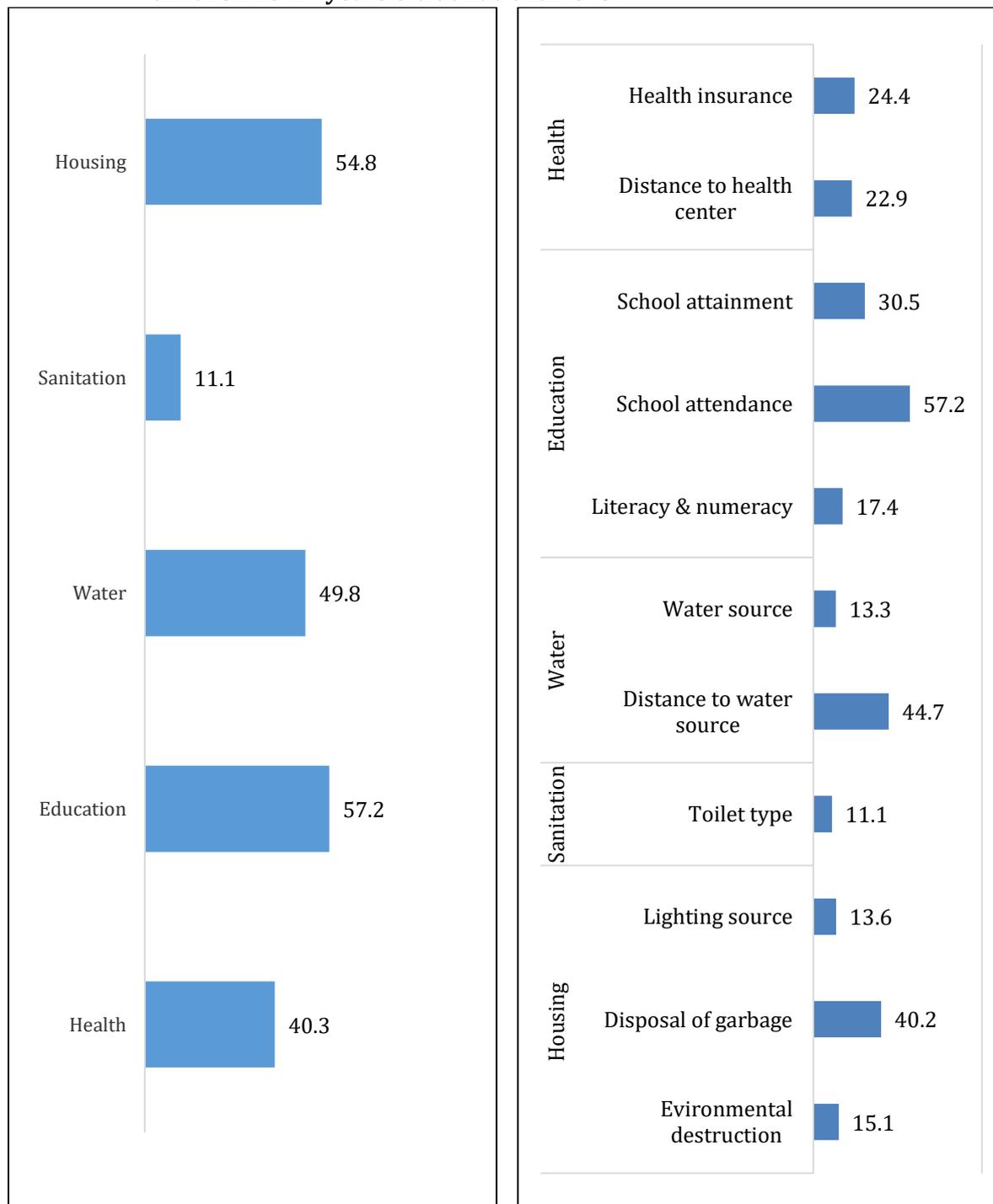
However, children aged 15-17 years living in rural areas are significantly more likely to be deprived than children living in urban areas in all dimensions (Figure 2.21). Water and education show a significant difference of 19.1% and 18.1% points respectively; 53.1% of rural children are deprived in water compared to only 34.0% of urban children, and 60.4% of rural children are deprived in education compared to only 42.3% of urban children.

Figure 2.21: Deprivation rate in each dimension of a child's wellbeing for children 15-17 years old by area of residence
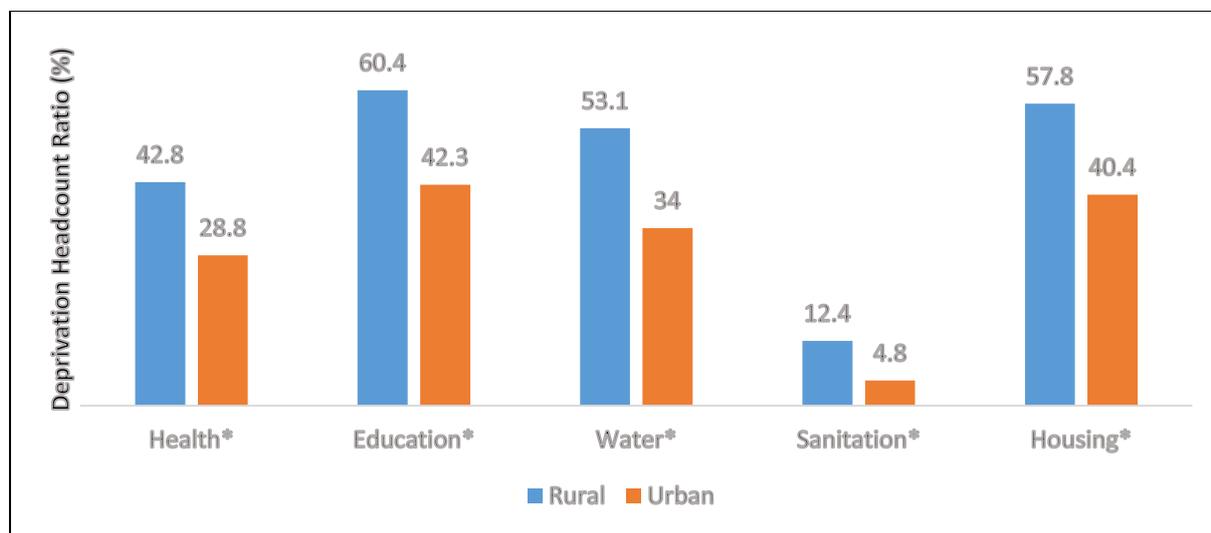
Source: Produced by NISR based on data from EICV5 2016/17

Southern province has the highest deprivation rates in health, sanitation, and housing (47%, 21%, and 67% respectively). Eastern province has the highest deprivation rates for education and water, 64% and 56% respectively (Figure 2.22). The lowest deprivation is reported in the city of Kigali, but still it is over 28% in, education, Water and Housing.

Figure 2.22: Deprivation rate in each dimension of a child's wellbeing for children 15-17 years old by Province
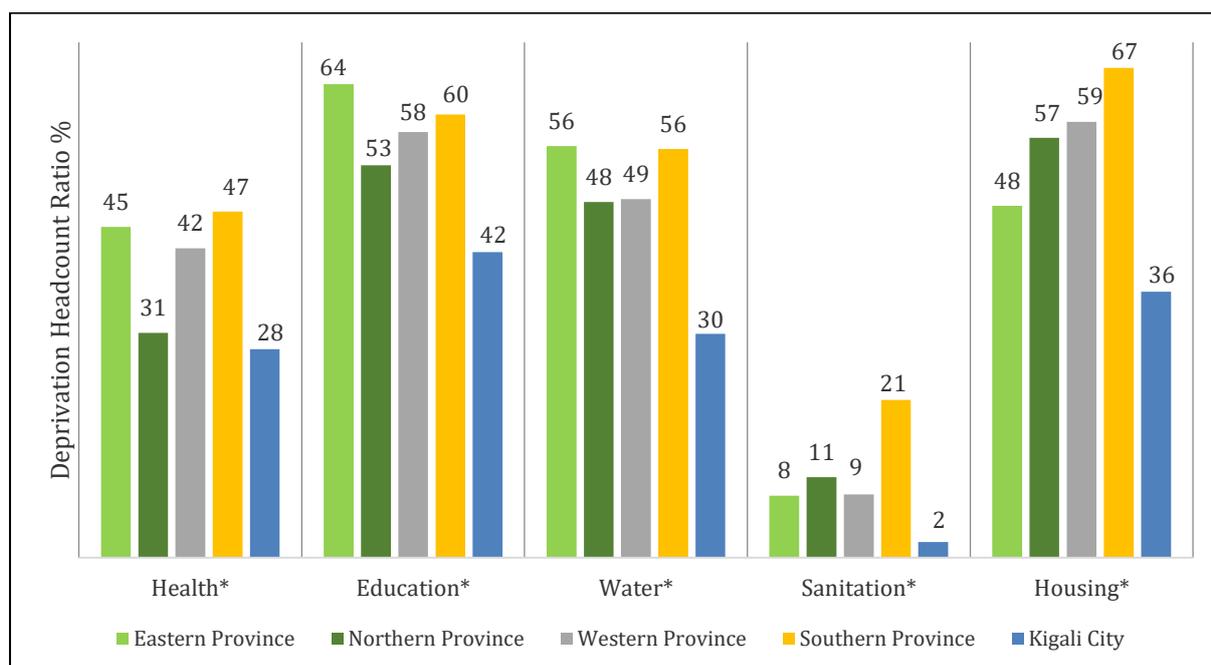
Source: Produced by NISR based on data from EICV5 2016/17

Figure 2.23 shows that children living in larger households are less likely to be deprived in all dimensions. Generally, households have to invest in housing, education and water, regardless of household size. Therefore, small households pay more per person to have the same conditions.

There are no significant sex differences for this age group, except for education dimension where boys are more deprived than girls (62.4% compared to 52.1%-figure 2.24).

Figure 2.23: Deprivation rate in each dimension of a child's wellbeing for children 15-17 years old by household size
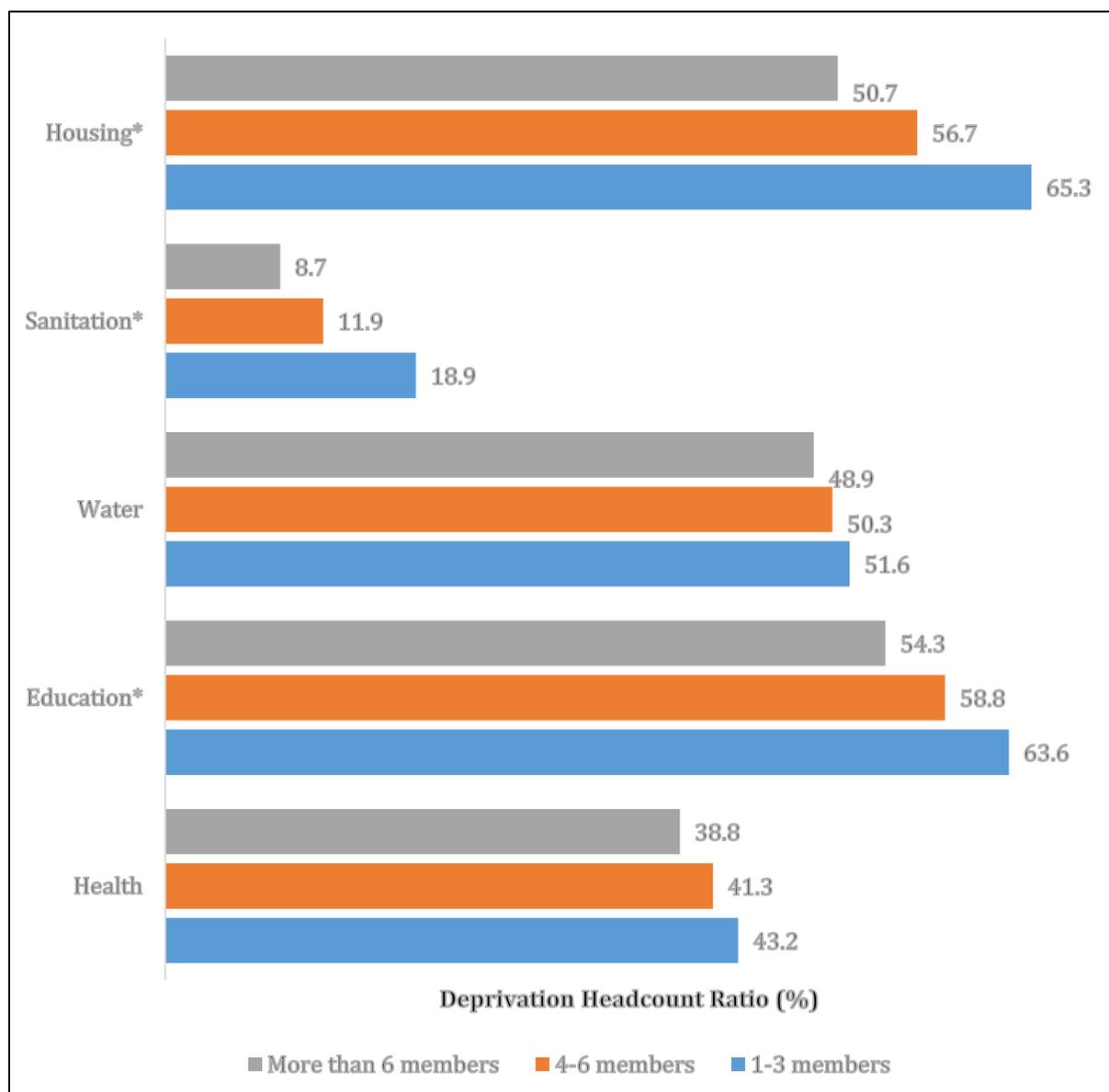
Source: Produced by NISR based on data from EICV5 2016/17

Figure 2.24: Deprivation rate in each dimension of a child's wellbeing for children 15-17 years old by sex of the child
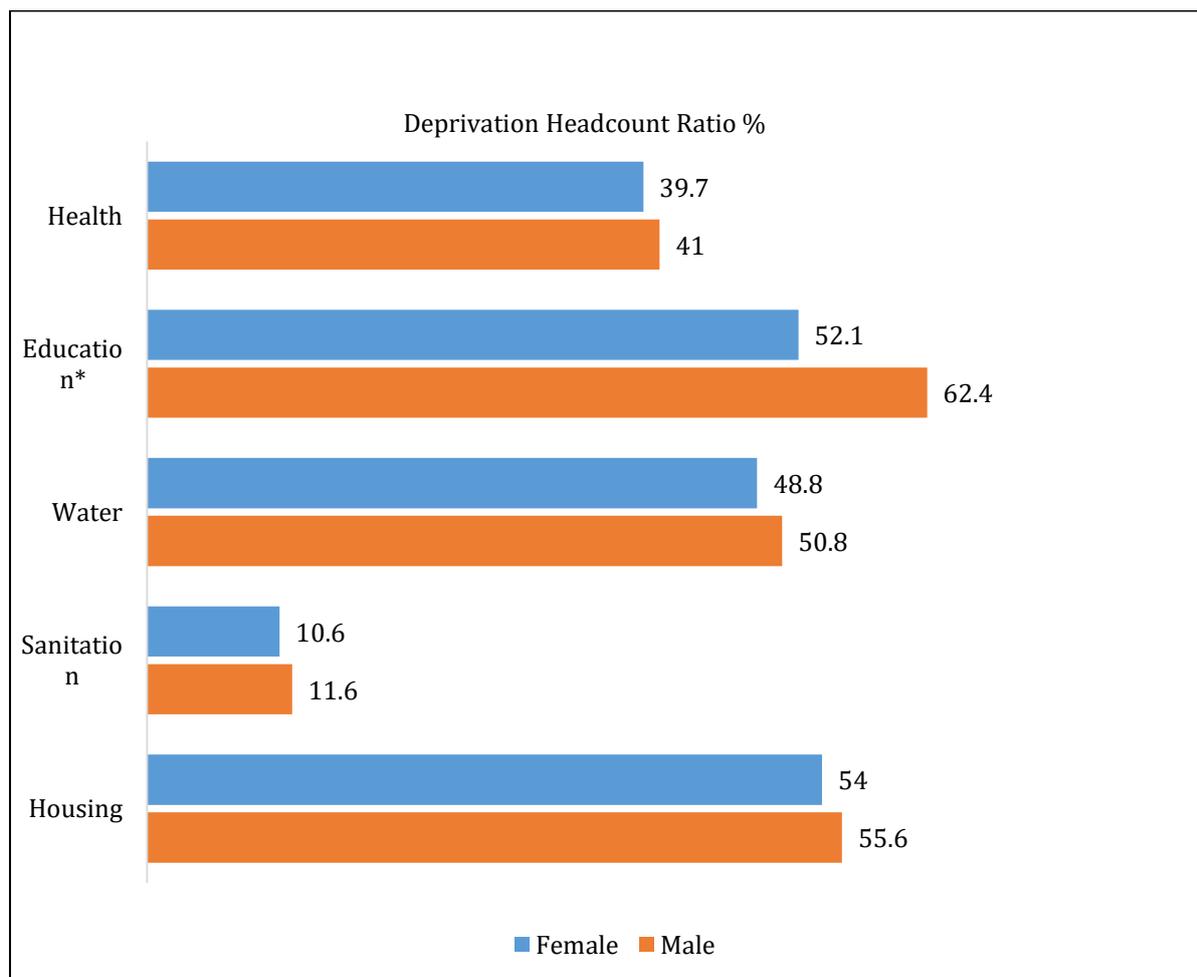
Source: Produced by NISR based on data from EICV5 (2016/17)

The education level of the household head has an important influence on the deprivation experienced by children. Children living in households where the head has no education have higher deprivation rates in all dimensions (Figure 2.25). The largest distinction can be observed in the dimension of sanitation and education: Children with a household head who did not attend any level of education are five times more deprived in the dimension of sanitation compared to children with household head who completed secondary or higher education (13.9% and 2.55% respectively). Twice as many children with an uneducated household head are deprived in the dimension of education compared to children with a household head who completed secondary or higher education (66.6% and 32.6% respectively).

Figure 2.25: Deprivation rate in each dimension of child's wellbeing for children 15-17 years old by education level of the household head
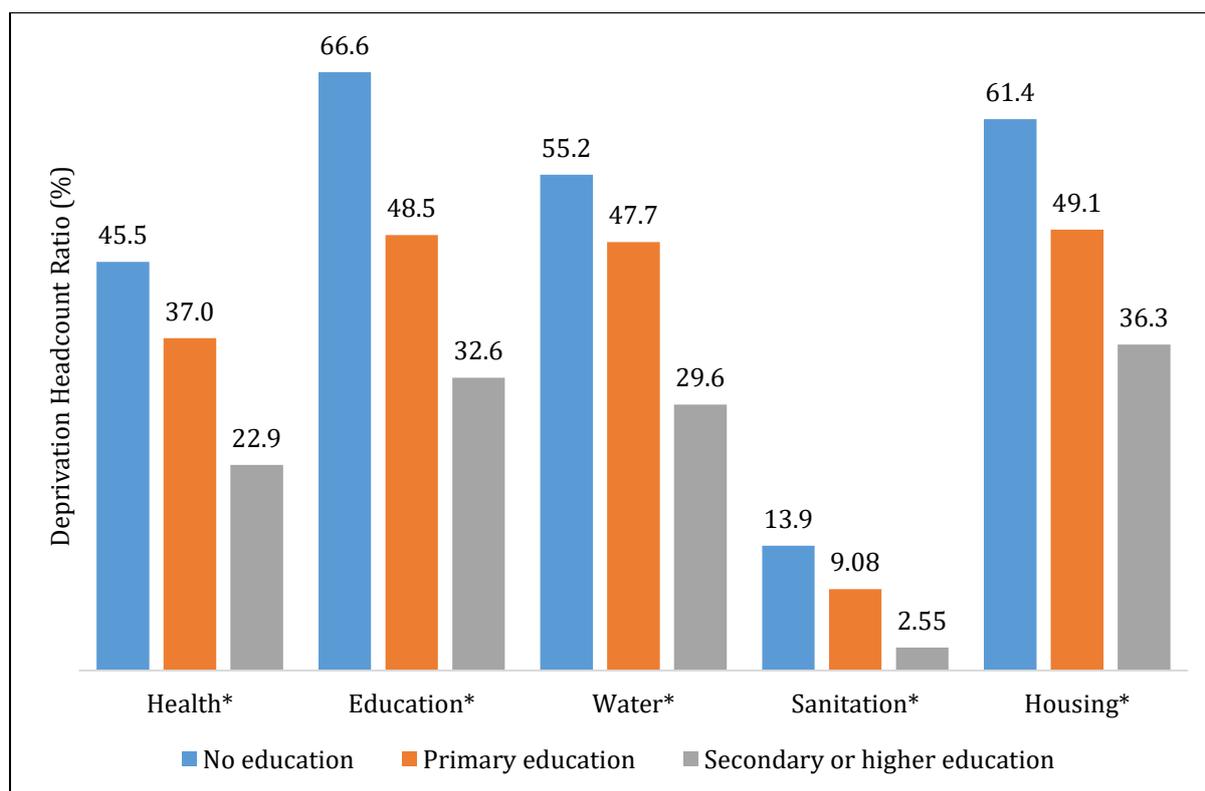
Source: Produced by NISR based on data from EICV5 (2016/17)

2.2.2. Multidimensional deprivation analysis

a. Distribution of deprivations

Figure 2.26 shows the distribution of deprivations for children aged 15-17 years at national level. It is observed that 10.8% of children aged 15-17 years do not experience any deprivation, but the highest proportion of them nationally experience two deprivations (27.7%) while 2.2 % are deprived in all five dimensions. Figure 2.27 indicates that the highest proportion (26.3%) of children residing in urban areas do not experience any deprivation compared to only 7.6% of children in rural areas. The situation is also the same for children deprived in only one dimension. In this age group however, the proportion of children residing in rural areas are more likely to be deprived in at least two dimensions compared to children residing in urban areas. The difference is 8.1% points for children deprived in two dimensions, 11.1% points for those deprived in three dimensions and 8.6% points for those deprived in four dimensions. For those deprived in all five dimensions, there is no difference between rural and urban area.

Figure 2.26: Deprivation distribution for children 15-17 years old at the national level
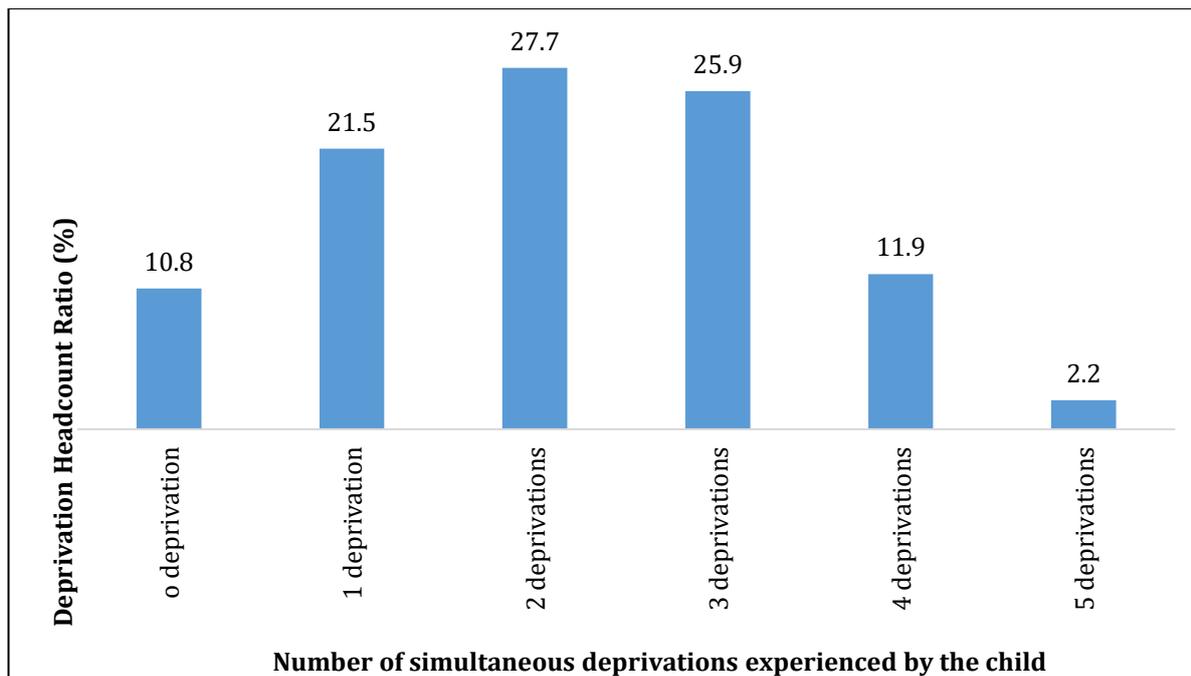
Source: Produced by NISR based on data from EICV5 (2016/17)

Figure 2.27: Deprivation distribution for children 15-17 years old by area of residence
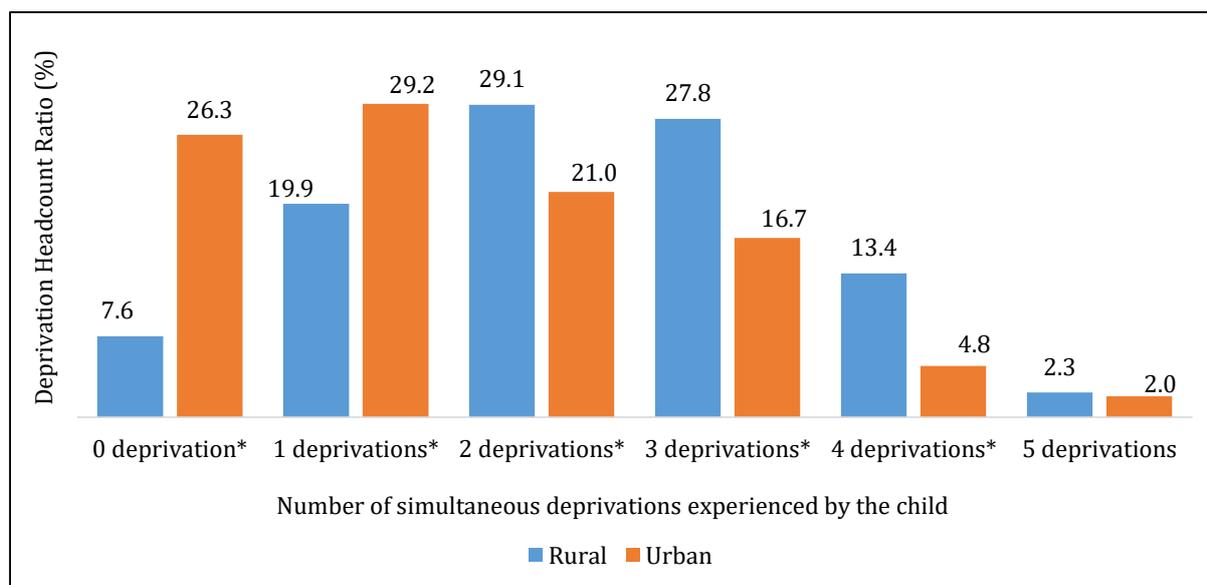
Source: Produced by NISR based on data from EICV5 (2016/17)

Over a quarter (27%) of the children in Kigali City suffer no deprivation at all. The contrast with other provinces is significant, as only 9% in Eastern and Western provinces, 12% in Northern province and 5% in Kigali city experience no deprivations. Southern Province is lagging behind with 30% of children experiencing 3 deprivations, 17% experiencing 4 deprivations and 4% of children facing all five deprivations-figure 2.28.

Figure 2.28: Deprivation distribution for children 15-17 years old by province
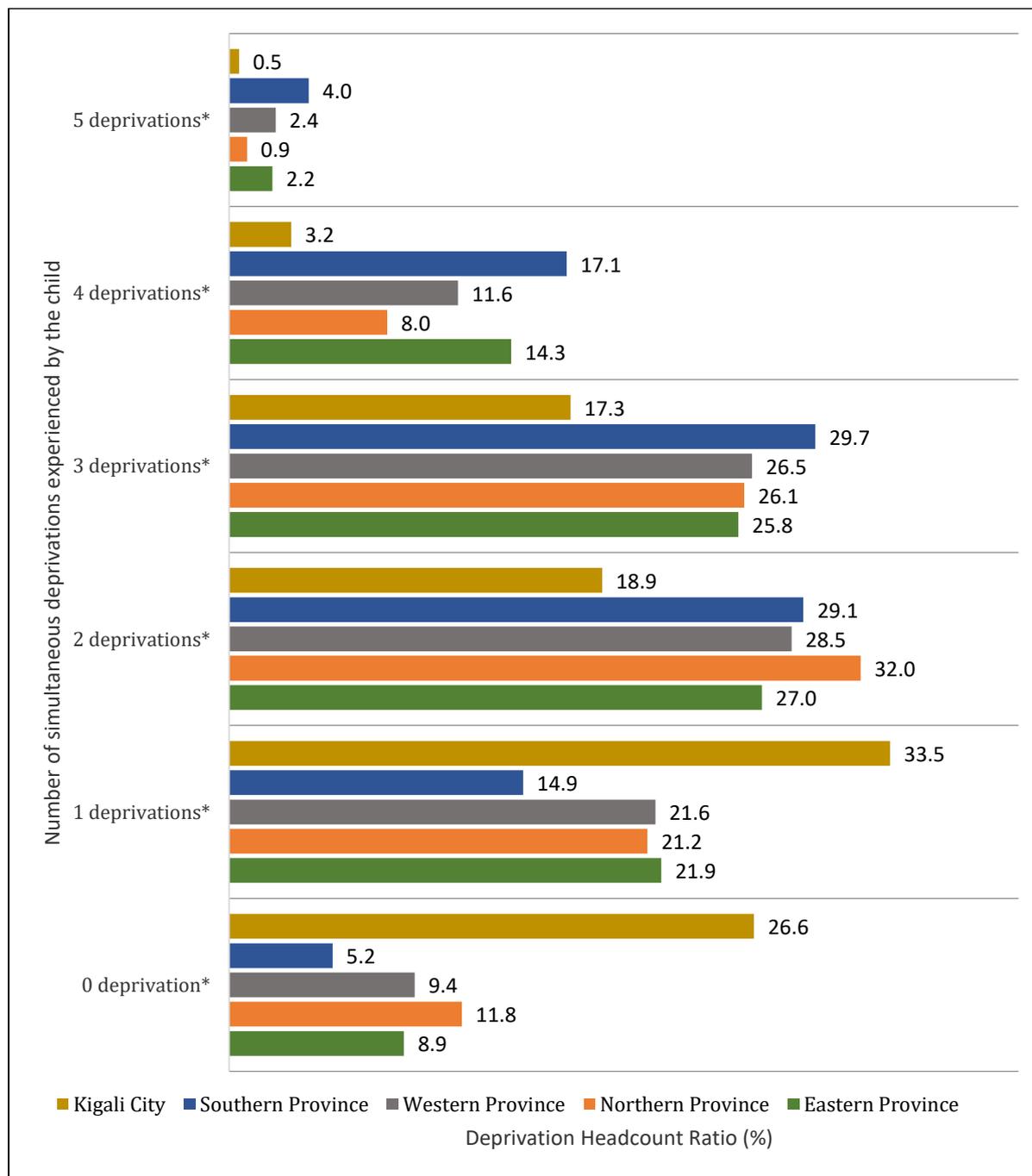
Source: Produced by NISR based on data from EICV 2016/17

Children living in a household with three or fewer members are significantly more likely to experience several deprivations (between 4 and 5 deprivations)- figure 2.29. The inverse is true for children living in larger households (more than 6 members) where they experience fewer deprivations (between 0 and 1). Despite these differences based on family size, it is interesting that, the highest proportion of children regardless of household size in which they live experience lower counts of deprivations (between 2 and 3 deprivations), whereas the lowest proportion of children experience the highest count (between 4 and 5 deprivations).

By gender of the child, males seem to be more deprived in at least 2 deprivations compared to females, but the differences are not too high (Figure 2.30). It is in this perspective that, most children regardless of their sex face at least two deprivations.

Figure 2.29: Deprivation distribution (%) for children 15-17 years old by household size
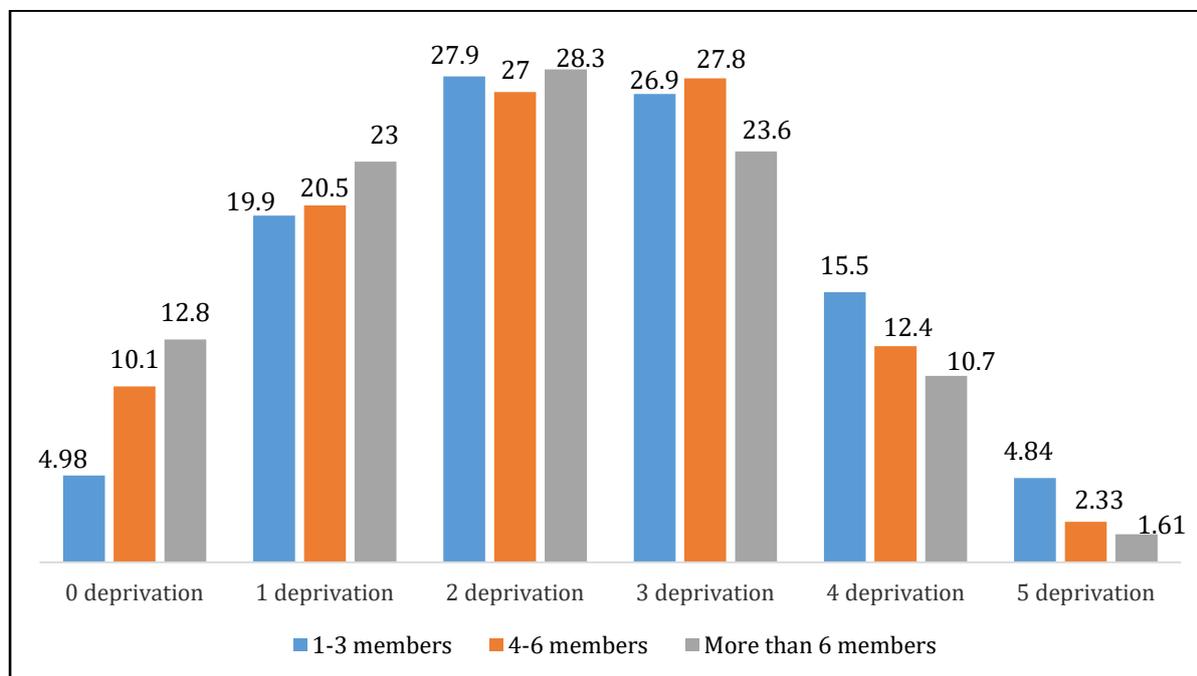
Source: Produced by NISR based on data from EICV 2016/17

Figure 2.30: Deprivation distribution (%) by sex of the children 15-17 years old
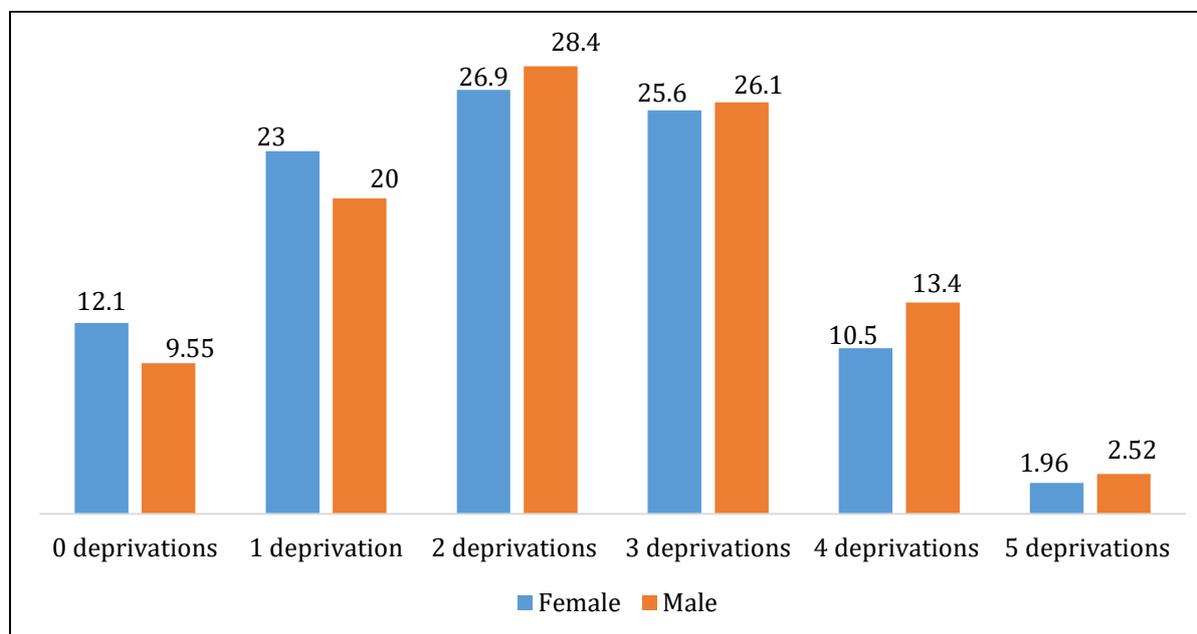
Source: Produced by NISR based on data from EICV 2016/17

Multidimensional child poverty for children aged 15-17 years is more prominent in female-headed households (facing at least three deprivations), and less prominent in male-headed households (facing between 0 and 2 deprivations). This implies that, the absence of a male-headed household is associated with higher multidimensional child poverty (figure 2.31).

Figure 2.31: Deprivation distribution (%) for children 15-17 years old by sex of the household head
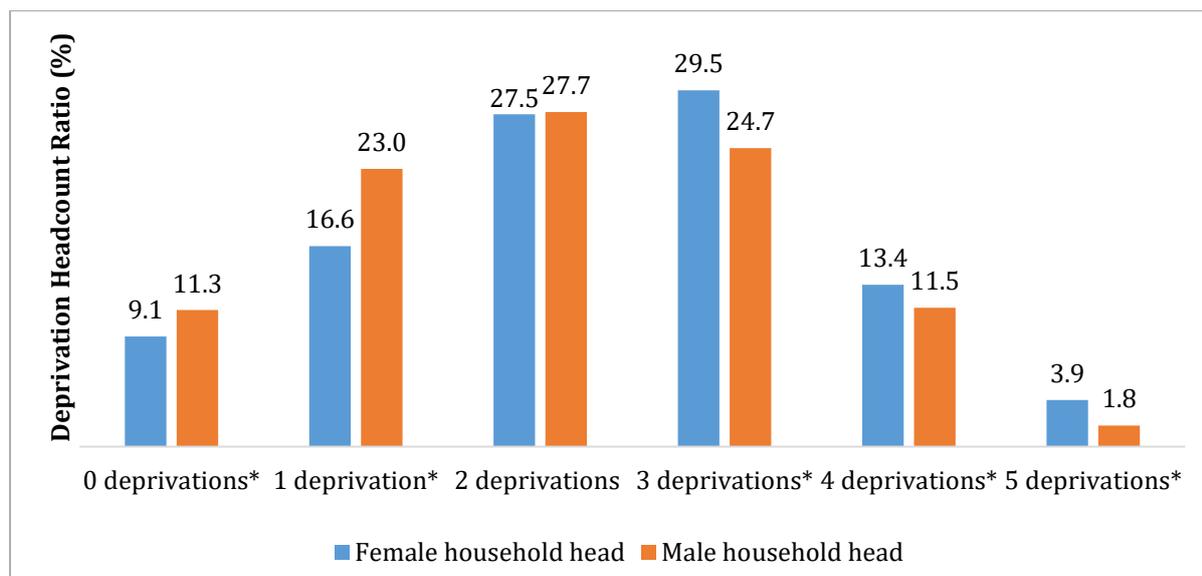
Source: Produced by NISR based on data from EICV (2016/17)

Almost two thirds (62.2%) of the children aged 15-17 whose household head has secondary or higher education experience no deprivations or only 1 deprivation (29.5% and 32.7%, respectively). Children whose household head did not attain any level of education or with primary education are significantly more likely to face at least three deprivations (52.7%) compared to only 11.1% for children living in secondary or higher educated households. Around 28.9% of children with a household head who did not attain any education or with only primary education are deprived in four or five dimensions compared to only 2.0% of children living with secondary or higher educated households (Figure 2.32). This clarifies that, children living with no educated or with only primary educated households are 14 times more deprived in four or five dimensions compared to children living in secondary or higher educated household heads.

Figure 2.32: Deprivation distribution (%) for children 15-17 years old by education level of the household head
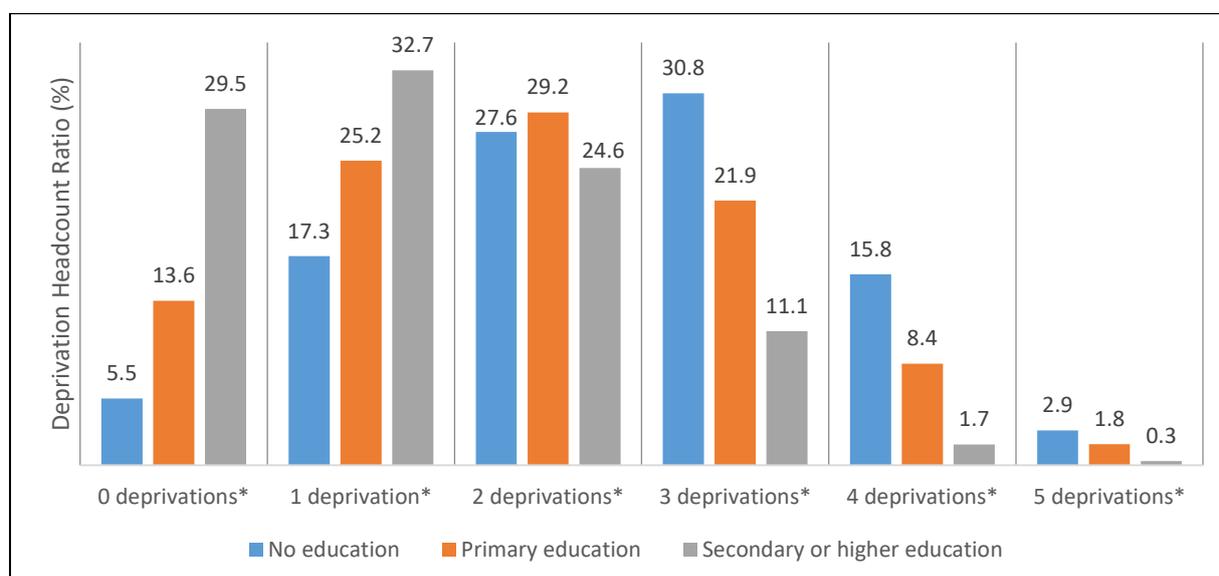
Source: Produced by NISR based on data from EICV 2016/17

b. Multidimensional deprivation headcount (H) for children 15-17 years old

At national level, 89.2% of children aged 15-17 (Figure 2.33) are deprived in at least one dimension and 40.0% of the children of this age group are multidimensionally poor (facing deprivations in three dimensions). Almost 2% of children are deprived in all five dimensions.

Figure 2.33: Multidimensional deprivation headcount (H) for children 15-17 years old at national level
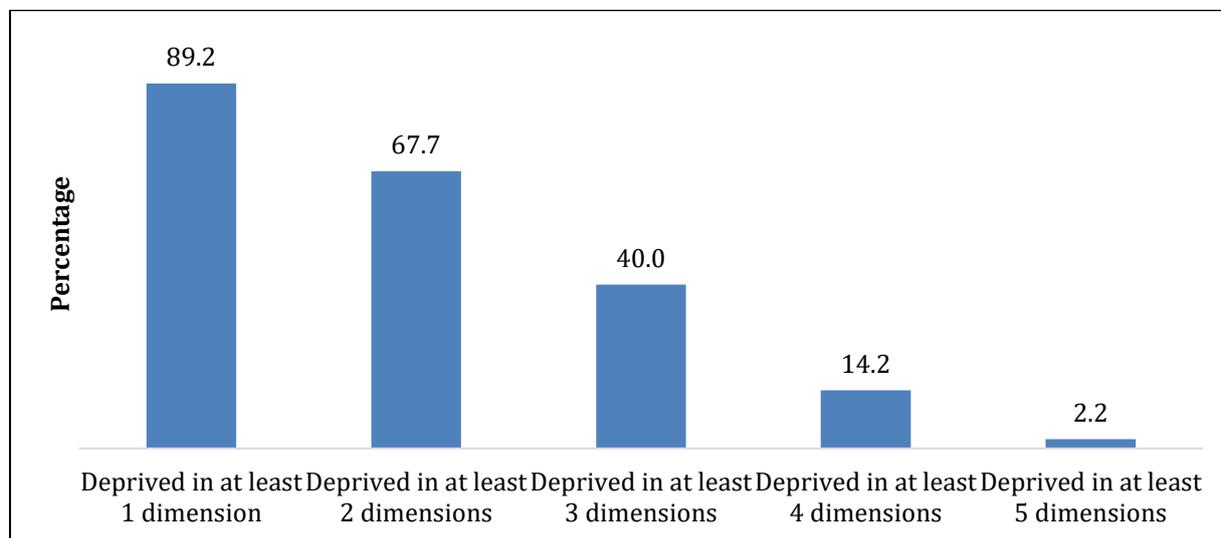
Source: Produced by NISR based on data from EICV 2016/17

c. The average intensity (A) and the multidimensional poverty Index (MO) for children 15-17 years old

At the national level, 40% of children aged between 15-17 years are multidimensionally poor (figure 2.34). Rural areas and Southern province have the highest deprivation rates with 44% and 51% respectively of children deprived in at least three dimensions. The lowest incidence of poverty is reported in Kigali city (21%) and Northern province (35%).

The average intensity among the deprived children does not vary across areas and provinces. The multidimensional child poverty index (M0) is lowest (0.1) in Kigali City followed by Northern province (0.2) and highest in Southern province (0.4). In this age group, children living in urban areas are less deprived (at 0.2 of multidimensional poverty index) than children living in rural areas (0.3).

Figure 2.34: Indices at the national level and by area of residence and province for children 15-17 years old who are deprived in at least 3 dimensions
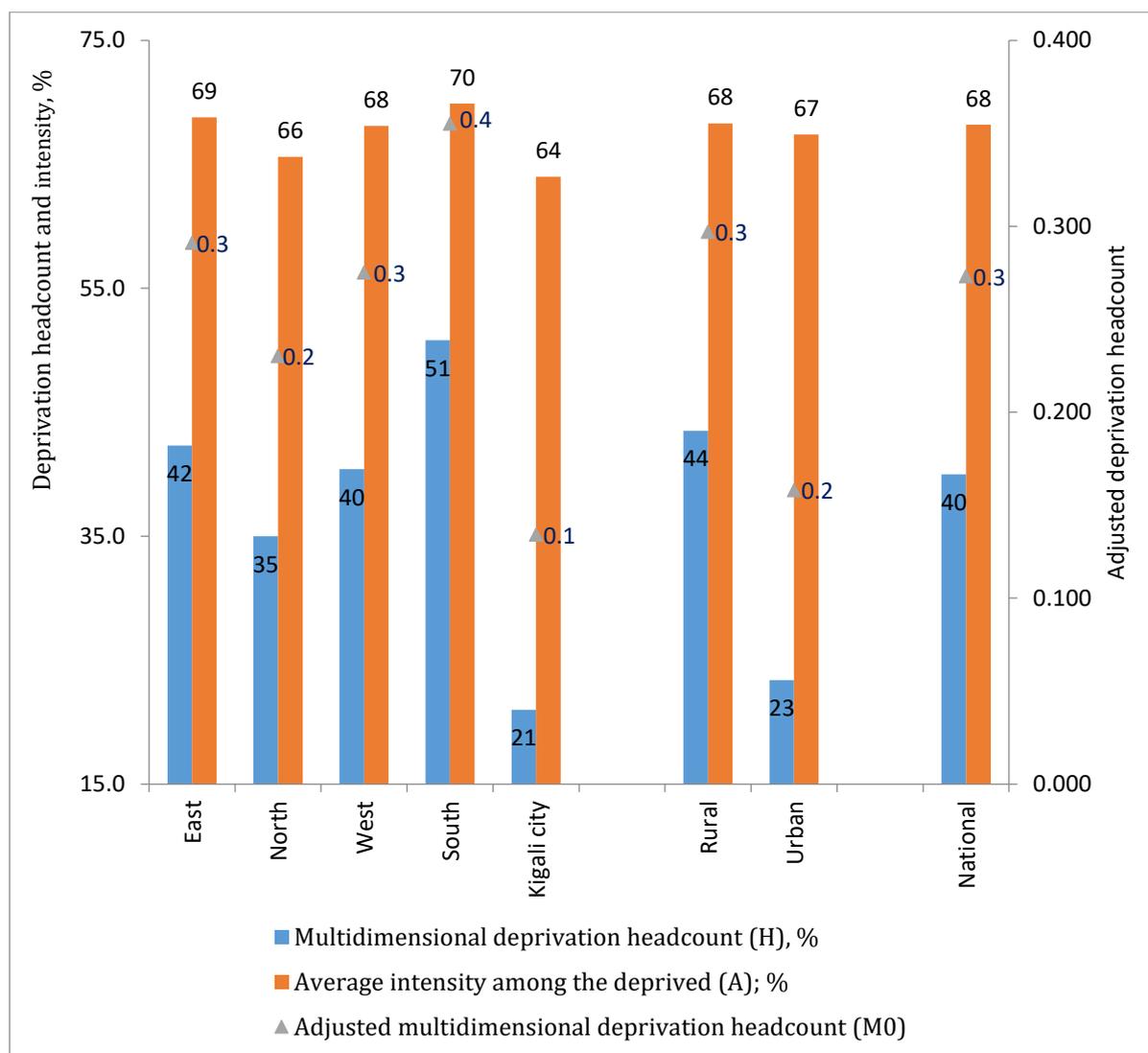
Source: Produced by NISR based on data from EICV 2016/17

d. Contribution of each dimension to deprivation level children 5-17 years old

The decomposition analysis for children aged 15-17 years was also done to understand which dimensions contributes most to the multidimensional deprivation index and overall deprivation levels. At the national level, education dimension for children aged 15-17 years contributes the most (25.5%) to national deprivation level, followed by the housing dimension (24.6); water dimension (22.6%) and Health dimension (20.4%). Sanitation contributes the least to Multidimensional poverty (7.0%).

Health and Sanitation contribute slightly more to deprivation levels in rural than in urban areas (1.9% points and 1.6% points respectively), whereas Housing and Education contribute more in urban areas than in rural areas (2.6% and 1.3% points respectively). Despite these small differences, the decomposition presented in Figure 2.33 indicates almost similar patterns for national level and in both urban and rural areas.

Figure 2.35: Decomposition of the multidimensional child poverty index for children 15-17 years old at the national level and by area of residence
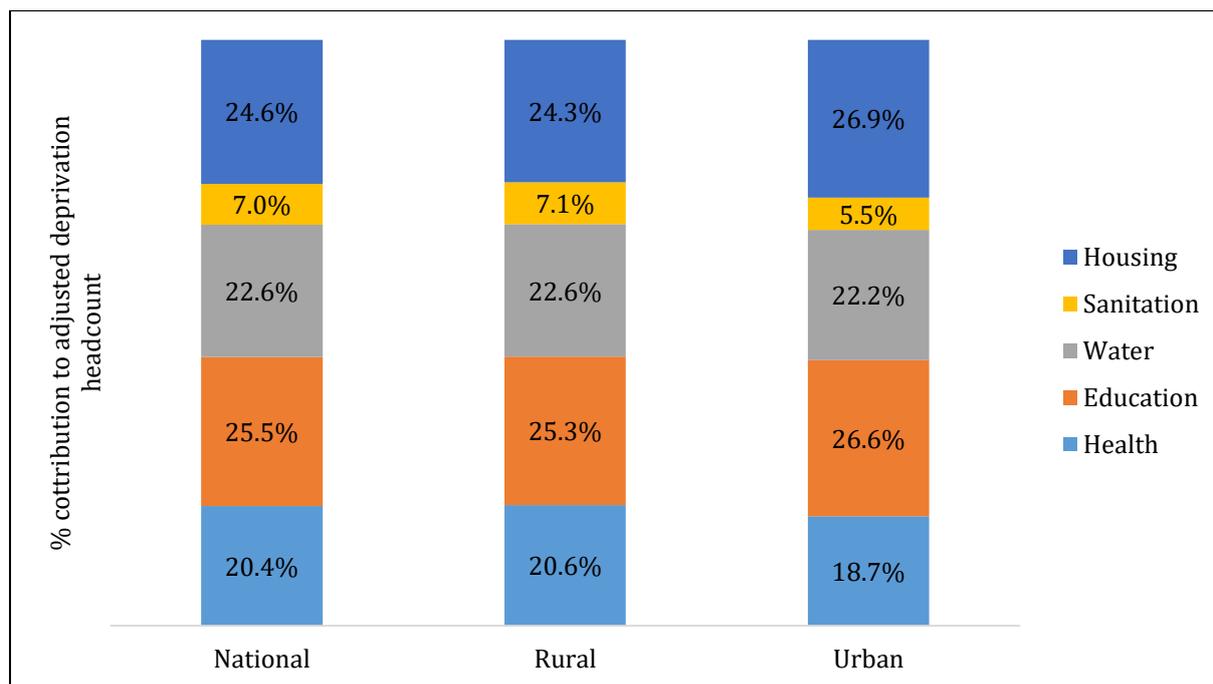
Source: Produced by NISR based on data from EICV 2016/17

e. Deprivation overlap analysis

Figure 2.36 highlights how different deprivations overlap for children aged 15-17 years. only a small proportion of children experience deprivation in only one dimension – most children suffer from several deprivations. This means that, most children who are deprived in one dimension are also simultaneously deprived in three or more other dimensions. For example, of all children deprived in Housing, only 6.5% are deprived only in housing dimension and 11.4% are deprived in three other dimensions. Education and housing appear to be the dimensions within which there are most significant overlaps, followed by water.

Figure 2.36: Deprivation overlaps for children 15-17 years old by dimension
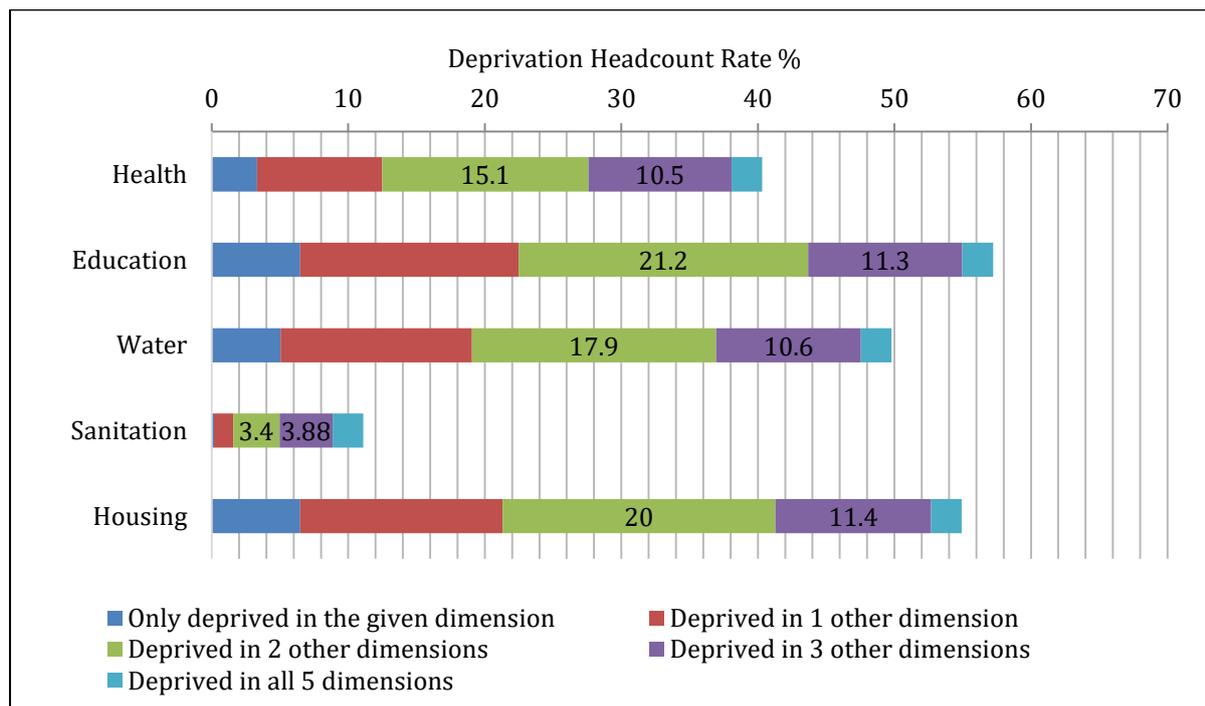
Source: Produced by NISR based on data from EICV 2016/17

The findings (figure 2.37) further assert that 20.1% of children aged 15-17 years are at the same time deprived in Education, Water and Housing dimensions. About 36.2% of children aged 15-17 years are at the same time deprived in two dimensions (11.5% in Education and water, 9.7% in Water and Housing, and 15.0% in Education and Housing); 29.2% are deprived in only one of the three respective dimensions (10.7% only in education, 8.5% water only and 10.0% only housing). Only 14.5% of children aged 15-17 years are non-deprived in the three dimensions.

The percentage of people aged 15-17 years who are at the same time deprived in three dimensions (Education, Water and Housing) is higher in rural area (21.5%) than in urban area (13.0%). The percentage of those deprived in two dimensions (education and water; water and housing; education and housing) is much higher in rural areas (39.0%) compared to urban areas (23.3%).

Figure 2.37: Overlap between education, water and housing for children 15-17 years old at the national level and by area of residence

National

Non- Deprived (14.5%)

Education only (10.7%)

Education & Water (11.5%)

Education & Housing (15.0%)

All (20.1%)

Water only (8.5%)

Only housing (10.0%)

Water & Housing (9.7%)

Source: Produced by NISR based on data from EICV 2016/17

Rural

Only Education (10.3%)

None deprived (10.7%)

Education & Water (12.5%)

Education & Housing (16.1%)

All (21.5%)

Only Water (8.7%)

Only Housing (9.8%)

Water & Housing (10.4%)
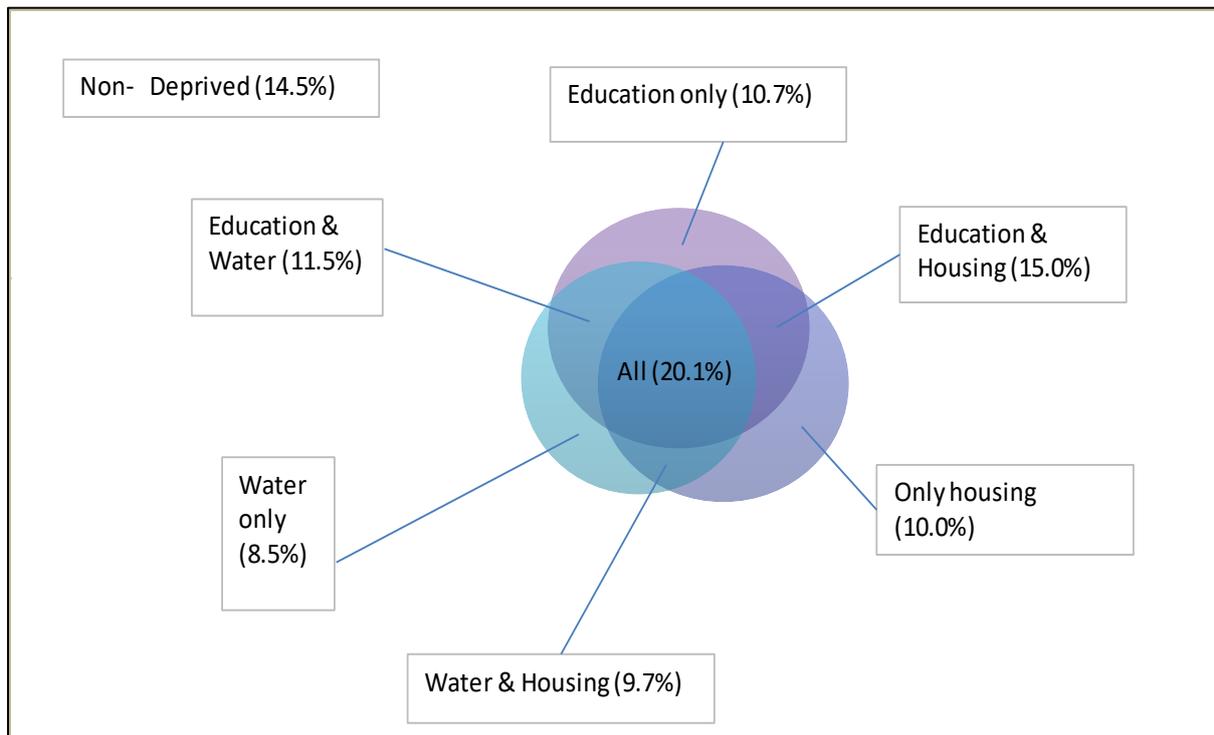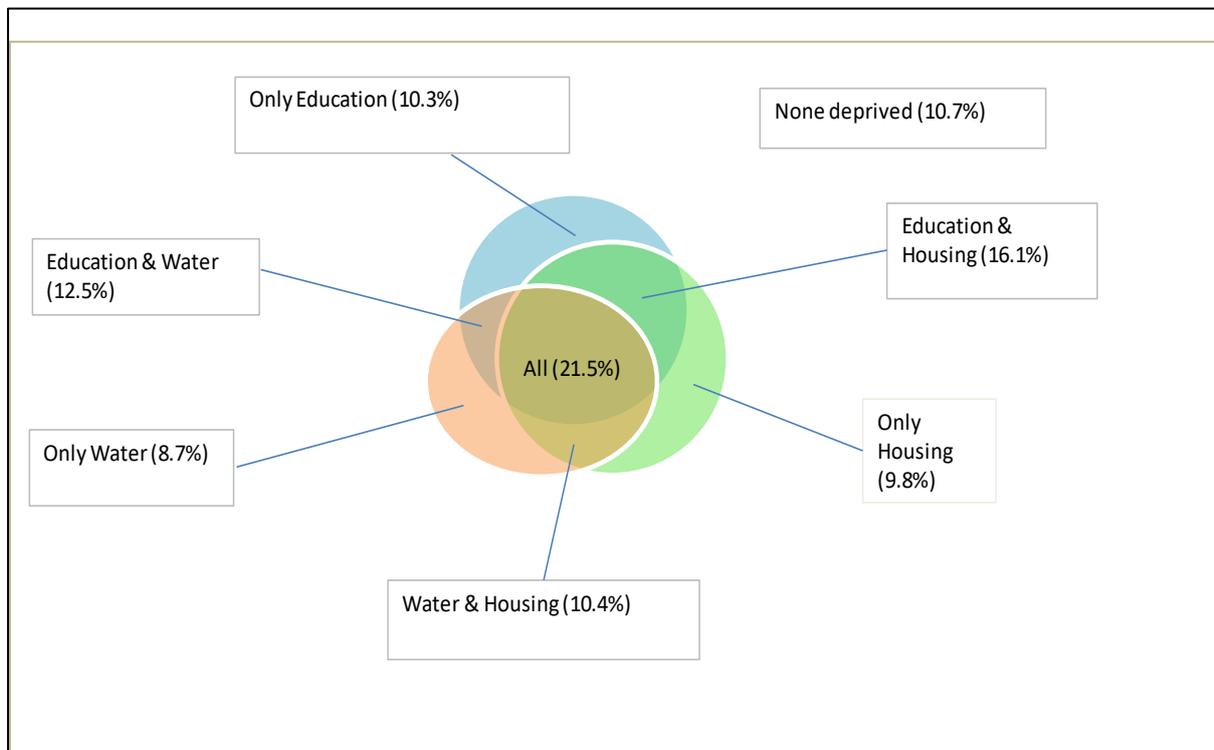
Source: Produced by NISR based on data from EICV5 (2016/2017)

Urban
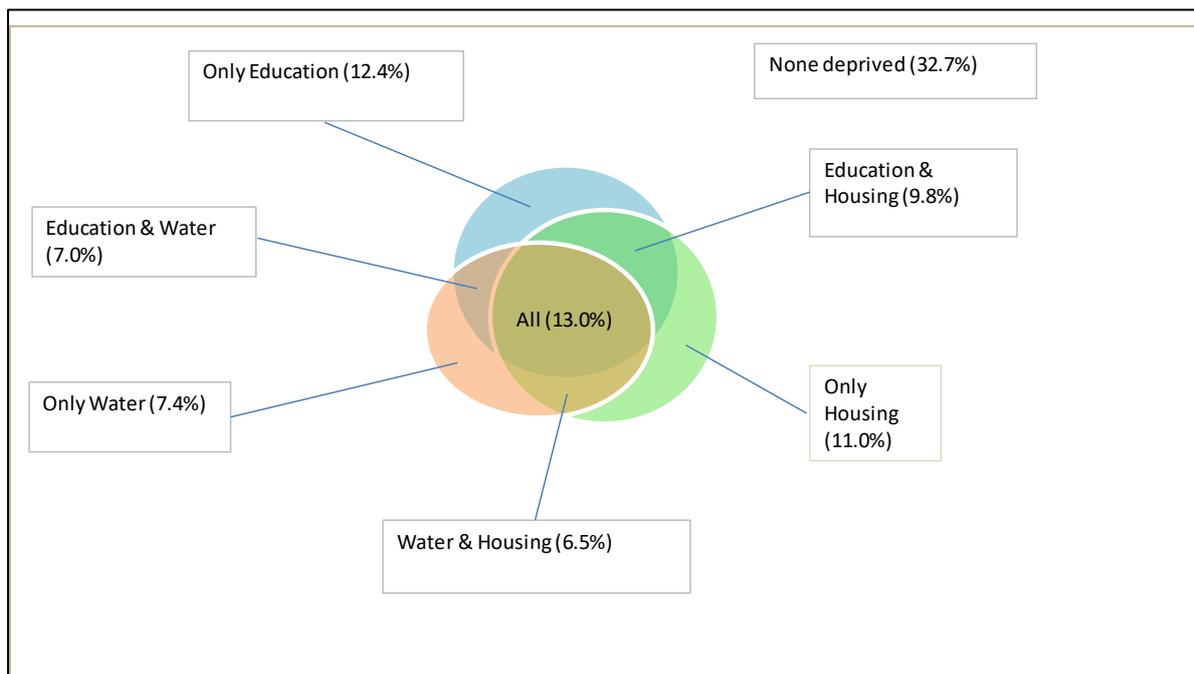
Source: Produced by NISR based on data from EICV5 (2016/2017)

Figure 2.38 shows the overlaps of multidimensional child deprivation with the monetary poverty. The results show that in Rwanda, based on the five dimensions considered, 21.6% of children aged 15-17 are simultaneousely multidimensionally deprived and monetary poor, meaning that they experience both monetary poverty and deprived in other dimensions of wellbeing such as Water, Education, Housing, Health and Sanitation. Children who are multidimentionally deprived but not monetary poor represent 18.4% while those who are only monetary poor is 17.6%. The proprtion of none poor (those who don't experience monetary poverty and multidimensional poverty) is 42.3%

Figure 2.38: Overlap between monetary and multidimensional deprivation for children 15-17 years old at national level
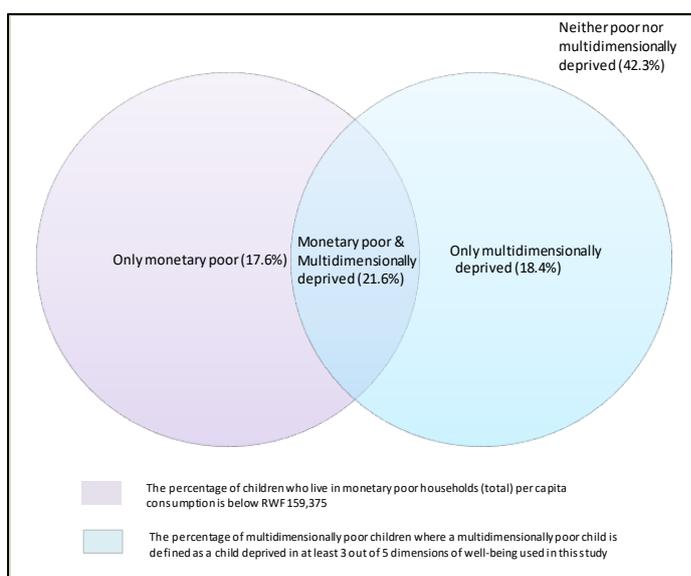
Source: Produced by NISR based on data from EICV5 (2016/2017)

2.3: Trends in poverty reduction for children 5-14 years old

2.3.1. Single sector analysis

This section covers the multidimensional child poverty (deprivations) trend analysis from 2010/11 to 2016/17 for children aged 5-14, in the dimensions of housing, sanitation, water, education and health. There have been improvements in this age group: a considerable decrease in deprivation in the dimension of housing is observed, with the deprivation rate of 80.6% in 2010/11 dropping to 67.7% in 2013/14 and to 60.4% in 2016/17 marking a significant improvement over a six-year period. This is partly explained by the marked improvement in the indicator 'lighting source', where 14.9% of the children were deprived in 2016/17 compared to 59.1% in 2010/11. However, it is important to notice that in housing dimension, the percentage of children aged 5-14 deprived in 'garbage disposal' increased from 30.2% in 2010/11, 38.6% in 2013/14 and to 46.6% in 2016/17. The dimensions of Health and Sanitation have also improved from 2010/11 to 2016/17, the deprivation rate for health dimension dropping from 53.1% in 2010/2011 to 44% in 2016/17, and also deprivation in Sanitation dropped from 23.4% in 2010/2011; 15.3% in 2013/14; to 13.1% in 2016/17. For the education dimension there is no improvement observed between 2010/11 and 2013/14, only a slight decrease of 1.2% points between 2013/14 and 2016/17 is noted. The water dimension deprivation rate has dropped by 2.6% between 2010/11 and 2013/14 but has remained stable, around 52% between 2013/14 and 2016/17 due to the indicator 'distance to water source' that slightly increased between the two last periods (Figure 2.39 & 2.40).

Figure 2.39: Deprivation rates (%) in each indicator of a child's wellbeing for children 5-14 years old at national level
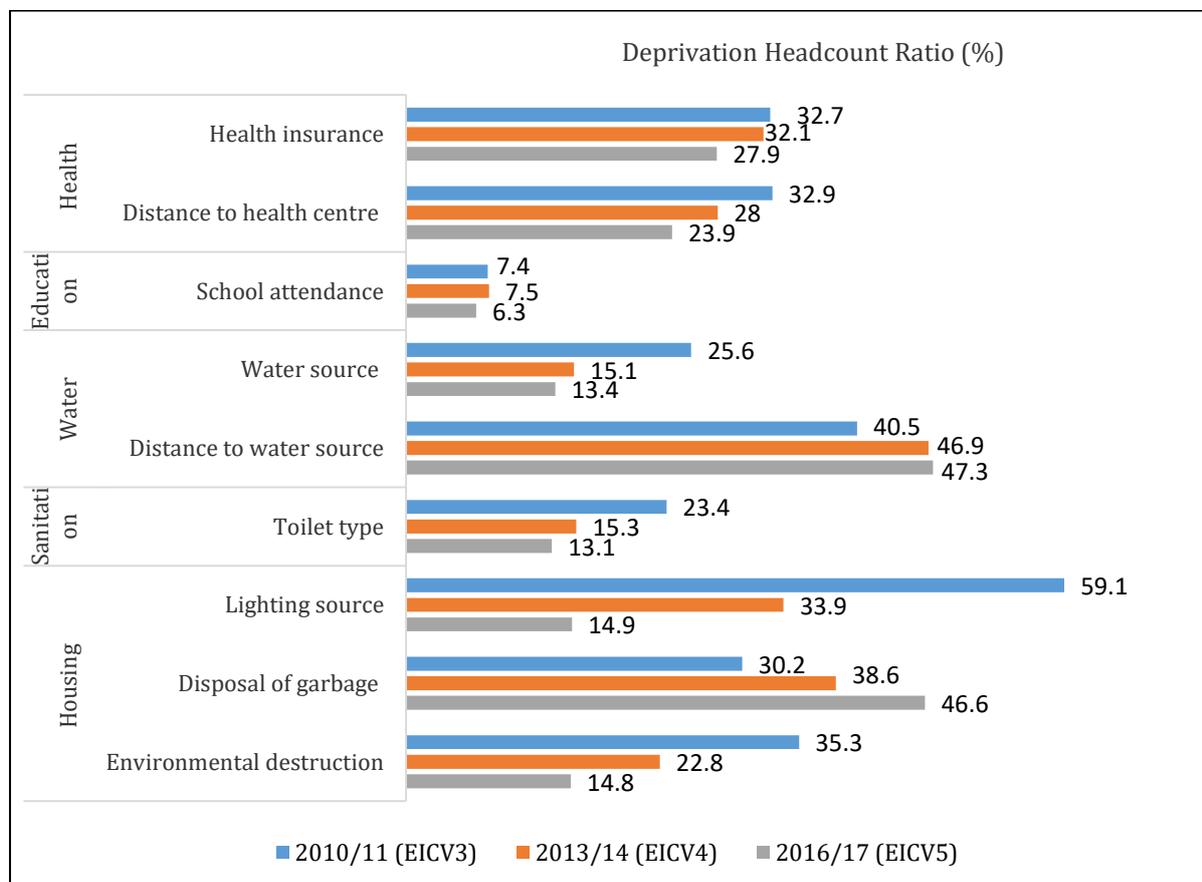
Source: Produced by NISR based on data from EICV 2010/11, 2013/14 & 2016/17

Figure 2.40: Deprivation rate in each dimension of a child's wellbeing for children 5-14 years old at national level
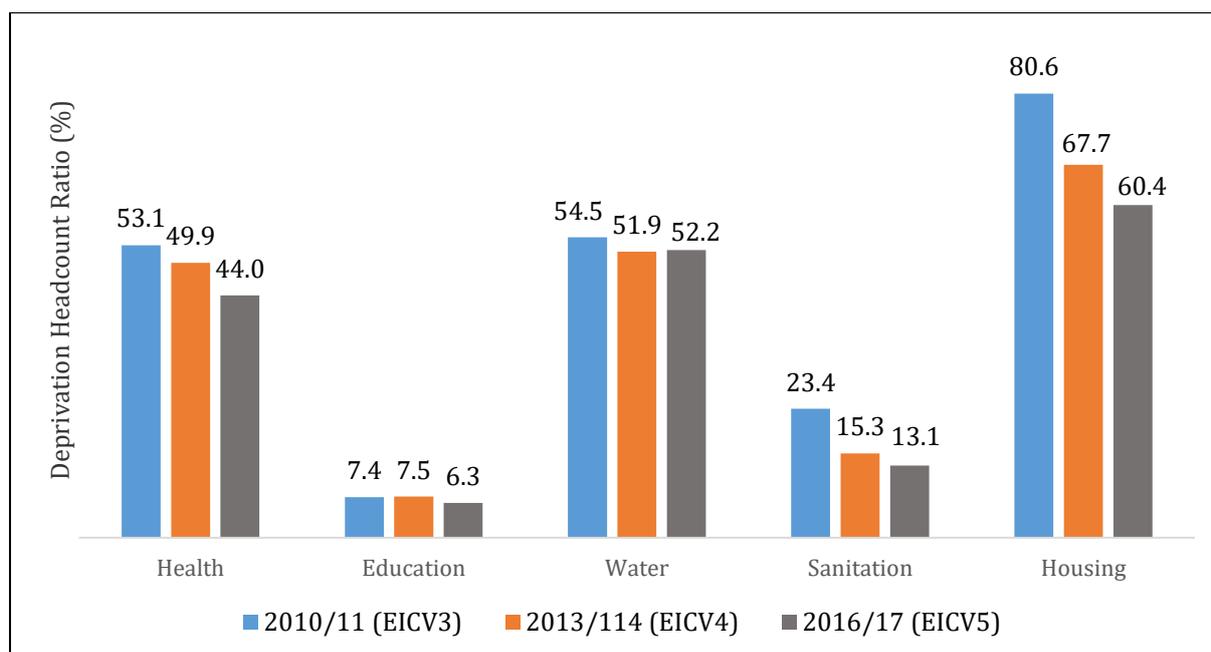
Source: Produced by NISR based on data from EICV 2010/11, 2013/14 & 2016/17

2.3.2 Multidimensional deprivation analysis

a. Distribution of deprivations

There has been a large increase in the number of children who experience zero or only one deprivation. In 2010/11, only 7.2% of children aged 5-14 years did not face any deprivation at all, while in 2016/17, the proportion of children who were not deprived in any dimension almost doubled to 14.1%. Moreover, children that are facing three out of five deprivations decreased over time, from 28.3% in 2010/11 to 20.3% in 2016/17, and this is the same for those deprived in four out of five dimensions (figure 2.41). This shows a significant improvement for children deprived in the highest counts of deprivations (3/5 or 4/5 deprivations) in the last six years.

Figure 2.41: Deprivation distribution for children 5-14 years old at the national level
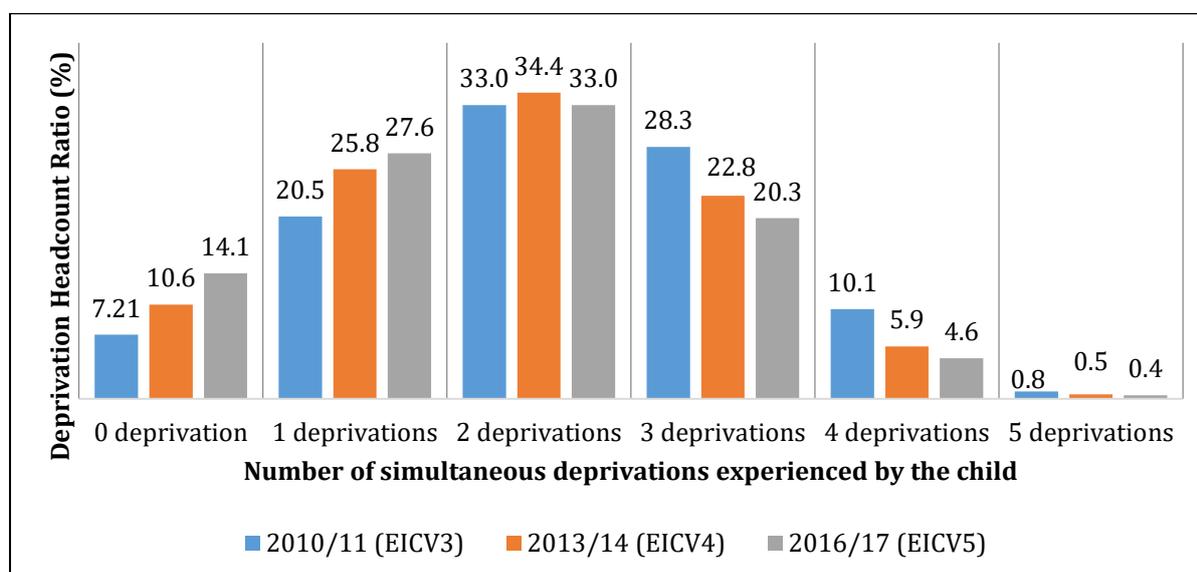
Source: Produced by NISR based on data from EICV5 (2016/2017)

b. Multidimensional child poverty indices

Multidimensional poverty decreased significantly for children aged 5-14 years: in 2010/11, 39.3% of children faced at least three deprivations compared to only 25.3% in 2016/17. The average intensity among the deprived slightly changed from 2010/11 to 2013/14 (from 66.0% to 64.8%), and almost unchanged from 2013/14 to 2016/17. The multidimensional child poverty index (M0) decreased from 0.26 in 2010/11, 0.19 in 2013/14 to 0.16 in 2016/17 (Table 2.1).

Table 2. 1: Indices for children 5-14 years old at the national level

Period	Nb of deprivation	Multidimensional deprivation Headcount (H)	Average intensity among deprived (A); %	Adjusted multidimensional deprivation headcount (MO)
EICV3 (2010/11)	Deprived in at	39.3	66.0	0.26
EICV4 (2013/14)	least 3	29.2	64.8	0.19
EICV5 (2016/17)	dimensions	25.3	64.3	0.16

Source: Produced by NISR based on data from EICV 2010/11, 2013/14&2016/17

c. Deprivation overlap

By overlapping three dimensions for each period of EICV surveys, it appears that the percentage of children deprived in three dimensions simultaneously (health, water and housing dimensions) has decreased over time, from 27.6% in 2010/11 to 24.4% in 2013/14 and then 17.5% in 2016/17. This denotes the decrease of the vulnerability of the children aged 5-14 by 10.1% in the last six years. Among children deprived in two dimensions at the same time, the percentage of those deprived in water and housing is the highest but also shows a decreasing trend from 18.7% in 2010/11 to 16.6% in 2013/14 and remained unchanged up to 2016/17. On the other hand, the proportion of non-deprived children increased from 7.8% in 2010/2011, 11.5% in 2013/14 to 15.0% in 2016/2017 (figures 2.42).

Figure 2.42: Venn diagram on the deprivation overlaps between health, water and housing for children 5-14 years old at the national level

2010/11
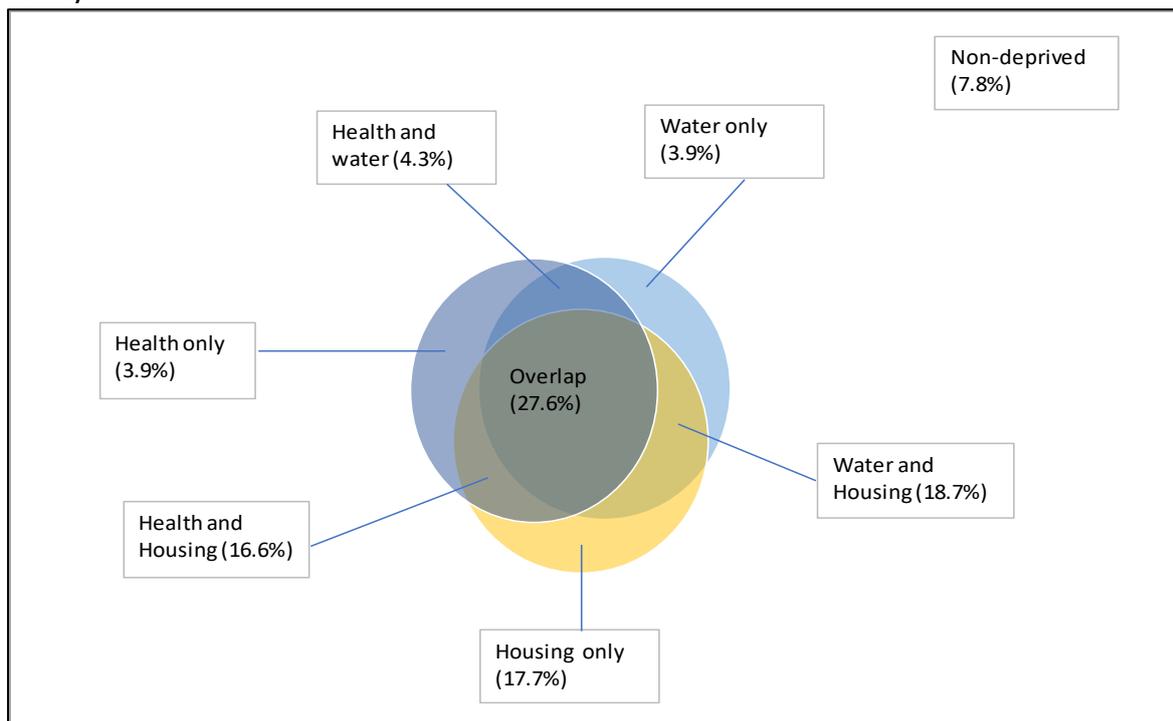
Source: Produced by NISR based on data from EICV3 (2010/2011)

2013/14
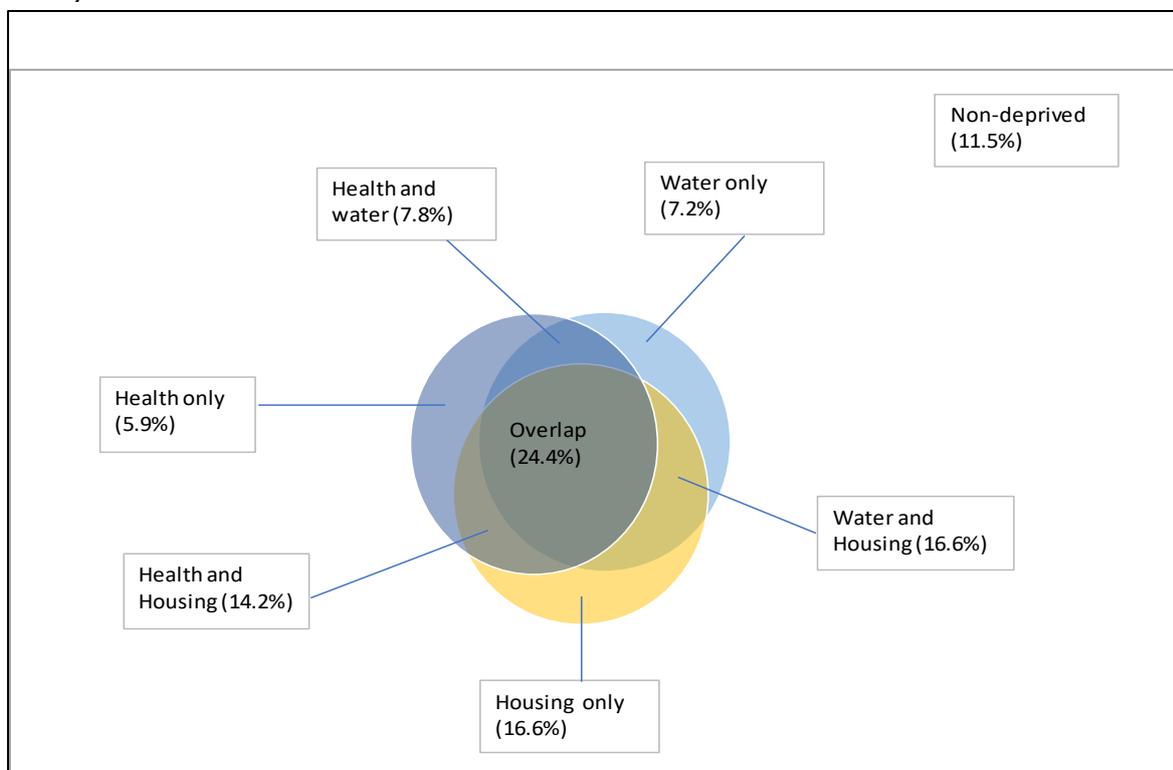
Source: Produced by NISR based on data from EICV4 (2013/2014)

2016/17
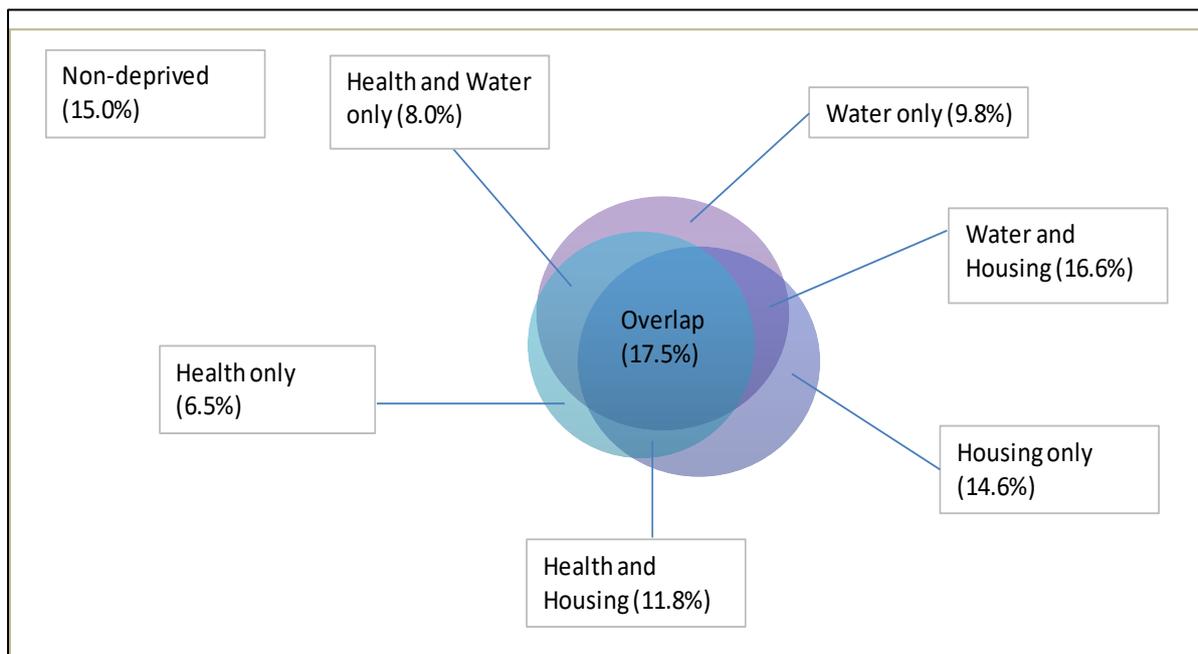
Source: Produced by NISR based on data from EICV5 (2016/2017)

2.4: Trends in poverty reduction for children 15-17 years old

2.4.1. Single sector analysis

This section covers the multidimensional child poverty (deprivations) trend analysis (between 2010/11 to 2016/17) for children aged 15-17 years, in the dimension of housing, sanitation, water, education and health. The difference between this age group and the 5-14 age group are two additional indicators which are literacy and numeracy & school attainment.

The trend analysis of the deprivation rate for the periods of 2010/11, 2013/2014 and 2016/17 shows that children aged 15-17 were doing better in all dimensions between 2010/11 and 2013/2014 particularly in education, housing and sanitation (Figure 2.44).

The deprivation rate of housing decreased by 15.4 % points, which is due to the huge improvement of the indicator 'lighting source' (from 57.6% in 2010/11, 29.9% in 2013/14 to 13.6% in 2016/17)-figure 2.43.

In addition, large improvements are witnessed in the dimension of education: in 2013/2014, 57.9% of children aged 15-17 years were not attending school compared to 71.2% in 2010/2011.

The deprivation rate of sanitation decrease also by 7 % points (20.4% in 2010/11 vs 12.5% in 2013/14).

Inversely, the decrease of the deprivation rate slowed down between 2013/14 and 2016/17 in some dimensions (Figure 2.43 & 2.44);

- Between the two last periods, the deprivation rate dropped by around 7% percentage points in health and housing dimension, while for the education, water and sanitation, there is no improvement observed (figure 2.44).

- The education dimension is in fact affected by the continued increase of the proportion of children 15-17 years that did not complete school from 2010/11 (21.6%) to 2016/17 (30.5%) and by the increase of those who cannot read and count between 2013/14 (14.6%) and 2016/17 (17.4%)-figure 2.43.

Figure 2.43: Deprivation rate in each indicator of a child's well-being for children 15-17 years old at national level
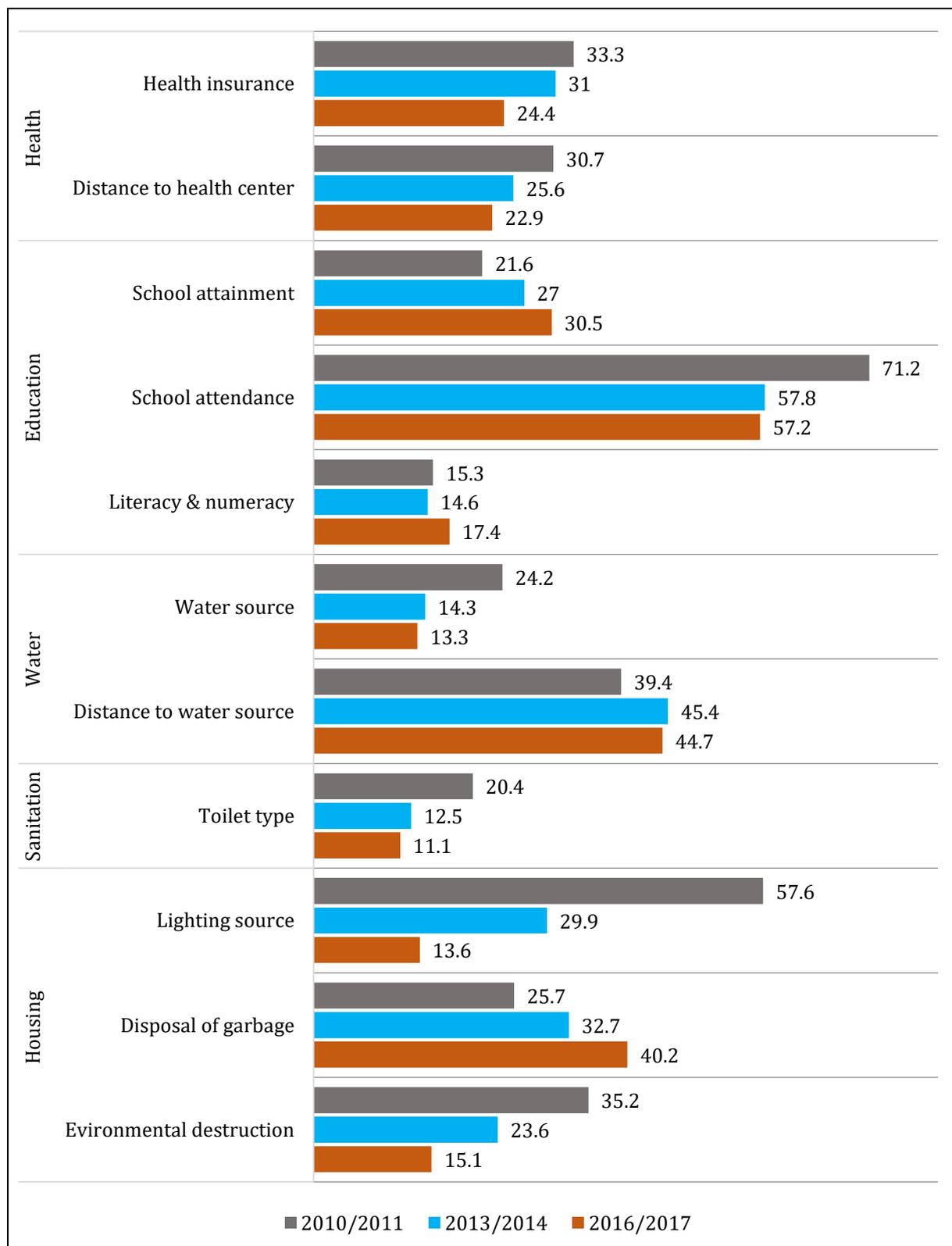
Source: Produced by NISR based on data from EICV 2010/11, 2013/14 & 2016/17

Figure 2.44: Deprivation rate in each dimension of a child's well-being for children 15-17 years old at national level
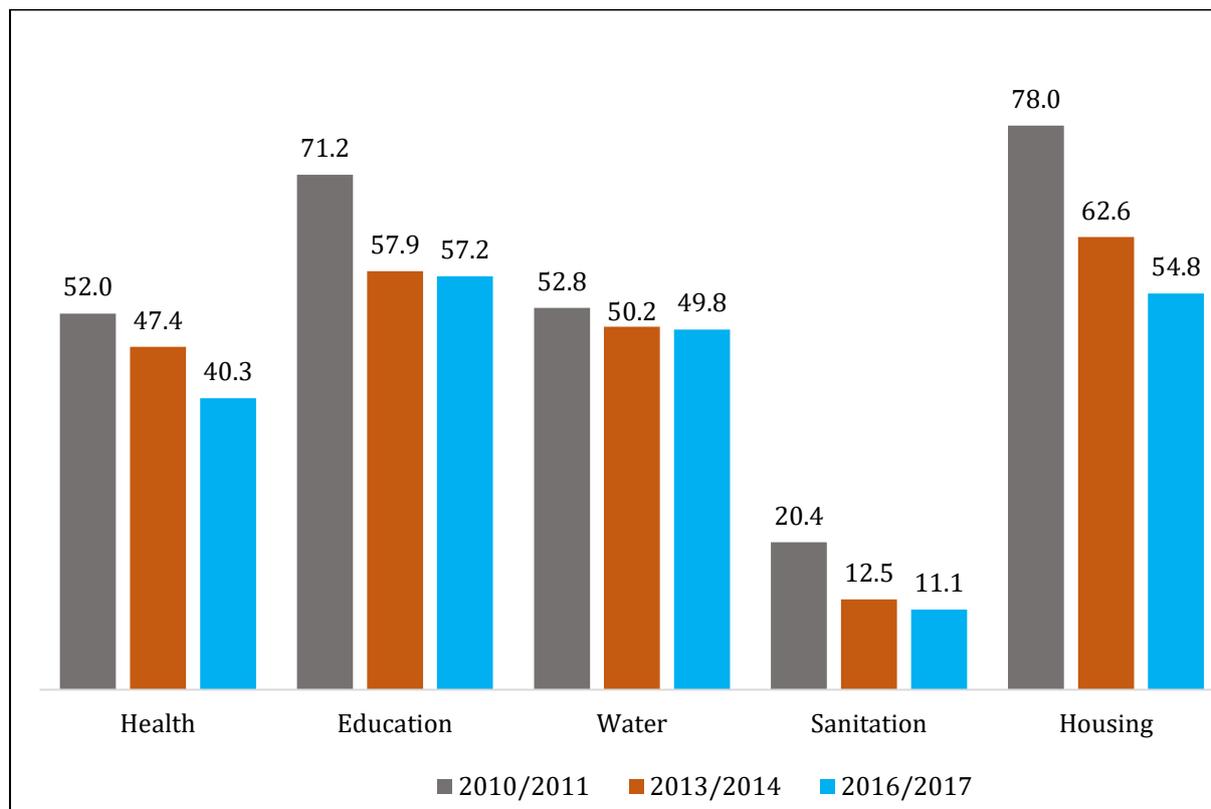
Source: Produced by NISR based on data from EICV 2010/11, 2013/14 & 2016/17

2.4.2. Multidimensional deprivation analysis

The proportion of children aged between 15-17 years who were not deprived in any dimension increased to 10.8% in 2016/17 from 4.9 in 2010/11. On the other hand, the number of chidren experiencing the highest count of deprivations (3 or 4 deprivations) reduced from 2010/11 to 2016/17 (those deprived in three dimensions reducing to 25.9% in 2016/17 from 31.7% in 2010/11; and those deprived in four out of five dimensions reducing to 11.9% in 2016/17; from 22.5% in 2010/11). This also shows a remarkable improvement for children deprived in the highest counts of deprivations in the last six years (figure 2.45).

Figure 2.45: Deprivation distribution for children 15-17 years old at the national level
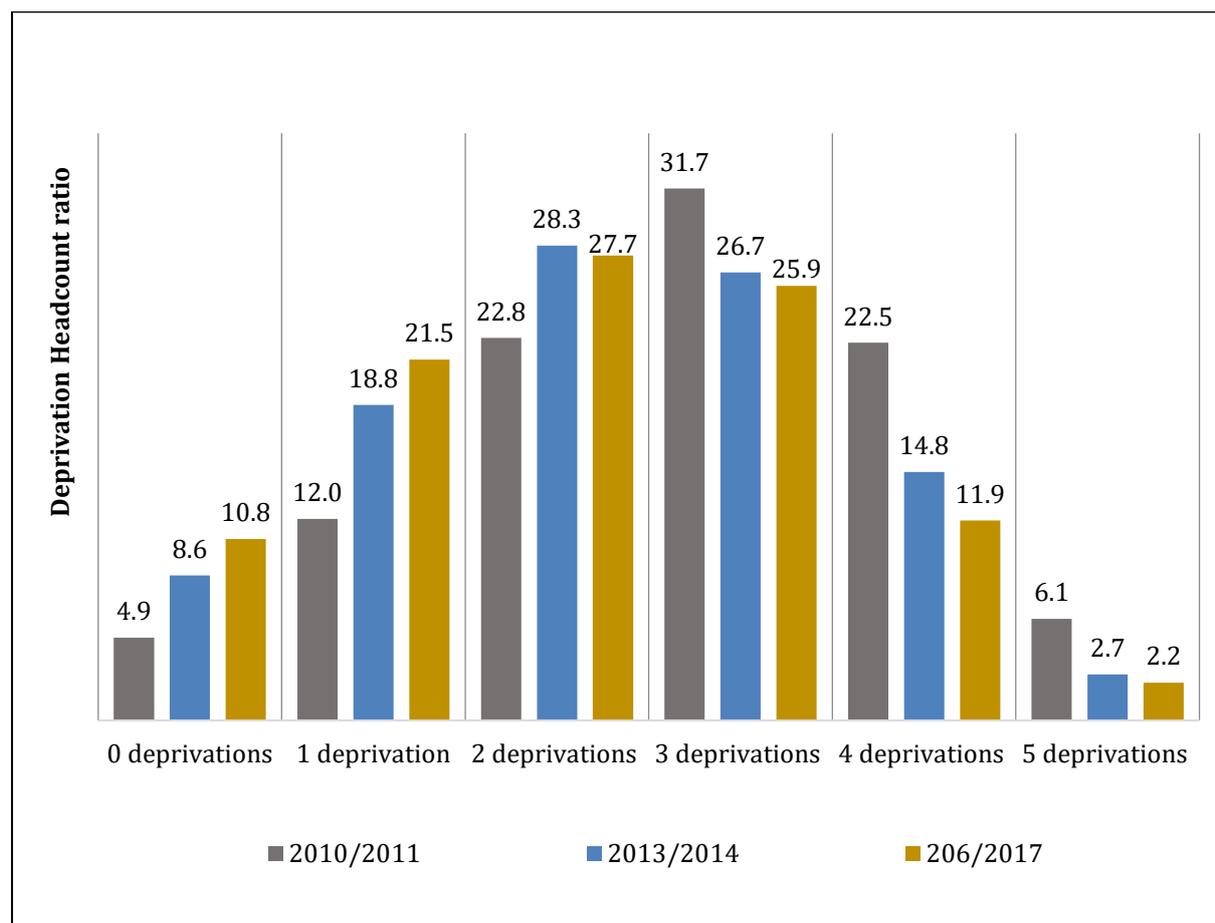
Source: Produced by NISR based on data from EICV 2010/11, 2013/14 & 2016/17

2.4.3. Multidimensional child poverty indices

a. Multidimensional child poverty indices

Multidimensional poverty for children aged 15-17 years also decreased significantly: in 2010/11, 60.2% of children faced at least three deprivations compared to only 40.1% in 2016/17. The average intensity among the deprived improved from 71.5% in 2010/11 to 68.2% in 2016/17; and the multidimensional child poverty index (M0) decreased from 0.43 to 0.27 (Table 2.2).

Table 2. 2: Indices for children 15-17 years old at the national level

Period		Multidimensional deprivation Headcount (H)	Average intensity among deprived (A); %	Adjusted multidimensional deprivation headcount (MO)
EICV3 (2010/11)	Deprived in at	60.2	71.5	0.431
EICV4 (2013/14)	least 3	44.2	69.2	0.306
EICV5 (2016/17)	dimensions	40.1	68.2	0.274

Source: Produced by NISR based on data from EICV 2010/11, 2013/14 & 2016/17

2.4.4. Venn diagram on the deprivation overlap, trend analysis (2010/2011-2016/2017)

By overlapping three dimensions for each period of EICV surveys, it appears that the percentage of children simultaneously deprived in three dimensions (education, water and housing) has

decreased over time, from 33.2% in 2010/11 to 21.5% in 2013/14 and 20.1% in 2016/17. This denotes the progressive decrease of the vulnerability of the children aged 15-17 years. In the case of children deprived in two dimensions at the same time, the percentage of those deprived in education and housing is highest during the three periods, but also shows a decreasing trend from 23.7% in 2010/11 to 15.0% in 2016/2017. Also the number of children not experiencing any deprivation increased more than two times, from 5.8% to 14.5% in the last six years (figures 2.46).

Figure 2.46: Venn diagram on the deprivation overlap between education, water and housing for children 15-17 years old at the national level

2010/2011
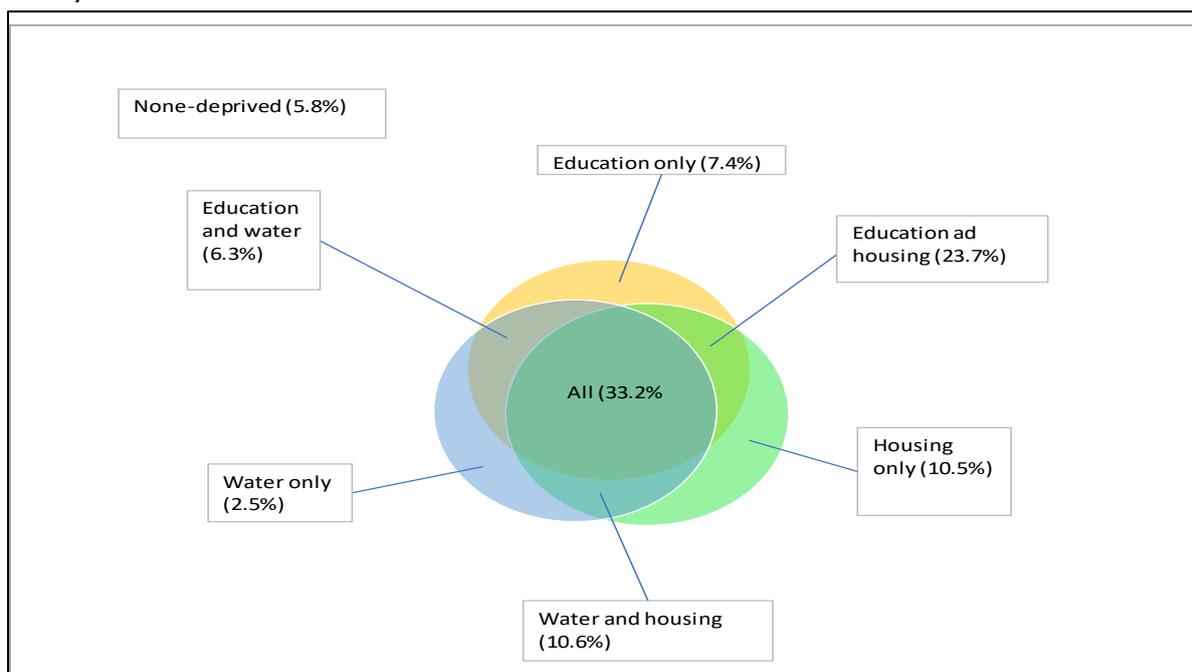
Source: Produced by NISR based on data from EICV3 (2010/2011)

2013/2014
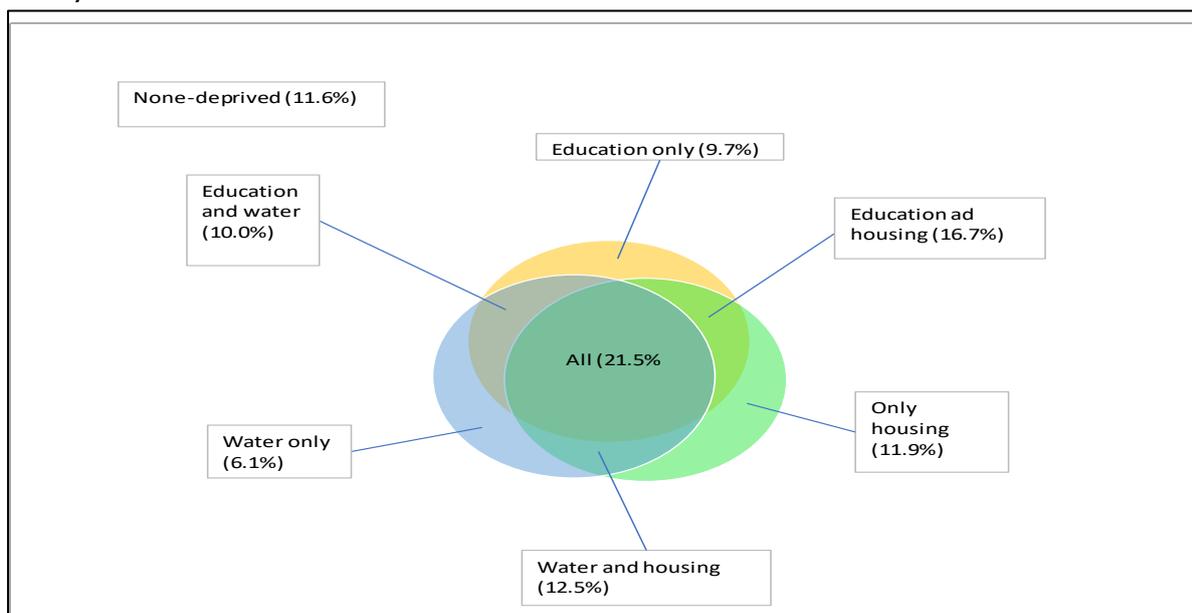
Source: Produced by NISR based on data from EICV4 (2010/2011)

2016/2017
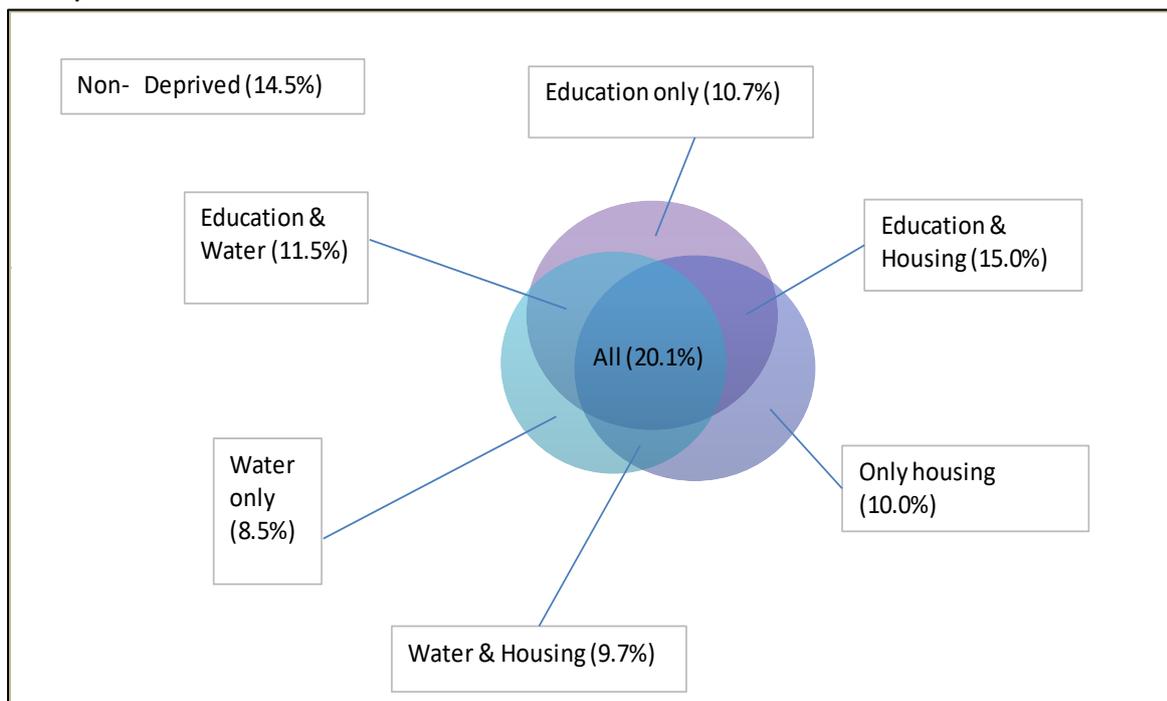
Source: Produced by NISR based on data from EICV5 (2016/2017)

Conclusion and Policy Recommendations

The comprehensive analysis outlined in this report provides a nuanced picture of multidimensional child poverty in Rwanda, in order to inform national policies and programmes, and to provide reporting baselines for the SDG multidimensional poverty targets for Rwanda. The analysis has highlighted the complex nature of child poverty, which cannot be captured through measures to monetary poverty alone. In order to capture multiple facets of poverty, multidimensional and monetary measures together provide the most accurate and useful analysis for programming and policy purposes

This study highlights the need to concentrate on the most vulnerable children in Rwanda, especially those deprived in several dimensions. Such multiple and overlapping deprivations during childhood and adolescence can have irreversible effects on the eventual productivity and social inclusion of children. Alleviating the intensity and severity of deprivation among children will contribute significantly towards Rwanda's future economic growth and overall productivity.

Rwanda has a young population and the opportunity to benefit from accelerated economic growth from this demographic dividend. In order to do so, the country can further prioritize children by ensuring that they have access to all their basic needs and services and that their rights are protected. Putting in place policies, including social protection packages, to reduce children's deprivation is the best way to break the cycle of inter-generational poverty.

The MODA analysis highlights that 32.7% of children under 18 years in Rwanda are multidimensionally poor (i.e. deprived in at least three dimensions of wellbeing simultaneously). The aim for Rwanda, as specified in Target 1.2 of SDG1, is to reduce this percentage by at least half by 2030. This study will be repeated over the next 15 years using forthcoming DHS and EICV datasets to monitor progress.

Rwanda is therefore currently on track to reduce child poverty by at least half over the next 15 years. Some of the key results emerging from the MODA analysis are:

- Most children face multiple and overlapping deprivations – very few children in Rwanda are deprived in only one dimension of wellbeing.
- The average intensity (the number of deprivation a child experiences as a percentage of all possible deprivations) shows a very slight change between 2010/11 and 2016/17, implying that children remain equally vulnerable in 2017 as in 2010.
- The proportion of children aged between 5-14 and 15-17 years experiencing overlapping deprivations as well as those who are simultaneously deprived in at least 3 dimensions has significantly improved from EICV3 (2010/11) to EICV5 (2016/17).
- Significant geographical disparities persist: notable disparities were observed based on geographical location, with children particularly from rural areas, Southern. Eastern and Western provinces experiencing higher rates of multidimensional poverty.
- The findings further indicate that gender disparities are evident where boys are more deprived than girls.
- Multidimensional child poverty is more prominent in female-headed households (facing at least three deprivations). Similarly, the absence of a male-headed household is associated with higher multidimensional child poverty.
- Multidimensional child poverty is lower in households with higher levels of education of the household head.

Based on the comprehensive findings outlined in the report, the following policy recommendations are made to address multidimensional child poverty in Rwanda.

- Cross-sectoral integration in policies and programmes:

As highlighted, the majority of children in Rwanda experience multiple and overlapping deprivations of which children aged between 15-17 years are more vulnerable. 40.0% of children aged between 15-17 years and 25.3% of children between 5-14 years are multidimensionally poor. So policies and programmes targeting child poverty need to be designed to address the linkages between deprivations in dimensions. Tackling a number of deprivations through combined policies can minimize programme costs (administration, targeting etc.) and reduce child poverty more efficiently. Therefore, collaboration and coordination, and policy and programme implementation need to be further strengthened - building on the existing coordination bodies - in order to further consolidate policies targeting multidimensionally poor children.

Coordinated policy packages to address deprivations in education, water and housing for children aged 15-17, especially in rural areas, can be further promoted. And for older children (15-17 years), a multisectoral approach for reducing deprivations in education, water and housing can be further strengthened.

- Targeting the most vulnerable children in Rwanda with integrated responses:

This study has identified the poorest children, which should enable policies and programmes to be carefully targeted towards them. Effective integration of policies and programmes, in particular the promotion of social protection measures along with other basic social services, can prioritize the most vulnerable children as follows:

➢ Children living in rural areas, Southern and Western Provinces, who are the most deprived in all dimensions of non-monetary poverty and are most likely to experience multidimensional deprivations.
➢ Children living in female-headed households: the current focus on supporting female-headed households and single mothers needs to be further strengthened.
➢ Children living with uneducated or poorly educated parents need extra stimulation and support to mitigate the higher chance of falling into poverty.
➢ Although the concentration of multidimensionally poor children is clearly in rural areas, the intensity of their deprivations is similar to those of multidimensionally poor children in urban areas. Therefore, measures regarding promotion of social protection along with other basic social services targeting the most vurnalable children in both rural and urban areas are needed.
➢ The proportion of children aged between 5-14 & 15-17 years experiencing overlapping deprivations as well as those who are simultaneously deprived in at least three dimensions is still high. Special ant-poverty policies need to be put in place to curb this poverty issue and measuring the change should be taken seriously.

➢ As highlighted, 29.2% of children aged 5-14 years and 21.6% of children aged 15-17 are both monetary poor and multidimensionally deprived. Therefore, policies and programmes targeting children living in the households experiencing both monetary poverty and multidimensional deprivations need to be designed and strengthened building on the existing coordination and collaboration bodies.

➢ The number of deprived children aged 5-14 and 15-17 has increased for garbage disposal; and also deprivation in school attainment for children aged 15-17 increased from 2010/11 to 2016/17 which is contrary to the expectation. Therefore, policy intervention is needed to curb with this problem and further research is needed to examine the cause. In addition, deprivation in distance to water source should also be improved.

➢ Southern Province and Eastern Province seem to be lagging behind in terms of incidence of poverty (H), intensity (A) and multidimensional deprivation headcount (Mo). Therefore, special programs need to be allocated focusing on poor people in these provinces.

➢ MODA Rwanda should be taken as a benchmark for monitoring the SDG Indicator 1.2.2 (Proportion of men, women and children of all ages living in poverty in all its dimensions) according to national definitions, to track changes in the next 15 years (up to 2030).

• Leveraging data on children for social policies:

The comprehensive MODA analysis would not have been possible without the rich data available in EICV datasets. In order to routinely produce reliable estimates on multidimensional child poverty, these national surveys need to be further supported in order to produce comprehensive data on a variety of children's issues, such as violence against children, child labour, social protection, early child development - and the more commonly established data around health, water, sanitation, nutrition and education.

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ANNEX: A: TABLES

A.1 Children 5-14 years old

Table A.1. 1: Deprivation rate (%) in each indicator of a child's wellbeing, children 5-14 years old at national level and by area of residence and province

National/Area of residence/ Province	Health		School attendance	Water		Sanitation		Housing	
	Health insurance	Distance to health centre		Water source	Distance to water source	Toilet type	Lighting source	Disposal of garbage	Environmental destruction
National	27.9	23.9	6.3	13.4	47.3	13.1	14.9	46.6	14.8
Rural	28.7	26.4	6.4	15.0	48.9	14.3	14.7	48.0	16.1
Urban	23.1	10.0	5.6	4.35	38.7	6.24	16.3	38.6	7.29
Kigali City	24.5	5.27	5.9	5.6	36.9	4.8	15.3	41.5	5.86
Southern	33.2	28.7	6.6	12.1	52.9	24.4	15	58.5	15.2
Western	29.0	23.9	6.2	13.4	43.6	10.4	16.4	46.4	19.7
Northern	17.6	18.1	3.2	12.1	43.0	12.9	12.9	49.4	14.5
Eastern	29.3	30.1	8.2	18.3	52.2	8.81	14.6	36.6	13.6

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 2: Deprivation rate (%) in each dimension of a child's wellbeing, children 5-14 years old at national level and by area of residence and province

Area of residence/ Province	Health	Education	Water	Sanitation	Housing
National	44	6.3	52.2	13.1	60.4
Rural	46.5	6.4	54.3	14.3	62.4
Urban	29.4	5.6	40.1	6.24	49.2
Kigali City	27.9	5.9	39.3	4.8	48.3
Southern	51.8	6.6	57.2	24.4	69.5
Western	44.6	6.2	48.9	10.4	62.3
Northern	32.9	3.2	48	12.9	62.6
Eastern	48.8	8.2	57.8	8.8	54.1

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 3: Deprivation rate (%) in each dimension of a child's wellbeing, children 5-14 years old by some characteristics

Characteristics	Health	Education	Water	Sanitation	Housing
Gender of the child					
Female	43.8	5.5	51.4	13.1	60.1
Male	44.1	7.1	53.0	13.1	60.8
Household head level of education					
Secondary or higher education	21.5	2.9	30.0	2.6	38.4
Primary education	38.9	3.6	49.9	8.9	55.6
No education	49.0	7.8	56.1	16.2	65.3

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 4: Deprivation distribution (%), children 5-14 years old at the national level and by area of residence and by province

Area of residence	Dimension 0	Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5
National	14.1	27.6	33.0	20.3	4.6	0.4
Rural	11.0	27.9	34.2	21.7	4.9	0.4
Urban	31.6	26.5	26.2	12.5	2.9	0.3
Kigali City	32.3	26.4	28.1	10.7	2.5	0.0
Southern	7.6	21.9	34.5	27.2	8.1	0.7
Western	12.4	30.5	34.7	18.6	3.6	0.3
Northern	15.4	32.5	33.2	15.6	3.0	0.2
Eastern	13.8	28.0	31.8	22.0	4.0	0.5

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 5: Deprivation distribution (%) per different number of dimensions, children 5-14 years old by some characteristics

Characteristics	Dimension 0	Dimension 1	Dimensions 2	Dimensions 3	Dimensions 4	Dimensions 5
Household size						
More than 6 members	16.7	29.3	32.1	18.0	3.6	0.3
4-6 members	13.0	27.0	33.3	21.4	4.8	0.4
1-3 members	10.1	24.7	34.2	23.0	7.0	1.0
Household head size						
Female household head	11.7	21.9	33.4	25.6	6.8	0.6
Male household head	14.7	29.0	32.9	19.0	4.0	0.4
Household head level of education						
Secondary or higher education	38.2	35.9	19.2	6.0	0.7	0.0
Primary education	17.1	32.1	31.3	16.8	2.7	0.2
No education	9.7	24.7	35.5	23.6	5.9	0.6
Child gender						
Female	15.1	27.1	32.6	20.7	4.1	0.4
Male	13.1	28.2	33.3	19.9	5.1	0.4

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 6: Multidimensional deprivation headcount (H) per different number of deprivations, children 5-14 years old at national level and by area of residence and province

Area of residence	At least 1 deprivation	At least 2 deprivations	At least 3 deprivations	At least 4 deprivations	At least 5 deprivations
National	85.9	58.2	25.3	5.0	0.4
Rural	89.0	61.1	27.0	5.3	0.4
Urban	68.4	41.9	15.7	3.2	0.3
Kigali City	67.7	41.3	13.2	2.5	0.0
Southern	92.4	70.5	36.0	8.8	0.7
Western	87.6	57.1	22.5	3.9	0.3
Northern	84.6	52.1	18.8	3.2	0.2
Eastern	86.2	58.3	26.5	4.5	0.5

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 7: Multidimensional deprivation headcount (H), Average intensity of deprivation among multidimensional poor children (A), Multidimensional poverty index (M0), children 5-14 years at national level by area of residence and province

Area of residence/ Province	Health	Education	Water	Sanitation	Housing
National	44	6.3	52.2	13.1	60.4
Rural	46.5	6.4	54.3	14.3	62.4
Urban	29.4	5.6	40.1	6.24	49.2
Kigali City	27.9	5.9	39.3	4.8	48.3
Southern	51.8	6.6	57.2	24.4	69.5
Western	44.6	6.2	48.9	10.4	62.3
Northern	32.9	3.2	48	12.9	62.6
Eastern	48.8	8.2	57.8	8.8	54.1

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 8: Contribution of each dimension to the Multidimensional Poverty Index (M0), children 5-14 years old

Dimension	National	Rural	Urban
Health	27.3%	27.3%	27.3%
Education	4.7%	4.7%	4.7%
Water	27.1%	27.1%	27.1%
Sanitation	11.7%	11.7%	11.7%
Housing	29.2%	29.2%	29.2%
Total	100.0%	100.0%	100.0%

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 9: Overlap deprivation between three dimensions, children 5-14 years old at national Level

Combination of three dimensions	Overlap between all dimensions	Overlap between first two dimensions	Overlap between first and third dimensions	Overlap between second and third dimensions	Deprivation in only first dimension	Deprivation in only second dimension	Deprivation in only third dimension	Deprived in none of the three dimensions
Water, Sanitation, Housing	5.9	1.8	28.2	4.1	16.2	1.2	22.2	20.3
Education, Sanitation, Housing	0.9	0.3	2.7	9.2	1.2	2.8	47.6	35.3
Education, Water, Housing	2.1	0.8	1.5	32.0	0.7	17.2	24.9	20.8
Education, Water, Sanitation	0.8	2.1	0.4	6.9	1.8	42.3	5.0	40.6
Health, Sanitation, Housing	5.8	1.7	23.5	4.3	13.0	1.3	26.9	23.5
Health, Water, Housing	17.5	8.2	11.7	16.6	6.5	9.8	14.6	15.0
Health, Water, Sanitation	4.6	21.2	3.0	3.2	15.2	23.2	2.4	27.3
Health, Education, Housing	2.4	0.8	26.8	1.2	13.9	0.7	30.0	24.2
Health, Education, Sanitation	0.8	2.5	6.7	0.4	34.0	1.5	5.2	48.9
Health, Education, Water	1.9	1.3	23.9	1.0	16.8	0.9	25.4	28.8

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 10: Overlap deprivation between three dimensions, children 5-14 years old by area of residence

Combination of Three dimensions	Overlap between all dimensions (%)	Overlap between first two dimensions (%)	Overlap between first and third dimensions	Overlap between second and third dimensions	Deprivation in only first dimension	Deprivation in only second dimension	Deprivation in only third dimension	Deprived in none of the three dimensions
RURAL								
Water, Sanitation, Housing	4.6	2.1	28.9	4.6	17.0	1.3	22.6	17.2
Education, Sanitation, Housing	10.0	0.3	2.7	10.0	1.2	3.1	48.7	33.0
Education, Water, Housing	33.1	0.9	1.5	33.1	0.7	18.2	25.7	17.9
Education, Water, Sanitation	7.5	2.2	0.4	7.5	1.8	43.7	5.5	38.0
Health, Sanitation, Housing	4.5	2.0	24.7	4.5	13.5	1.4	26.8	20.7
Health, Water, Housing	16.8	8.9	12.6	16.8	6.6	10.2	14.6	12.0
Health, Water, Sanitation	3.4	22.4	3.4	3.4	15.8	23.5	2.5	24.0
Health, Education, Housing	1.2	0.9	28.6	1.2	14.6	0.7	30.1	21.5
Health, Education, Sanitation	0.4	2.5	7.5	0.4	35.7	1.5	5.5	46.0
Health, Education, Water	1.1	1.4	25.3	1.1	17.8	0.9	25.9	25.7
URBAN								
Water, Sanitation, Housing	1.7	0.4	24.3	1.7	12.0	0.7	19.8	37.7

Combination of Three dimensions	Overlap between all dimensions (%)	Overlap between first two dimensions (%)	Overlap between first and third dimensions	Overlap between second and third dimensions	Deprivation in only first dimension	Deprivation in only second dimension	Deprivation in only third dimension	Deprived in none of the three dimensions
Education, Sanitation, Housing	4.8	0.1	2.7	4.8	1.3	1.0	41.4	48.4
Education, Water, Housing	25.8	0.4	1.2	25.8	0.9	12.0	20.3	37.4
Education, Water, Sanitation	3.6	2.0	0.1	3.6	2.0	34.3	2.3	55.5
Health, Sanitation, Housing	2.8	0.5	16.4	2.8	10.1	0.6	27.7	39.5
Health, Water, Housing	15.5	4.7	6.5	15.5	5.9	7.7	14.9	32.5
Health, Water, Sanitation	1.7	14.8	0.7	1.7	11.8	21.5	1.7	45.8
Health, Education, Housing	1.0	0.6	16.6	1.0	9.9	0.7	29.5	39.5
Health, Education, Sanitation	0.1	2.4	2.5	0.1	24.1	1.6	3.3	65.7
Health, Education, Water	0.7	1.2	15.4	0.7	11.2	0.9	22.5	46.5

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.1. 11: Overlap between monetary poor and multidimensionally poor, children 5-14 years old at national level

Monetary Poor & Multidimensionally poor (MPI) (%)	Only monetary poor (%)	Only Multidimensionally poor (MPI) (%)	Non-monetary poor& Non Multidimensinally poor (%)
15.9	30.4	9.3	44.3

Source: Produced by NISR based on data from EICV5 (2016/2017)

A.2 Children 15-17 years old

Table A.2. 1: Deprivation rate (%) in each indicator of a child's wellbeing, children 15-17 years old at national level by area of residence and province

Area of residence	Health		Education			Water		Sanitation	Housing		
	Health insurance	Distance to health center	School attainment	School attendance	Literacy & numeracy	Water source	Distance to water source	Toilet type	Lighting source	Disposal of garbage	Environmental destruction
National	24.4	22.9	30.5	57.2	17.4	13.3	44.7	11.1	13.6	40.2	15.1
Rural	25.3	25.1	30.3	60.4	19	15.2	47.4	12.4	14	42.1	16.5
Urban	19.8	12.2	31.6	42.3	10.3	4.36	32.2	4.8	12.1	31.5	8.19
Kigali City	20.7	9.16	33.1	41.5	11.2	4.18	28.6	2.12	12.1	30.7	5.86
South Province	29.9	26.1	28.8	60.2	19.7	12.5	50.3	21.4	13.2	53.2	17.9
West Province	26.1	23.7	28.7	57.8	16.9	13.4	44.8	8.56	17.7	40.4	20.5
North Province	15.6	17.7	28.6	53.3	17.6	14.4	42.1	10.9	12.9	42.3	14.2
East Province	25.2	29.2	33.7	64.3	18.9	17.8	49.1	8.4	11.4	31.4	12.5

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2.2: Deprivation rate (%) in each dimension of a child's wellbeing, children 15-17 years old at national level and by area of residence and province

Area of residence	Health	Education	Water	Sanitation	Housing
National	40.3	57.2	49.8	11.1	54.8
Rural	42.8	60.4	53.1	12.4	57.8
Urban	28.8	42.3	34.0	4.8	40.4
Kigali City	28.3	41.5	30.4	2.12	36.1
Southern Province	47.0	60.2	55.5	21.4	66.5
Western Province	42.0	57.8	48.7	8.56	59.2
Northern Province	30.5	53.3	48.3	10.9	57.0
Eastern Province	44.9	64.3	55.9	8.4	47.8

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 3: Deprivation rate (%) in each dimension of a child's wellbeing, children 15-17 years old by some characteristics

	Health*	Education*	Water	Sanitation*	Housing*
Household size					
1-3 members	43.2	63.6	51.6	18.9	65.3
4-6 members	41.3	58.8	50.3	11.9	56.7
More than 6 members	38.8	54.3	48.9	8.67	50.7
Gender					
Female	39.7	52.1	48.8	10.6	54
Male	41	62.4	50.8	11.6	55.6
Household head level of education					
No education	45.5	66.6	55.2	13.9	61.4
Primary education	37	48.5	47.7	9.08	49.1
Secondary or higher ducation	22.9	32.6	29.6	2.55	36.3

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 4: Deprivation distribution (%), children 15-17 years old at the national level, by area of residence and by province

Area of residence/ Province	0 Dimension	1 Dimension	2 Dimension	3 Dimension	4 Dimension	5 Dimension
National	10.8	21.5	27.7	25.9	11.9	2.2
Rural	7.6	19.9	29.1	27.8	13.4	2.3
Urban	26.3	29.2	21.0	16.7	4.8	2.0
Kigali City	8.86	21.9	27	25.8	14.3	2.2
Southern	11.8	21.2	32	26.1	8.02	0.9
Western	9.41	21.6	28.5	26.5	11.6	2.4
Northern	5.24	14.9	29.1	29.7	17.1	4.0
Eastern	26.6	33.5	18.9	17.3	3.15	0.5

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 5: Deprivation distribution (%), children 15-17 years old by some characteristics

Characteristics	0 deprivation	1 deprivation	2 deprivations	3 deprivations	4 deprivations	5 deprivations
Household size						
1-3 members	4.98	19.9	27.9	26.9	15.5	4.84
4-6 members	10.1	20.5	27	27.8	12.4	2.33
More than 6 members	12.8	23	28.3	23.6	10.7	1.61
Sex of the child						

Characteristics	0 deprivation	1 deprivation	2 deprivations	3 deprivations	4 deprivations	5 deprivations
Female	12.1	23	26.9	25.6	10.5	1.96
Male	9.55	20	28.4	26.1	13.4	2.52
Sex of head of the household						
Female household head	9.13	16.6	27.5	29.5	13.4	3.85
Male household head	11.3	23	27.7	24.7	11.5	1.75
Education level of the household head						
No education	5.5	17.3	27.6	30.8	15.8	2.9
Primary education	13.6	25.2	29.2	21.9	8.4	1.8
Secondary or higher education	29.5	32.7	24.6	11.1	1.7	0.3

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 6: Multidimensional deprivation headcount (H), children 15-17 years old per different number of deprivations at national level and by area of residence and province

National/ Area of residence/ Province	At least 1 deprivation	At least 2 deprivations	At least 3 deprivations	At least 4 deprivations	At least 5 deprivations
National	89.2	67.7	40.0	14.2	2.2
Rural	92.4	72.5	43.5	15.7	2.3
Urban	73.7	44.4	23.4	6.8	2.0
Kigali City	73.4	39.9	21.0	3.7	0.5
Southern	94.8	79.9	50.8	21.2	4.0
Western	90.6	69.0	40.4	14.0	2.4
Northern	88.2	67.0	35.0	8.9	0.9
Eastern	91.1	69.3	42.3	16.5	2.2

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2.   7: Multidimensional deprivation headcount (H), Average intensity of deprivation among multidimensional poor children (A) and Multidimensional child poverty index (M0), children 15-17 years old at national level and by area of residence and province

Area of residence/ province	H	A	M
National	40.0	68.2	0.27
Rural	43.5	68.3	0.30
Urban	23.4	67.4	0.16
Kigali City	21	64	0.13
Southern	50.8	69.9	0.36
Western	40.4	68.1	0.28
Northern	35.0	65.6	0.23
Eastern	42.3	68.8	0.29

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 8: Decomposition of the multidimensional child poverty index, children 15-17 years old at national level and by area of residence

Dimensions	National (%)	Rural (%)	Urban (%)
Health	20.4	20.6	18.7
Education	25.5	25.3	26.6
Water	22.6	22.6	22.2
Sanitation	7.0	7.1	5.5
Housing	24.6	24.3	26.9

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 9: Deprivation overlap (%), children 15-17 years old by dimension

Domaine	Only deprived in the given dimension	Deprived in 1 other dimension	Deprived in 2 other dimensions	Deprived in 3 other dimensions	Deprived in all 5 dimensions
Health	3.33	9.15	15.1	10.5	2.24
Education	6.48	16	21.2	11.3	2.24
Water	5.05	14	17.9	10.6	2.24
Sanitation	0.17	1.4	3.4	3.88	2.24
Housing	6.49	14.8	20	11.4	2.24

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2. 10: Overlap deprivation between three dimensions, children 15-17 years old at national Level

Combination of Three dimensions	Overlap between all dimensions	Overlap between first and second dimensions	Overlap between first and third dimensions	Overlap between second and third dimensions	Deprivation in only first dimension	Deprivation in only second dimension	Deprivation in only third dimension	Deprived in none of the three dimensions
Water,Sanitation,Housing	0.05	0.02	0.25	0.03	0.18	0.01	0.22	0.24
Education,Sanitation,Housing	0.06	0.02	0.29	0.02	0.20	0.01	0.17	0.22
Education,Water,Housing	0.20	0.11	0.15	0.09	0.11	0.08	0.10	0.15
Education,Water,Sanitation	0.05	0.27	0.03	0.02	0.22	0.16	0.01	0.23
Health,Sanitation,Housing	0.05	0.01	0.19	0.04	0.15	0.01	0.27	0.28
Health,Water,Housing	0.14	0.09	0.10	0.16	0.07	0.11	0.15	0.18
Health,Water,Sanitation	0.04	0.19	0.02	0.03	0.15	0.24	0.02	0.30
Health,Education,Housing	0.18	0.09	0.07	0.17	0.07	0.13	0.13	0.16
Health,Education,Sanitation	0.05	0.22	0.01	0.03	0.12	0.27	0.02	0.27
Health,Education,Water	0.16	0.11	0.07	0.16	0.07	0.15	0.11	0.18

Source: Produced by NISR based on data from EICV5 (2016/2017)

Table A.2.10: Overlap deprivation between three dimensions, children 15-17 years old by area of residence

Combination of Three dimensions	Overlap between all dimensions	Overlap between first and second dimensions	Overlap between first and third dimensions	Overlap between second and third dimensions	Deprivation in only first dimension	Deprivation in only second dimension	Deprivation in only third dimension	Deprived in none of the three dimensions
RURAL								
Water,Sanitation,Housing	0.053	0.019	0.266	0.039	0.193	0.014	0.220	0.196
Education,Sanitation,Housing	0.066	0.023	0.311	0.026	0.204	0.009	0.176	0.185
Education,Water,Housing	0.215	0.125	0.161	0.104	0.103	0.087	0.098	0.107
Education,Water,Sanitation	0.053	0.287	0.036	0.019	0.227	0.172	0.016	0.189
Health,Sanitation,Housing	0.050	0.016	0.216	0.042	0.145	0.017	0.271	0.244
Health,Water,Housing	0.157	0.093	0.109	0.162	0.068	0.119	0.150	0.141
Health,Water,Sanitation	0.039	0.212	0.027	0.033	0.150	0.248	0.025	0.267
Health,Education,Housing	0.190	0.099	0.076	0.186	0.063	0.129	0.126	0.131
Health,Education,Sanitation	0.050	0.239	0.016	0.039	0.123	0.276	0.019	0.238
Health,Education,Water	0.173	0.116	0.078	0.167	0.061	0.148	0.114	0.144
URBAN								
Water,Sanitation,Housing	0.035	0.000	0.160	0.010	0.144	0.003	0.199	0.448
Education,Sanitation,Housing	0.034	0.002	0.194	0.011	0.192	0.001	0.165	0.400
Education,Water,Housing	0.130	0.070	0.098	0.065	0.124	0.074	0.110	0.327
Education,Water,Sanitation	0.025	0.175	0.011	0.010	0.211	0.130	0.002	0.436
Health,Sanitation,Housing	0.027	0.001	0.118	0.017	0.141	0.002	0.241	0.452
Health,Water,Housing	0.072	0.047	0.074	0.123	0.096	0.098	0.135	0.356
Health,Water,Sanitation	0.024	0.095	0.005	0.011	0.164	0.210	0.008	0.483
Health,Education,Housing	0.108	0.053	0.038	0.120	0.089	0.142	0.138	0.313
Health,Education,Sanitation	0.023	0.138	0.005	0.013	0.121	0.249	0.007	0.444
Health,Education,Water	0.075	0.086	0.043	0.125	0.084	0.137	0.096	0.354

Source: Produced by NISR based on data from EICV5 (2016/2017)

Tab 2.36: Overlap between monetary poor and multidimensionally poor, children 15-17 years old at national level

Poor & Multidimensionally poor (MPI) %	Only poor %	Only Multidimensionally poor (MPI) %	Non poor& Non Multidimensinally poor %
21.6	17.6	18.4	42.3

Source: Produced by NISR based on data from EICV5 (2016/2017)

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