



Multidimensional Child Poverty in Rwanda:
A Multiple Overlapping Deprivation Analysis (MODA)

[Multidimensional Child Poverty in Rwanda: A Multiple Overlapping Deprivation Analysis \(MODA\)](#)

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LIST OF ABBREVIATIONS

CC-MODA	Cross-Country Multiple Overlapping Deprivation Analysis
DHS	Demographic and Health Survey
ECD	Early Childhood Development
EICV	Integrated Households Living Conditions Survey
MDG	Millennium Development Goal
MODA	Multiple Overlapping Deprivation Analysis
MPI	Multidimensional Poverty Index
SDG	Sustainable Development Goal
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WHO	World Health Organization

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EXECUTIVE SUMMARY

Rwanda has achieved remarkable progress in reducing poverty over the past decades. Since 2000, the monetary poverty rate has fallen from nearly 59% to under 40%, with extreme poverty dropping from 40% to 16%. Despite these impressive gains, poverty still affects two out every five Rwandans.

Multidimensional child poverty analysis is an important tool to evaluate the impact of a government's poverty agenda. Assessing the current challenges from a child's point of view offers important insights on the nature of poverty in Rwanda – who the poor are, why their poverty persists, and how poverty is inter-generationally transmitted. The year 2017 has been an opportune moment for reflection: Rwanda outperformed most of its African peers in terms of delivering on the Millennium Development Goals (MDGs) but the country must now focus on a much more challenging set of development goals – the Sustainable Development Goals (SDGs). Understanding the current context of child poverty and establishing the baselines to assess progress are indispensable to achieving the 2030 targets. The upcoming National Strategy for Transformation places emphasis on poverty reduction under the pillars of Economic and Social Transformation – with a target of eradicating extreme poverty by 2024.

METHODOLOGY

Two concepts are used to measure child poverty in this study: monetary poverty and multi-dimensional poverty. A child is considered to be monetarily poor when living in a household where total household consumption per adult equivalent is below the national poverty line. A child is defined as being multidimensionally poor if he or she is deprived in several dimensions of his or her wellbeing. This study takes the multidimensional approach to poverty, based on the Multiple Overlapping Deprivation Analysis (MODA) methodology developed by UNICEF, which concentrates on the measurement of child deprivation. It is unique in that it takes the child (when possible) rather than the household as the unit of analysis. It explores overlapping deprivations, and the prevalence and depth of deprivation for each child to inform policy responses and interventions.

Two sources of data were used for this analysis: the Rwanda Demographic and Health Survey (DHS) for children under 5 years; and the Integrated Household Living Conditions Survey (EICV) for children aged 5-17 years. Following national consultations and consideration of internationally agreed definitions of the essential rights and needs of children, the dimensions and indicators considered to best reflect the wellbeing of Rwandese children were decided upon. Since children's needs vary during childhood, and because the DHS and EICV collect different data, the dimensions applied for different age groups of children are not the same. For children aged 0-23 months, nutrition, health, protection, water, sanitation and housing were applied; for children aged 24-59 months, health, development, protection, water, sanitation and housing were applied. For children aged 5-17 years, health, education, water, sanitation and housing were applied.

RESULTS

The results reveal not only the dimensions of wellbeing in which children are deprived, but also how these deprivations might be interrelated (or overlap), as well as the main characteristics of multidimensionally poor children – in order to inform policy formulation with an understanding that this process requires a distinct sensitivity to understand how ‘poverty’ manifests itself among children in Rwanda, and how ‘deprivation’ of access to necessary goods and services adds a critical level of complexity to Rwanda’s story of poverty. Understanding the ways in which progress for children in Rwanda has been positive – and where there is still room for improvement – can help determine what kind of policy interventions for children’s wellbeing will bear the most fruit.

This study highlights the need to concentrate on the most vulnerable children, 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.

The main results relevant to children of all age groups are summarized below:

The baseline for Target 1.2 of Sustainable Development Goal 1

One of the main objectives of this study was to set the baseline figure for child poverty as of 2015 in order to track progress toward Target 1.2 of SDG 1 over the next 15 years. Using the MODA methodology, 39% of children aged 0-17 in Rwanda were defined as multidimensionally poor, that is, deprived in at least three dimensions of wellbeing. The SDG target is to reduce this figure by at least half¹(to just under 20%) by the year 2030.

Multidimensional child poverty has significantly reduced²

A child poverty trend analysis from 2010 to 2015 reveals that Rwanda has made considerable progress and that a number of effective policies are in place to meet its objectives. Multidimensional child poverty rates fell from 52% to 40% for under-5 children and from 44% to 32% for children aged 5-17 (note that these rates are slightly different from the figures presented in other chapters given that for the trend analysis certain indicators had to be dropped as they were not available in earlier survey rounds). This means that Rwanda is on track to achieving the target of reducing child poverty by at least half by 2030. Changes in the multidimensional poverty rate will be tracked over the next 15 years to ensure that progress is being made.

The profile of multidimensionally poor children

The study explored the main characteristics of multidimensionally poor children in Rwanda, in order to inform policies to effectively target them. Notable disparities in child poverty are observed based on geographical location – children from rural areas (particularly those in Southern and Western Provinces) are lagging behind children in urban areas.

¹ It was decided together with UNICEF and the NISR that a child would be considered multidimensionally poor if he/she was deprived in at least three dimensions of his/her wellbeing. In Chapter 4, the percentage of poor children for different thresholds of deprivations is shown.

² The dimensions used for the trend analysis are slightly different because not all of the indicators used to measure the dimensions were captured in 2010 DHS surveys.

There is no difference in deprivation rates by gender for the indicators used in the study for under-5 children. Gender disparity becomes apparent as children grow older, especially in primary education where boys are more deprived than girls.

Stunted children and those living in households which have experienced at least one case of child mortality in the last five years tend to suffer from more multiple deprivations.

There is higher multidimensional child poverty in female-headed households than in male-headed households. Higher levels of education of the mother and of the household head are associated with considerably lower levels of multidimensional poverty.

Overlapping child deprivations

More than half (55%) of under-5 children and 32% of children aged 5-17 suffer from at least three simultaneous (overlapping) deprivations. The nutrition, health and sanitation dimensions were identified as having the most significant overlap for children aged 0-23 months (26.6%) whereas children aged 24-59 months face significant overlap in health, water and sanitation dimensions (19.9%). The dimensions used for older children being somewhat different, the most significant overlap for children aged 5-14 years includes the health, water and housing dimensions (20.4%), whereas education, water and housing overlap affects most significantly children aged 15-17 years (at 21.5%).

[Rwanda's main social protection programme, Vision 2020 Umurenge Programme \(VUP\), improves the situation of extremely poor children in Rwanda](#)

The situation of children living in extremely monetarily poor households was studied by comparing children living in extremely poor households and participating in the VUP programme with those in non-participating extremely poor households. Overall, there are fewer multidimensionally poor children in households benefiting from VUP - 32% compared to 47% of households that did not participate in the VUP programme. The most significant difference is found in the dimension of health: the deprivation rate for health for children living in VUP households is only 45%, compared to 63% in non-VUP-participating households.

Overlap between monetary and multidimensional poverty³

A child can be multidimensionally poor even if he or she lives in a relatively well-off household. In Rwanda, 13% of children aged 5-17 years are deprived in at least three dimensions of wellbeing despite living in monetarily non-poor households. On the flip side, 27% of children living in monetarily poor households are not multidimensionally poor. Access to financial resources, although a strong predictor, does not automatically lead to lower multidimensional poverty among children in the Rwandan context.

³ The overlap between monetary and multidimensional poverty is done only for children aged 5-17 years because data on monetary poverty for under-5 children is not available.

Policy recommendations

This – the first – multidimensional child poverty analysis in Rwanda highlights that a strategy to address child poverty must be multisectoral, combining income-support interventions such as VUP with sector-specific interventions that address deprivations directly.

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 through equity-focused public policies has the potential to contribute significantly to the future economic growth and overall productivity of the country.

The MODA analysis has explored the profile of the most vulnerable children in Rwanda, leading to conclusions on strategies that may be applied to address multidimensional poverty of children.

Improving the effectiveness of policies by adopting a multisectoral approach

The majority of children in Rwanda experience more than one deprivation. Tackling the issue of multidimensional poverty through combined policies can minimize programme costs and optimize efficiency. Joint actions targeting both poor and non-poor households may provide the greatest impact in reducing poverty. Coordinated and integrated policy packages can be further explored in order to address the following deprivations affecting different age groups:

- Children aged 0-23 months: nutrition, sanitation and health.
- Children aged 24-59 months: health, water and sanitation, particularly in rural areas.
- Children aged 5-14 years: health, water and housing.
- Children aged 15-17 years: education, water and housing, particularly in rural areas.

Improving and supporting existing policies and strategies at sector level

While it is important to enhance multisectoral approaches, achievements in the social sectors need to be further promoted, with particular focus on:

- Further investments in health, sanitation and school infrastructure in rural areas given that for children living in rural areas the distance and access to facilities remain a significant challenge.
- Strengthening education programmes to reduce early dropout, support gender equality and improve the quality of teaching.
- Providing support measures that will enable households to offer a varied and sufficient diet for children aged 6-23 months.
- Enhancing the provision of water and sanitation supply.

Targeting the most vulnerable children in Rwanda

MODA findings provided some useful insights into which poorest and most vulnerable children need to be prioritized in policy and programme implementation, including through social protection interventions. In this regard the following recommendations are highlighted:

- Children living in rural areas, particularly in Southern and Western provinces, are the most vulnerable in all dimensions of non-monetary poverty. They are also the most likely to experience multidimensional deprivation and need to be prioritized in national policies and programmes.
- The existing focus of the government on supporting female-headed households and single mothers needs to be further strengthened.
- Children living with parents/caregivers with little or no education need extra stimulation and support to mitigate the higher chance of falling into poverty.



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INTRODUCTION

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 2014/15 Demographic and Health Survey (DHS) and the 2013/14 Integrated Household Living Conditions Survey (EICV) 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 nutrition, health, child development, child protection, education, water, sanitation and housing. Children are studied by age group (based on their varying needs across a child's lifecycle): 0-23 months, 24-59 months, 5-14 years and 15-17 years.⁴

Chapter 1 of the study discusses the methodology and its application in the broader context of children's deprivations in Rwanda. Subsequent chapters present the results, a trend analysis, and connections between multidimensional child poverty and child stunting and child mortality. The overlap between monetary and multidimensional poverty is discussed in Chapter 6, and Rwanda's social protection programme (VUP) is described in relation to multidimensional child poverty. The final Chapter provides conclusions and recommendations.

⁴A step-by-step guideline detailing the methodology supporting the selection of dimensions, indicators, deprivation thresholds and age groups, is available online at <https://www.unicef-irc.org/publications/695/>



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CHAPTER 1: METHODOLOGY

1.1 MODA 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), and builds upon other prominent approaches to capture multidimensional poverty – in particular UNICEF’s Global Study on Child Poverty and Disparities (which applied the so called ‘Bristol University’ approach to multidimensional poverty)⁵ and the well-known Multidimensional Poverty Index (MPI) spearheaded by Oxford’s Poverty and Human Development Initiative (OPHI).⁶

MODA⁷ 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 programmes 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 Rwandan Multidimensional Child Poverty analysis applies an adaptation of MODA in order to produce Rwanda-specific and relevant analysis, with the aim of:

- I. Capturing national objectives concerning child development;
- II. Exploring the profile of deprived children, to locate them both geographically and socially;⁸
- III. Improving the understanding of how the different deprivations by sector overlap to inform which deprivations may need to be addressed simultaneously;
- IV. Informing equity-based public policy responses to multidimensional child poverty; and
- V. Indicating deprivation manifestations that need further theoretical and empirical elaboration.

⁵ Gordon et al. (2003); UNICEF (2007).

⁶ Alkire & Santos (2010); Alkire & Foster (2011).

⁷ The methodology is described in detail in de Neubourg et al. (2012a).

⁸ Profiling is the basis for equity analysis, showing differences between genders, geographical regions, urban and rural areas, parents’ socio-economic situation, wealth quintiles and other variables.

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 are health, nutrition, water, sanitation, education, child protection 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. 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). The MODA analysis for Rwanda includes specific analysis for four distinct age groups: 0-23 months, 24-59 months, 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 DHS data has richer information for children under five years, whereas the EICV gives more precise and contextualised information on children aged 5-17, so two datasets were 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.

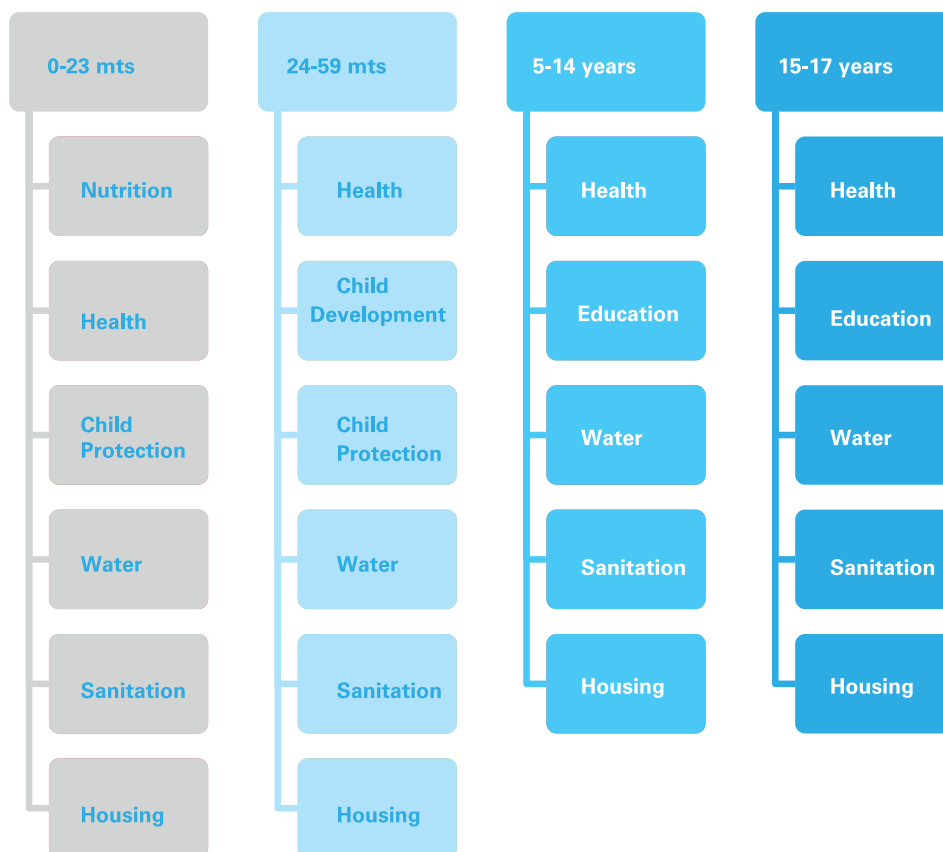
The dimensions and indicators chosen for each age group are presented in the text below.

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.

Selected dimensions for each age group under study below illustrates the dimensions used in the MODA analysis for children in Rwanda.

In order to identify children as multidimensionally poor (deprived), the dimensional deprivations are counted for each child - a child with three or more deprivations is counted as multidimensionally poor.

Figure 1:
Selected
dimensions for
each age group
under study



Multidimensional child poverty in Rwanda is defined as children being deprived in three or more of the following dimensions:

0-23 months					
Nutrition	Health	Child Protection	Water	Sanitation	Housing
<ul style="list-style-type: none"> ➤ Child is not exclusively breastfed (children 0-5 months); and/or ➤ Child does not meet requirements for meal frequency and diversity (6-23 months) 	<ul style="list-style-type: none"> ➤ Child's birth was not assisted, or only assisted by an unskilled birth attendant; and/or ➤ Child did not sleep under a mosquito net; and/or ➤ Child lives in a household without health insurance coverage; and/or ➤ Child has not received all basic vaccinations on time 	<ul style="list-style-type: none"> ➤ Child is left alone or left with another child under 10 yrs. for more than one hour during previous week 	<ul style="list-style-type: none"> ➤ 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 500 m. for rural areas and 200 m. for urban areas 	<ul style="list-style-type: none"> ➤ Child lives in a household which uses unimproved toilet facility; and/or ➤ Child lives in a household where toilet facilities are not dry and clean 	<ul style="list-style-type: none"> ➤ Child lives in a household which uses solid fuel and cooking is done inside the house

24-59 months

Health	Child Development	Child Protection	Water	Sanitation	Housing
<ul style="list-style-type: none"> Child's birth was not assisted, or only assisted by an unskilled birth attendant; and/or Child did not sleep under a mosquito net; and/or Child lives in a household without health insurance coverage; and/or Child has not received all basic vaccinations on time 	<ul style="list-style-type: none"> Child not attending any early childhood learning (34-59 months); and/or Child has no access to books/toys; and/or Low parental engagement 	<ul style="list-style-type: none"> Child is left alone or left with another child under 10 yrs. for more than one hour during previous week 	<ul style="list-style-type: none"> 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 500 m. for rural areas and 200 m. for urban areas 	<ul style="list-style-type: none"> Child lives in a household which uses unimproved toilet facility; and/or Child lives in a household where toilet facilities are not dry and clean 	<ul style="list-style-type: none"> Child lives in a household which uses solid fuel and cooking is done inside the house

5-14 years

Health	Education	Water	Sanitation	Housing
<ul style="list-style-type: none"> Child lives in a household without health insurance; and/or Child lives in a household where the time needed to go to the health centre is more than 1 hour on foot 	<ul style="list-style-type: none"> Child does not attend school; and/or Child cannot read and write a simple letter or note and cannot make a simple calculation 	<ul style="list-style-type: none"> 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 500 m. for rural areas and more than 200m for urban areas 	<ul style="list-style-type: none"> Child lives in a household which uses unimproved toilet facility 	<ul style="list-style-type: none"> Child lives in a 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, mud slides, destructive rains, or other environmental destruction in the last 12 months

15-17 years

Health	Education	Water	Sanitation	Housing
<ul style="list-style-type: none"> Child lives in a household without health insurance; and/or Child lives in a household where the time needed to go to the health centre is more than 1 hour on foot 	<ul style="list-style-type: none"> Child does not attend school; and/or Child cannot read and write a simple letter or note and cannot make a simple calculation; and/or Child did not successfully complete primary education 	<ul style="list-style-type: none"> 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 500 m. for rural areas and more than 200m for urban areas 	<ul style="list-style-type: none"> Child lives in a household which uses unimproved toilet facility 	<ul style="list-style-type: none"> Child lives in a 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, mud slides, destructive rains, or other environmental destruction in the last 12 months

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.

The following chapters provide a detailed overview of the MODA analysis. For each age group, the following analyses were carried out:

- **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 six 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)** to look at the number of deprivations 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.



CHAPTER 2: MULTIDIMENSIONAL CHILD POVERTY ANALYSIS BY AGE GROUP

This section provides an in-depth analysis of multidimensional child poverty for the following age groups: 0-23 months, 24-59 months, 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) **Single sector analysis** (where the deprivation rates per indicator and dimension are presented to inform sectoral 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 0-23 months

Key results for children 0-23 months in Rwanda

- 57% of the children in this age group are multi-dimensionally poor - they face at least three out of six deprivations.
- The multi-dimensionally poor children face an average of 3.8 out of 6 deprivations at the same time.
- Nearly all children (95.7%) face deprivation in at least one dimension.
- The majority of children aged 0-23 months are deprived in nutrition and sanitation (66.2% and 63.6%, respectively). The high level of deprivation in these two dimensions is driven by the fact that more than six in 10 children fail to meet the requirements for infant and young child feeding practices (nutrition dimension), while around half of the children do not have access to improved toilet facilities (sanitation dimension).
- Children living in rural areas are significantly more likely to experience multiple deprivations (multidimensional poverty) than children living in urban areas (60.9% in rural compared to 38.1% in urban areas). Western Province has the highest proportion of multidimensionally poor children (67.9%).
- In both urban and rural areas, the sanitation dimension contributes the most to the multidimensional poverty of children.



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(a) Single sector analysis

This section covers the child poverty (or deprivation) analysis for children aged 0-23 months using the dimensions of nutrition, health, child protection, water, sanitation and housing. Figure 2 provides detailed data on indicators for children aged 0-23 months in each of the dimensions.

The **nutrition dimension** has the highest deprivation rate of 66.2%, mostly driven by the indicator infant and young child feeding (IYCF): 66.2% of children face deprivation in IYCF (measured by meal frequency and food diversity, as defined by WHO). In addition, almost 12.9% of the children younger than six months are not exclusively breastfed.

The **health dimension** shows a deprivation rate of 53.7%, mostly driven by the indicator health insurance: 38.4% of children do not live in a household that has health insurance. In addition, 24.8% did not sleep under a mosquito net during the night before the survey. Rwanda is doing relatively well in skilled birth attendance and vaccination, where low deprivation rates (of 7.9% and 4.6%, respectively) were noted.

Under the **protection dimension**, the indicator inadequate care (leaving the child alone or with another child of less than 10 years for more than one hour per week) drives a deprivation rate of 22.3%.

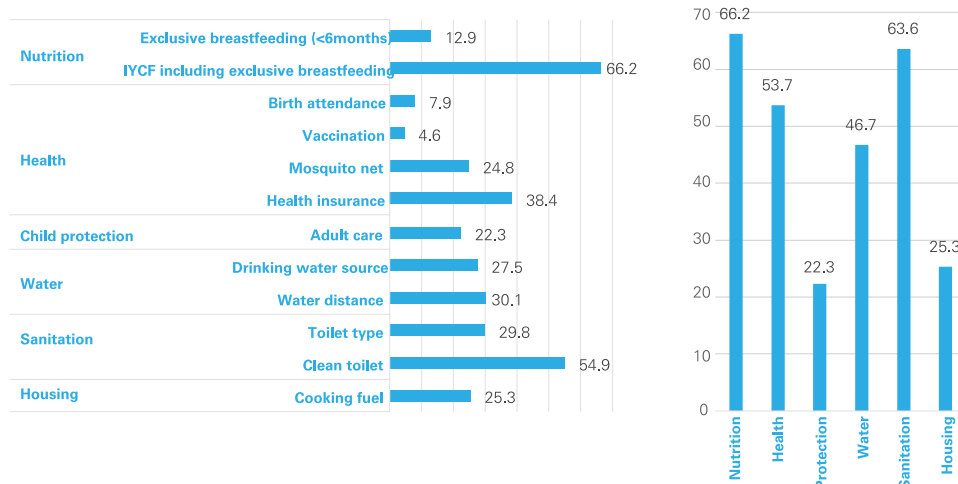
Under the **water dimension**, almost half (46.7%) of children in this age group are deprived. They live in a household where the drinking water source is unimproved (27.5%) and 30.1% live a long way from a water source (more than 200m in urban areas and more than 500m in rural areas).

A high proportion (63.6%) of children are deprived under the **sanitation dimension**: 29.8% of children do not have access to an improved toilet facility while 54.9% have a toilet facility which is not clean and dry.

A quarter (25.3%) of children are deprived when it comes to the **housing dimension** (measured by the proportion of children living in a household which uses solid cooking fuel).

Figure 2: Deprivation rates (%) in each indicator and dimension of a child's wellbeing, 0-23 months

Source: DHS 2014/15



Where do the deprived children aged 0-23 months live?

Children living in urban areas have significantly lower deprivation rates than those in rural areas in all dimensions (Figure 3). In housing, there is a difference of 14.2 percentage points between urban and rural areas (13.6% and 27.8%, respectively); in health, 56.1% of children living in rural areas are deprived compared to only 42.1% of children in urban areas. The largest contrast is observed for sanitation where there is a difference of 16.9% between urban and rural children.

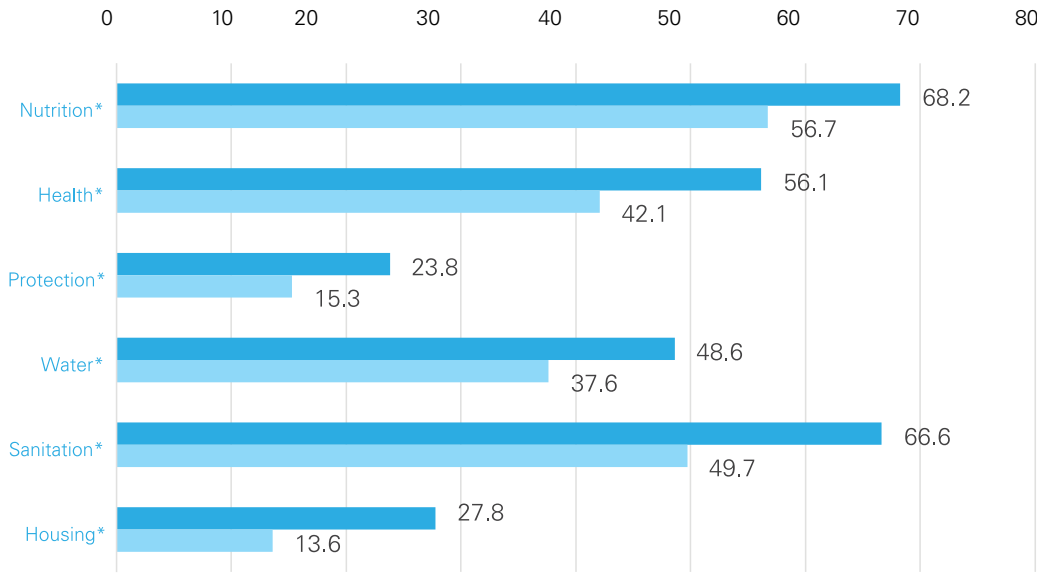


Figure 3: Deprivation rates (%) in each dimension, by area of residence, 0-23 months

Source: DHS 2014/15

Kigali City has the lowest deprivation rates in all dimensions (Figure 4). Western Province, on the other hand, has the highest rate of deprivations in nutrition, health and sanitation. Three quarters (74%) of children aged 0-23 months in Western Province are deprived in terms of nutrition while 70% do not have access to proper sanitation. Around 60% of children in Western Province are deprived in terms of health. Southern Province shows the highest deprivation rates in housing (47%), whereas water is the main deprivation in Eastern Province (55%). Over a quarter (27%) of children aged 0-23 months living in the Northern Province were left alone and/or left with another child of under 10 years old for more than one hour during the week before the survey.

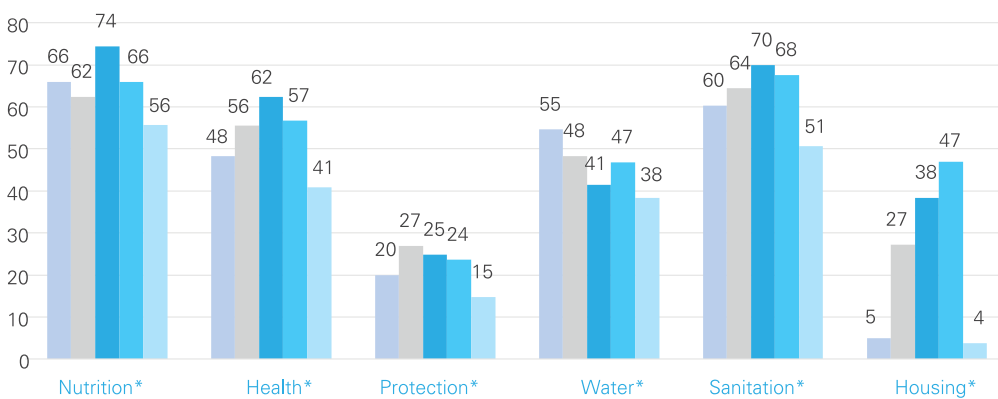


Figure 4: Deprivation rates (%) in each dimension of a child's wellbeing by province, 0-23 months

Source: DHS 2014/15

Legend: East (light blue), West (dark blue), North (grey), South (medium blue), Kigali City (lightest blue)

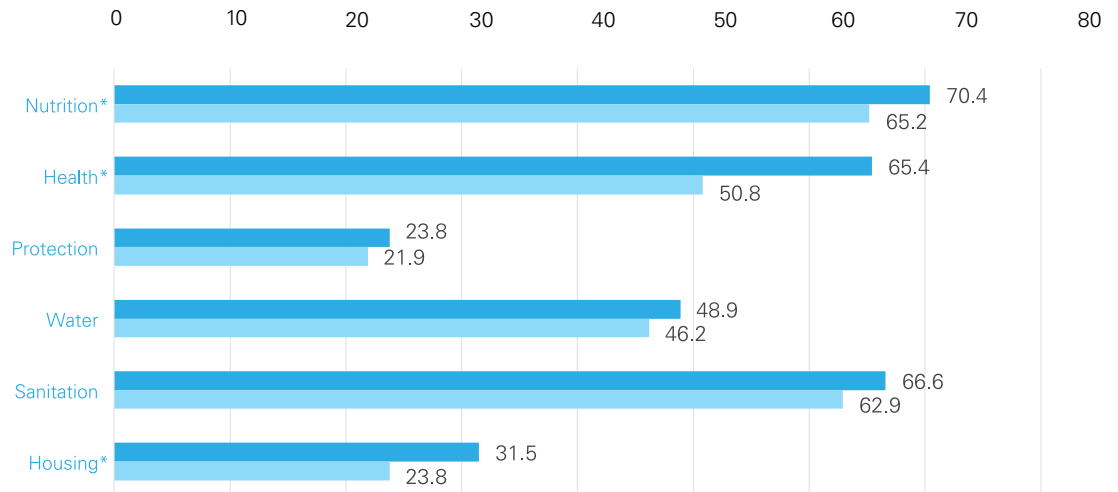
Who are the deprived children aged 0-23 months?

Children living in female-headed households are more likely to be deprived than children living in male-headed households for all dimensions, as shown in Figure 5. The most significant gap is identified in health, with 65.4% of the children living in female-headed households deprived compared to 50.8% of children living in male-headed households. The differences are also statistically significant in nutrition and housing.

Figure 5: Deprivation rates (%) in each dimension of a child's wellbeing by sex of the household head, 0-23 months

Source: DHS 2014/15

■ Female ■ Male

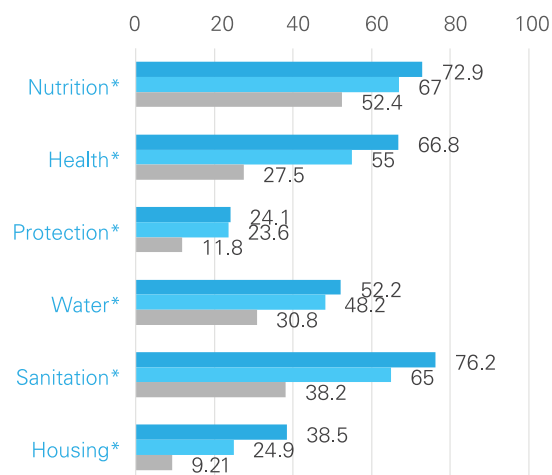


The education levels of the household head and of the mother both play a role in the deprivation levels experienced by a child. Children aged 0-23 months encounter lower deprivation rates when the household head and/or mother has attained secondary or higher education levels than children with a household head and/or mother with low or no education. All differences observed are statistically significant. The largest gap between heads of households and mothers with no education and those with secondary-higher education, of 39%-41%, respectively, is observed in the health dimension (Figures 6 and 7).

Figure 6: Deprivation rates (%) in each dimension of a child's wellbeing by education level of head of household, 0-23 months

Source: DHS 2014/15

■ No education
■ Primary
■ Secondary-Higher



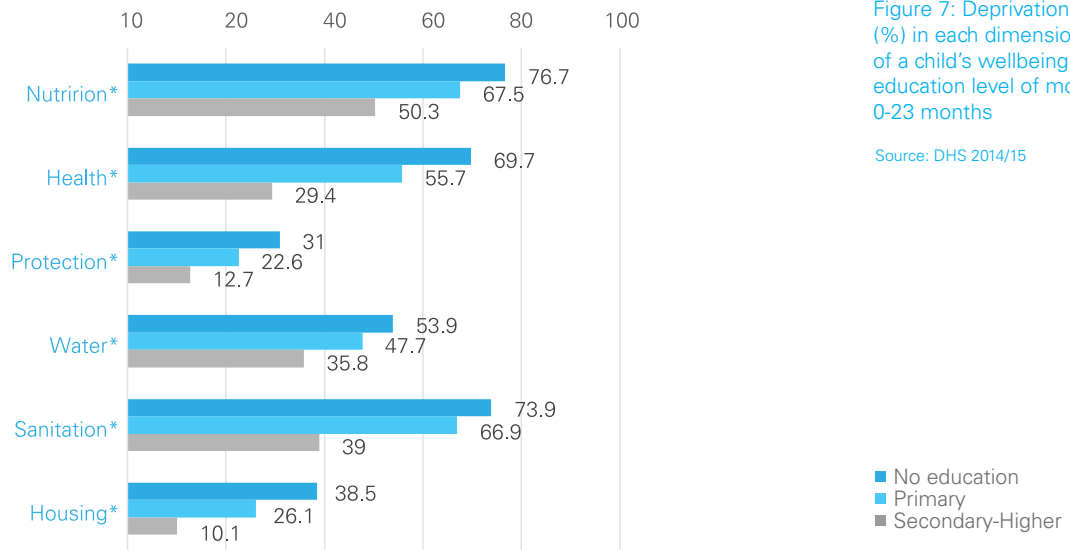


Figure 7: Deprivation rates (%) in each dimension of a child's wellbeing by education level of mother, 0-23 months

Source: DHS 2014/15

■ No education
 ■ Primary
 ■ Secondary-Higher

(b) Multidimensional deprivation analysis

Distribution of deprivations

Figure 8 shows the distribution of deprivations at national level. Only about 4.3% of children suffer no deprivations while 14.9% suffer from only one deprivation. The majority of children (27%) are deprived in three dimensions; almost 1.6% suffer from deprivations in all six dimensions.

Disaggregation by area of residence (Figure 9) shows that children from urban areas tend to suffer fewer deprivations than children from rural areas. While most of the children living in urban areas (62.0%) are, by the definition adopted by this study, not multidimensionally deprived,⁹ more than half (60.9%) of rural children are multidimensionally deprived (they experience deprivation in three or more dimensions simultaneously).

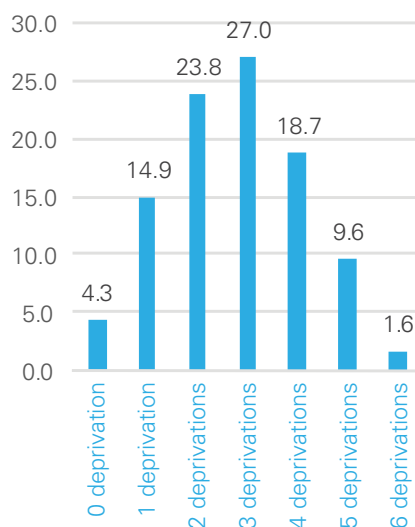


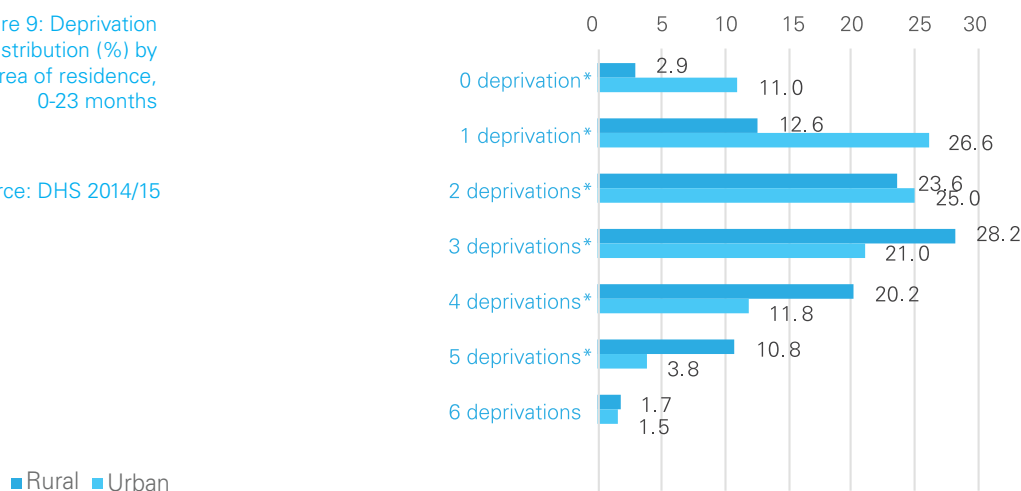
Figure 8: Deprivation distribution (%) at the national level, 0-23 months

Source: DHS 2014/15

⁹ As explained before, this study defines multidimensional poverty as suffering from at least three simultaneous deprivations. If children suffer 0-2 deprivations (as in this case) they are not considered poor.

Figure 9: Deprivation distribution (%) by area of residence, 0-23 months

Source: DHS 2014/15



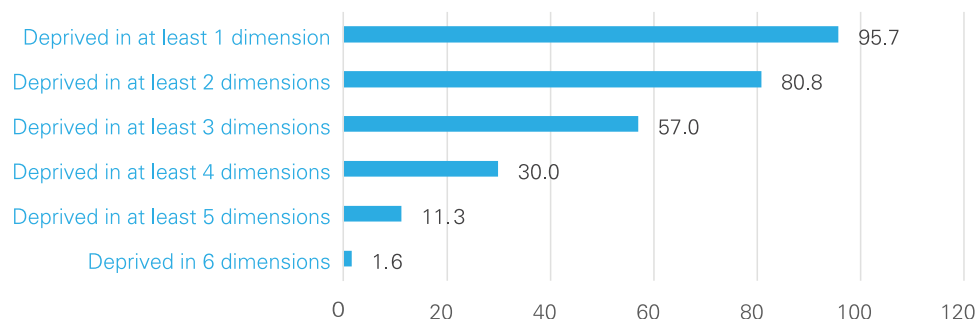
The multidimensional deprivation headcount (H)

The multidimensional deprivation headcount (H) shows the proportion of children experiencing different numbers of deprivations at the same time.

Of all deprived children aged 0-23 months in Rwanda, 95.7% are deprived in at least one dimension and 1.6% face deprivation in all six dimensions (Figure 10). More than half (57%) of the children in this age group are multidimensionally poor (they face at least three deprivations). Western Province has the highest proportion of multidimensionally poor children (67.9%) while Kigali City has the fewest, with a deprivation headcount of 33.5% (Figure 11).

Figure 10: Multidimensional deprivation headcount (%) of deprivations at the national level, 0-23 months

Source: DHS 2014/15



Average intensity of deprivation amongst multidimensionally poor children (A)

Intensity of deprivation (A) refers to the average number of dimensions experienced by multidimensionally poor children. Multidimensionally poor children aged 0-23 months face an average of 3.8 out of six deprivations. The intensity of deprivation is higher for children in rural areas (average 3.8 deprivations) than for children in urban areas (an average of 3.6 deprivations, Figure 12). It is worth noting that the average intensity of deprivation amongst the deprived children in Kigali (average 3.5 deprivations) is similar to average intensity of deprivations amongst children in other areas. This implies that the multidimensionally poor children in Kigali, though they are fewer, are almost as poor as the multidimensionally poor children of the other provinces.

Multidimensional child poverty index (M0)

The multidimensional child poverty index (M0) has been calculated to capture 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.

The index can be used to compare different profiles of children (e.g. children living in rural versus urban areas). The higher the index, the more vulnerable are the children. As shown in Figure 11, urban areas have much lower multidimensional child poverty index than rural areas (0.23 compared to 0.38).

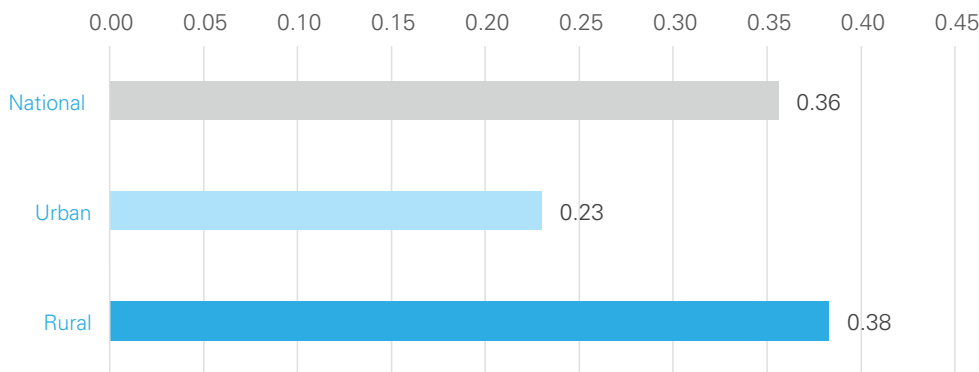


Figure 11: Multidimensional child poverty index at the national level and by area of residence, 0-23 months

Source: DHS 2014/15

Western and Southern provinces (Figure 12) have the highest multidimensional indices, at 0.44 and 0.42 respectively, almost double than the City of Kigali (0.20).

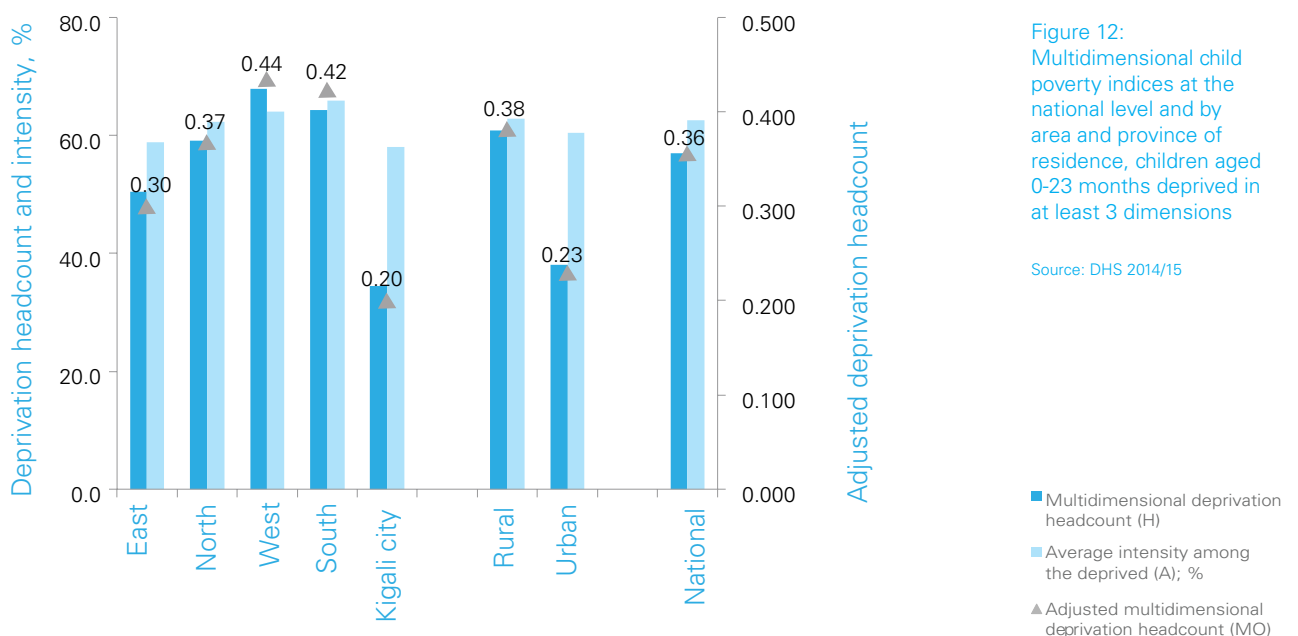


Figure 12: Multidimensional child poverty indices at the national level and by area and province of residence, children aged 0-23 months deprived in at least 3 dimensions

Source: DHS 2014/15

How does each dimension contribute to deprivation level?

The decomposition analysis was also done to understand which dimensions contribute most to the multidimensional deprivation index and overall deprivation levels. The decomposition presented in Figure 13 indicates similar patterns for national level and in urban and rural areas.

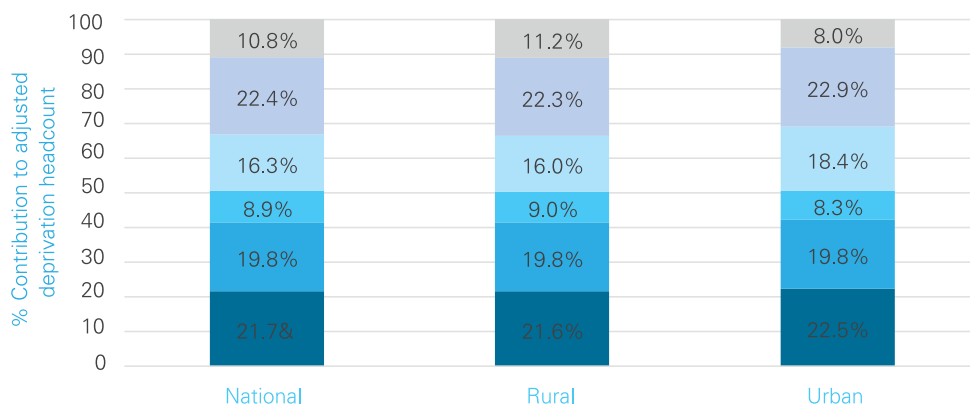
in both urban and rural areas. Although the observed difference is small, water contributes slightly more to deprivation levels in urban than in rural areas (18.4% compared to 16%). Housing, on the other hand, contributes more to the deprivation index nationally and in rural areas than in urban areas (10.8% and 11.2% versus 8%).

Sanitation and nutrition contribute the most (about 22%) to national deprivation levels and

Figure 13: Decomposition (%) of the multidimensional child poverty index (M0), 0-23 months

Source: DHS 2014/15

- Housing
- Sanitation
- Water
- Protection
- Health
- Nutrition



Deprivation overlap analysis

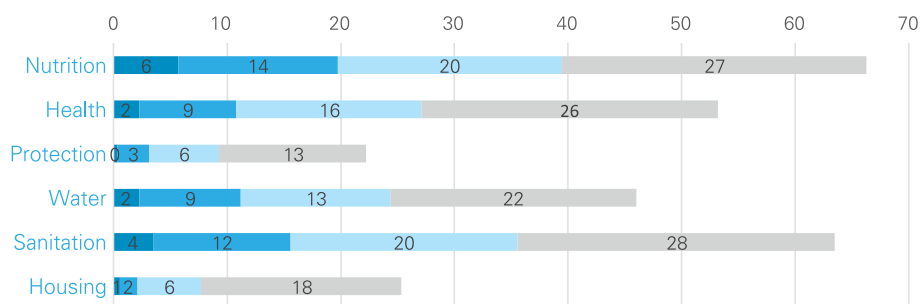
Figure 14 highlights how the different deprivations overlap for children aged 0-23 months. Very few children are deprived in only one dimension - most children who are deprived in one dimension are also simultaneously deprived in three or more other dimensions.

For example, of all children deprived in water, only 2% are deprived only in water dimension and 22% are deprived in three or more dimensions.

Figure 14: Deprivation overlap (%) by dimension, 0-23 months

Source: DHS 2014/15

- Only deprived in the given dimension
- Deprived in 1 other dimension
- Deprived in 2 other dimension
- Deprived in 3 or more other dimension



The combinations of deprivations that are experienced simultaneously are best presented using Venn diagrams*. A Venn diagram of any combination of three dimensions shows the deprivation levels for: (1) each dimension separately; (2) the overlap between two dimensions; and (3) the overlap between three dimensions. The percentage of children not deprived in any of the three dimensions is noted as a percentage in each diagram.

While this study analysed all combinations of dimensions, only the most telling results are presented in this report.

The Venn diagram of the deprivation rates for nutrition, health and sanitation (Figure 15) shows one of the largest overlaps (26.6%) of all possible combinations

of three dimensions. Of the 66.2% of children deprived in nutrition, only 13.4% were deprived in nutrition only, while the remaining 52.8% were also deprived in health and/or sanitation. There is a relatively large overlap (16.5%) between nutrition and sanitation. Just 8.1% of the children of this age were not deprived in any of these three dimensions.

Figure 15 also shows the overlap of nutrition, health and sanitation by rural and urban areas. In rural areas, 28.8% of the children aged 0-23 months are simultaneously deprived in nutrition, health and sanitation, compared to only 16.2% of children in urban areas. A higher proportion of children in urban areas are not deprived in any of the three dimensions, compared to children in rural areas (16.0% versus 6.5%).

National

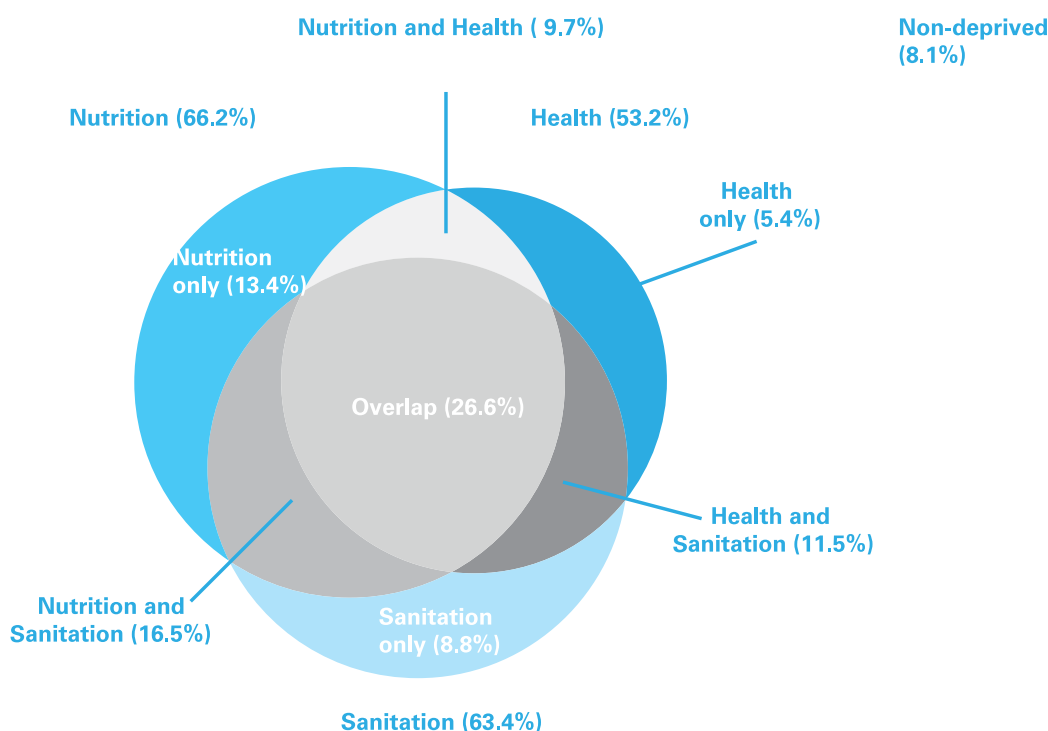
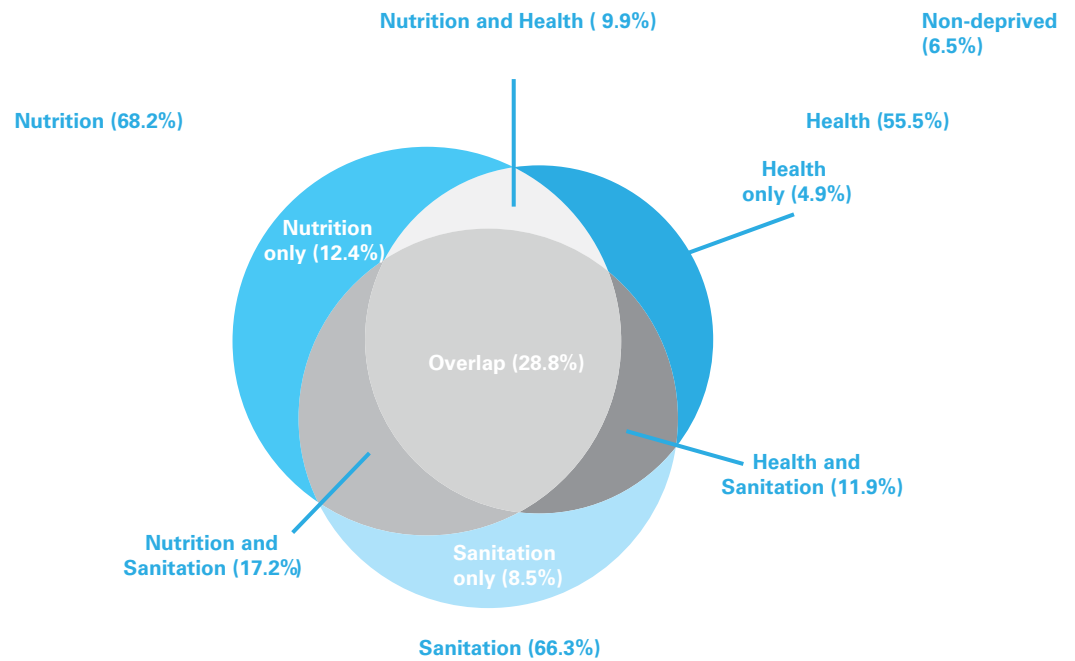


Figure 15: Venn diagrams of the deprivation overlap between nutrition, health and sanitation at the national level and by area of residence, 0-23 months

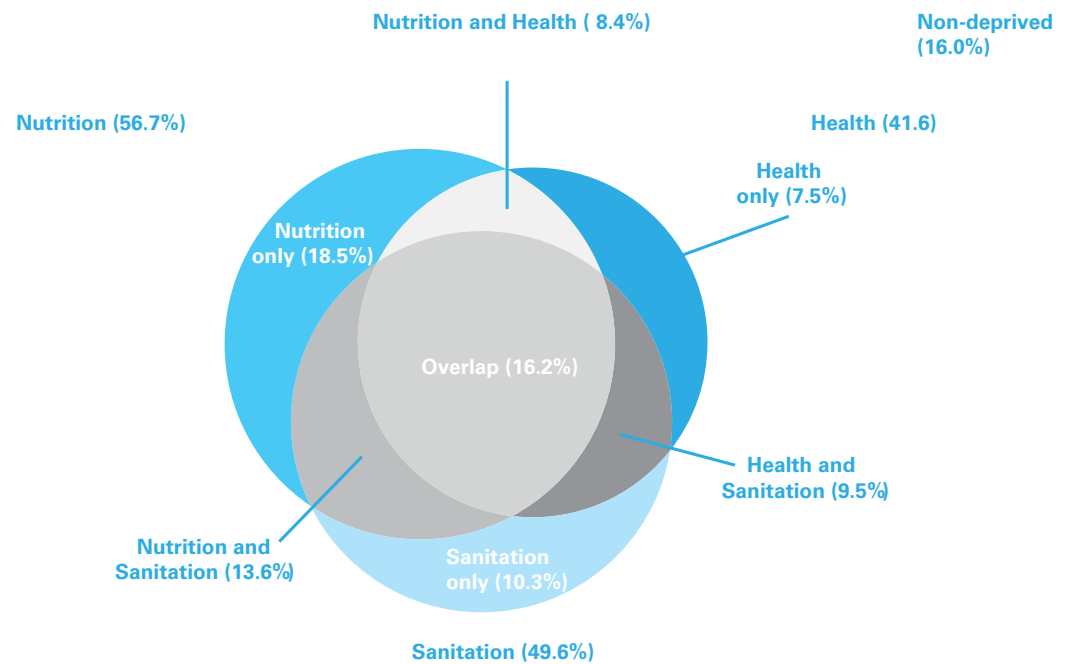
Source: DHS 2014/14

* Within the single sector analysis, missing values on particular indicators and dimensions remain missing. As a consequence, children with missing information will be excluded from the calculation (both from the numerator and denominator) of the deprivation headcount ratio. But in the multidimensional (poverty) analysis, the MODA methodology requires that missing values are considered as non-deprived. Only indicators with a very low percentage of missing values are retained in the analysis to ensure for sample representativeness and control for the direction of the bias. Source: UNICEF Office of research (2012). Step by step guidelines to the Multiple Overlapping Deprivation Analysis. Available at: https://www.unicef-irc.org/publications/pdf/iwp_2012_10.pdf

Rural



Urban



2.2 Children aged 24-59 months

Key results for children aged 24-59 months in Rwanda

- 54% of children are multidimensionally poor - they suffer from at least three out of six deprivations.
- The multidimensionally poor children face an average of 3.7 out of 6 deprivations at the same time.
- Nearly all children (93.9%) of children in this age group face at least one deprivation; the majority of them (27.4%) experience three deprivations simultaneously.
- Most children in this age group are deprived in sanitation and health (64.2% and 53.8%, respectively) and almost 9 out of 10 are not attending any early childhood education or pre-school programme.
- Multidimensional poverty (multiple deprivations) rates are higher for children living in rural areas (57.3% compared to 36.5% in urban areas), and in Western Province and Southern Province (63.9% and 60.8%, respectively).
- Sanitation contributes the most, by around 23-24%, to the multidimensional child poverty index at national, rural and urban levels.

(a) Single sector analysis

This section covers the child poverty (or deprivation) analysis for children aged 24-59 months using the dimensions of health, child development, child protection, water, sanitation and housing. The deprivation rates for the indicators used to measure each dimension of wellbeing are shown in Figure 16.

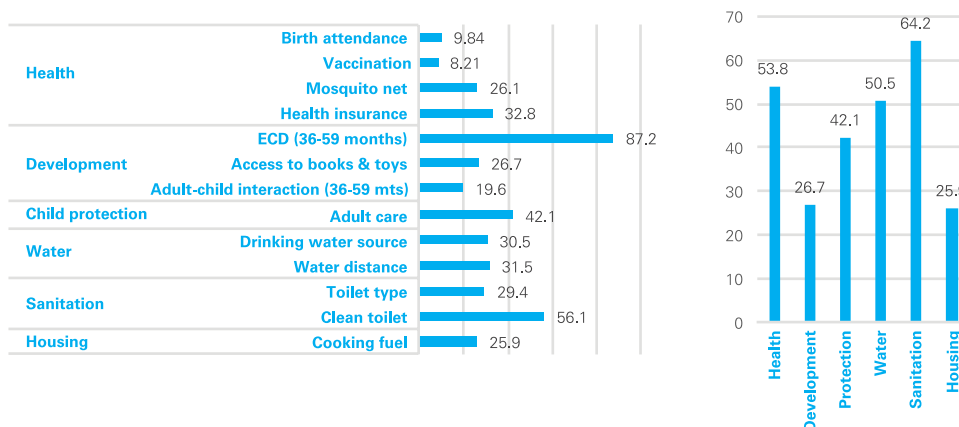


Figure 16: Deprivation rates (%) in each indicator and dimension of a child's wellbeing at national level, 24-59 months

Source: DHS 2014/15

Under the health dimension, the highest deprivation rate (32.8%) is observed for health insurance followed by 26.1% of children not sleeping under a mosquito net. Rwanda is doing well in terms of birth attendance and vaccination, recording very low rates of deprivation (9.8% and 8.2% percent, respectively). The children in the younger age group 0-23 months analysed in the previous section (Figure 2) have even lower levels of deprivation in birth attendance (7.9%) and vaccination (4.6%).

When it comes to early childhood development (ECD), more than a quarter (26.7%) of children are deprived. This is driven by deprivation rates of almost 19.6% in adult-child interaction, 26.7% in access to books and toys and 87.2% for ECD services attendance (only measured for 36-59 months).

Rwanda has intensified its efforts to increase availability of ECD services over the past few years. The enrolment of children in pre-primary education increased by 38% between 2013 and 2015, and there are ongoing efforts, including through the new ECD Policy and Implementation Plan, to increase access to ECD services. Given that the ECD sector is an emerging priority for the government, measuring the outcomes in access to early childhood and pre-school education (as specified under SDG 4 and its indicators) is increasingly relevant to allow consistent monitoring of progress in the future.

In the protection dimension, 42.1% of children in this age group are deprived in the indicator adult care (the child is left alone or in the care of another child under 10 years for more than one hour per week). This number (of children left without adult care) is much higher than for the younger age group (0-23 months) where the adult care indicator was 22.3%.

Analysis of the water dimension shows that 30.5% of children live in households which use an unimproved drinking water source and 31.5% are deprived in the indicator distance to water.

The sanitation dimension is measured by indicators on toilet type and cleanliness: 29.4% of children of this age group live in a household with an unimproved toilet facility and 56.1% live in a household that uses a wet or dirty toilet facility (with excreta or flies).

Where do the deprived children aged 24-59 months live?

Children in rural areas are more likely to be deprived than urban children in all dimensions (Figure 17). Except for the child development dimension, all differences are statistically significant. The protection, water and sanitation dimensions show a difference of around 16 percentage points between rural and urban areas.



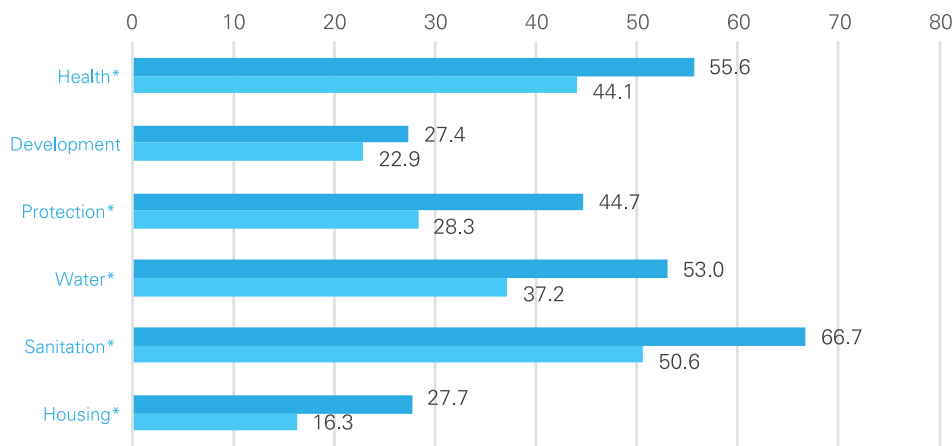


Figure 17: Deprivation rates (%) in each dimension of a child's wellbeing by area of residence, 24-59 months

Source: DHS 2014/15

■ Rural ■ Urban

When it comes to geographical distribution of deprivation dimensions (Figure 18), Western Province is somewhat lagging in comparison to other provinces in terms of health, child development and sanitation: 61% of children living in Western Province are deprived in health, almost 4 in 10 (37%) children are deprived in child development and 72% of children lack access to improved sanitation.

Kigali City scores best in all dimensions, while Southern Province has the highest deprivation rate for housing (47%). There is a higher proportion of children deprived in protection (49%) in Northern Province compared to other provinces.

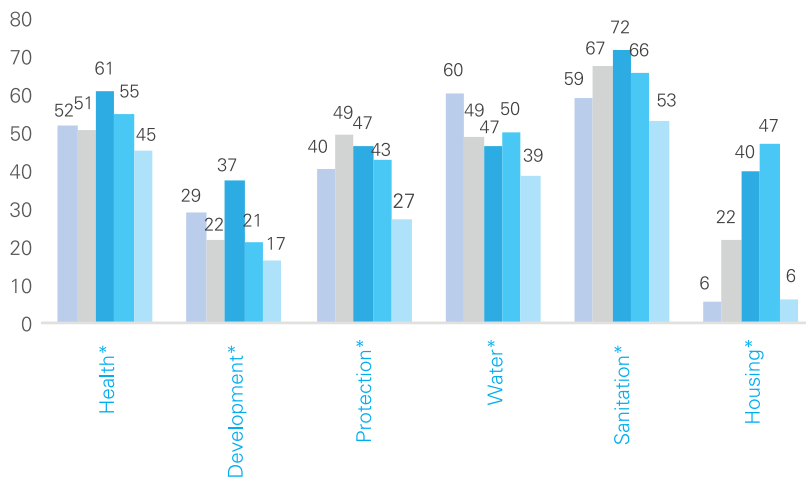


Figure 18: Deprivation rates (%) in each dimension of a child's wellbeing by province, 24-59 months

Source: DHS 2014/15

■ East ■ North
 ■ West ■ South
 ■ Kigali City

Who are the deprived children aged 24-59 months?

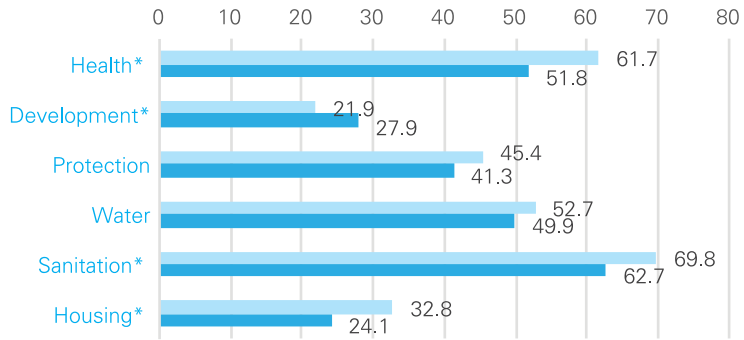
Generally, as with the younger age group, children living in female-headed households are more deprived than children in male-headed households (Figure 19). The exception is child development, where there are higher deprivation rates in male-headed households than in female-headed households (27.9% and 21.9%, respectively). The discrepancy is

largest in health, where 61.7% of children living in female-headed households are deprived, compared to 51.8% of children living in male-headed households. With the exception of protection and water, all dimensions show statistically significant differences between male and female-headed households.

Figure 19: Deprivation headcount ratio (%) by dimension and sex of the household head, 24-59 months

Source: DHS 2014/15

Female Male



Similar to the younger age group, the higher the education level of the household head and/or the mother, the less likely a child is to be deprived (Figures 20 and 21). This applies to all dimensions, with nearly all differences being statistically significant. Children with a household head and/or mother with no education are thus most vulnerable. The differences in deprivation levels between boys and girls aged 24-59 months are not statistically significant (Figure 22).

Figure 20: Deprivation rates (%) in each dimension of a child's wellbeing by education level of the household head, 24-59 months

Source: DHS 2014/15

No education Primary Secondary-Higher

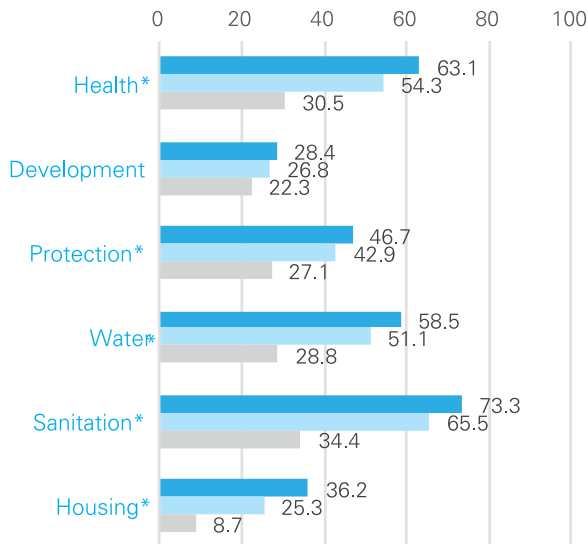
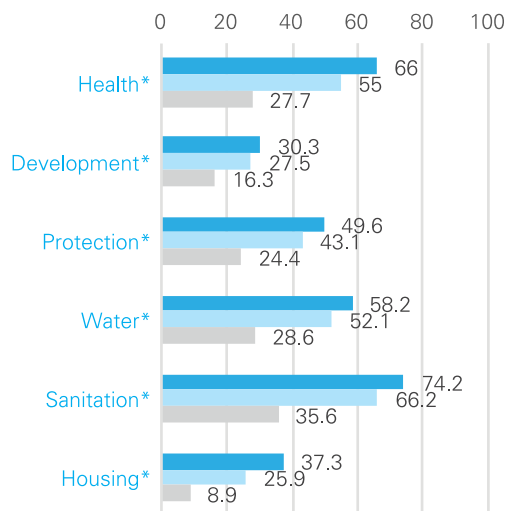


Figure 21: Deprivation rates (%) in each dimension of a child's wellbeing by education level of the mother, 24-59 months

Source: DHS 2014/15

No education Primary Secondary-Higher



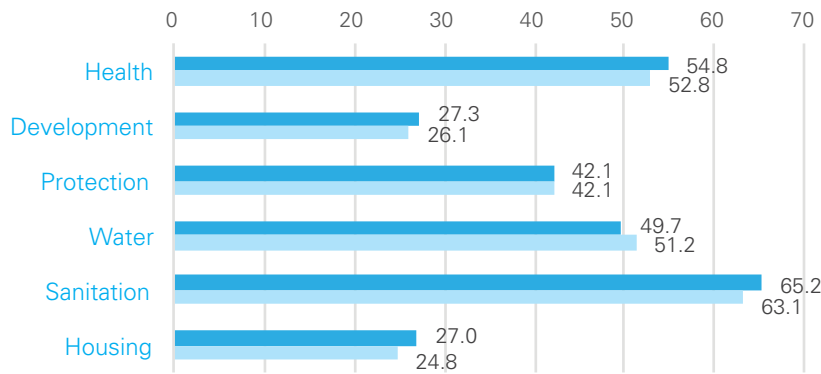


Figure 22: Deprivation headcount ratio (%) by dimension and sex of the child, 24-59 months

Source: DHS 2014/15

■ Female ■ Male

(b) Multidimensional deprivation analysis

Distribution of deprivations

As shown in Figure 23, at national level, only 6.1% of children face no deprivations while around 0.7% are deprived in all six dimensions. The majority of children (27.4%) experience three simultaneous deprivations. Urban children face

fewer deprivations than children living in rural areas, with most differences being statistically significant (Figure 24). Most rural children face three or more deprivations at the same time (57.3% compared to 36.7% for urban children).

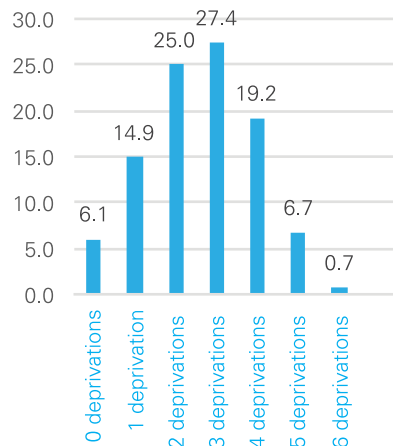


Figure 23: Deprivation distribution (%) at the national level, 24-59 months

Source: DHS 2014/15

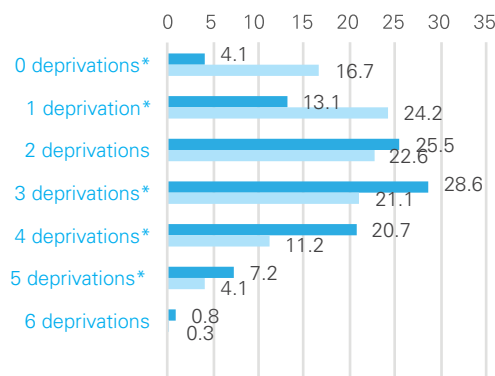


Figure 24: Deprivation distribution (%) by area of residence, 24-59 months

Source: DHS 2014/15

■ Rural ■ Urban

The multidimensional deprivation headcount (H)

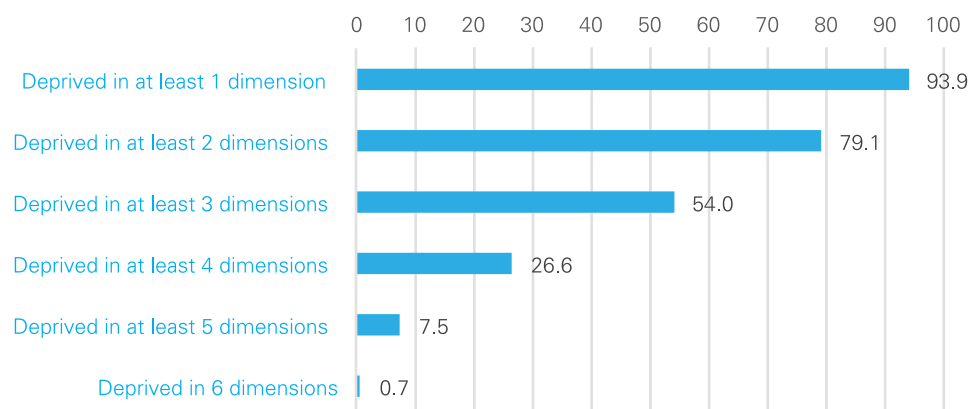
Almost all (93.9%) of children aged 24-59 months are deprived in at least one dimension (Figure 25). More than half (54.0%) of them are multidimensionally poor according to the agreed definition (experiencing deprivations in three dimensions simultaneously).

The headcount of multidimensional deprivations drops gradually, with 26.6%

of children deprived in four dimensions and 7.5% in five dimensions - very few (0.7%) experience all six deprivations simultaneously. At subnational level, Western Province (Figure 27) has the highest count of multidimensional poverty, at 63.9, followed by Southern Province at 60.8 %, in comparison to the lowest count of 30.8% in Kigali City.

Figure 25:
Multidimensional deprivation (%) headcount of deprivations at the national level, 24-59 months

Source: DHS 2014/15



Average intensity of deprivation amongst multi-dimensionally poor children (A)

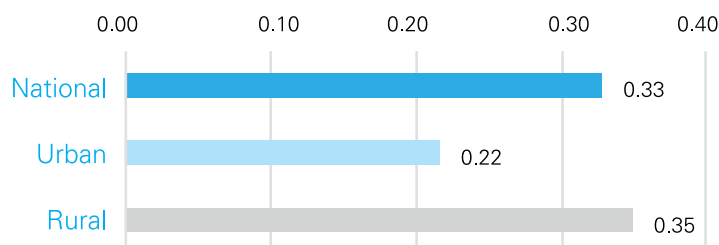
Multidimensionally poor children experience, on average, 3.7 deprivations. Rural children experience almost the same deprivation intensity (approximately 3.7) as urban children (who experience 3.5 deprivations simultaneously). As was the case for multidimensionally poor children 0-23 months in Kigali City, children within the 24-59 months age group experience an intensity of deprivations similar to that of children in rural and urban areas (3.4).

Multidimensional child poverty index

Figure 26 shows that children aged 24-59 months in rural areas are lagging behind their urban peers – the rural multidimensional child poverty index is 0.35 compared to 0.22 in towns.

Figure 26:
Multidimensional child poverty index at the national level and by area of residence, 24-59 months

Source: DHS 2014/15



Children living in Western Province score the highest on the multidimensional child poverty index (0.41). Kigali City (0.17) and urban areas (0.22) have fewer multidimensionally poor children. In other provinces, the multidimensional poverty index is close to national index (Figure 27).

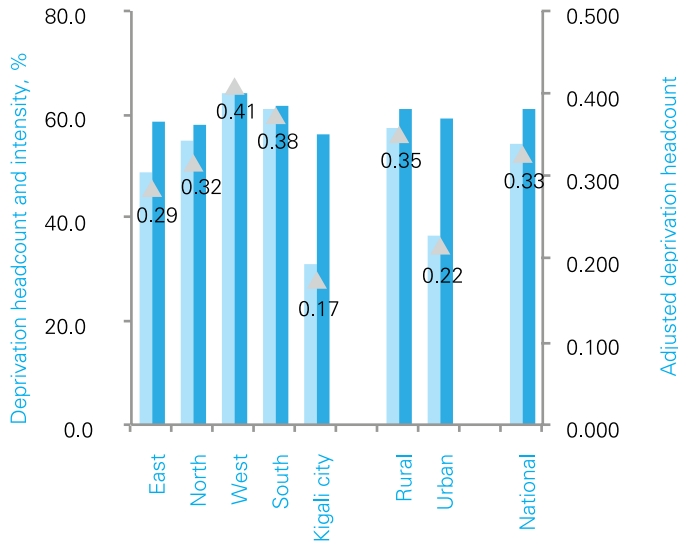


Figure 27: Indices at the national level and by area of residence and province, children aged 24-59 months who are deprived in at least 3 dimensions

Source: DHS 2014/15

- Multidimensional deprivation headcount (H), %
- Average intensity among the deprived (A), %
- ▲ Multidimensional Child Poverty Index (M0)

How does each dimension contribute to deprivation level?

Figure 28 shows how individual dimensions contribute to the multidimensional deprivation index for this age group. Sanitation contributes the most at national (23%), rural (23%) and urban levels (24%). Health and water are also important contributors; housing is the least influential.

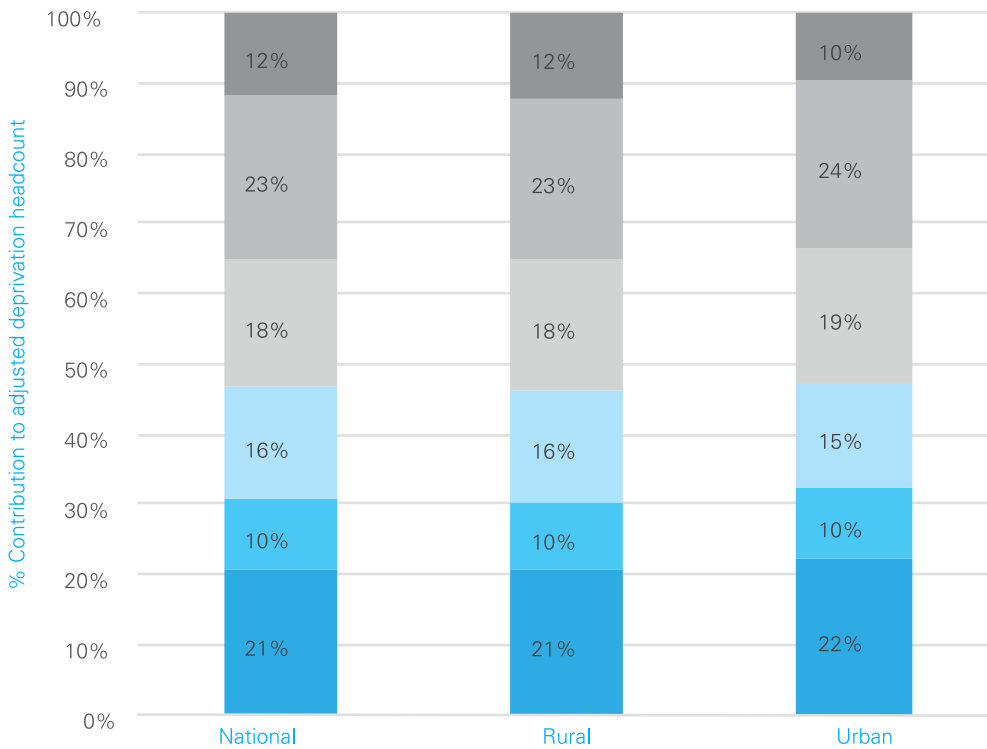


Figure 28: Decomposition of the multidimensional child poverty index (M0), 24-59 months

Source: DHS 2014/15

- Housing
- Sanitation
- Water
- Protection
- Development
- Health

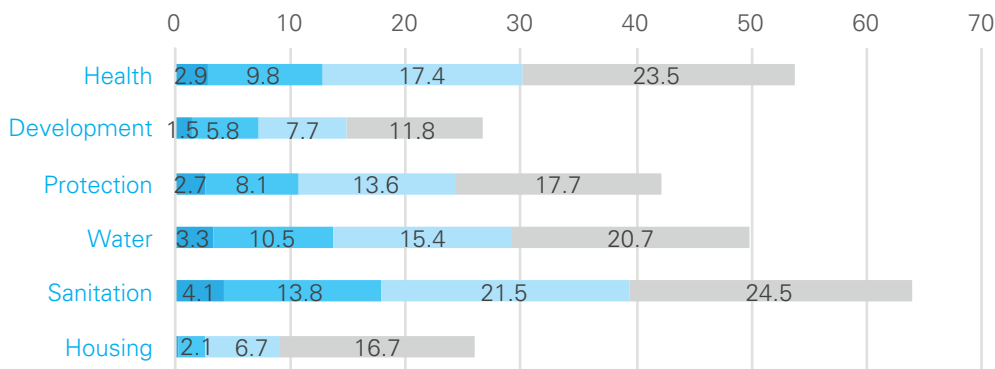
Deprivation overlap analysis

As in the younger age group, very few children aged 24-59 months are deprived in only one dimension. Most are deprived in at least three others (Figure 29). When it comes to sanitation, just 4.1% children are deprived in the sanitation dimension only, while 24.5% are deprived in sanitation plus three more dimensions simultaneously.

Figure 29: Deprivation overlap (%) by dimension, 24-59 months

Source: DHS 2014/15

- Only deprived in the given dimension ■
- Deprived in 1 other dimension ■
- Deprived in 2 other dimensions ■
- Deprived in 3 or more other dimensions ■

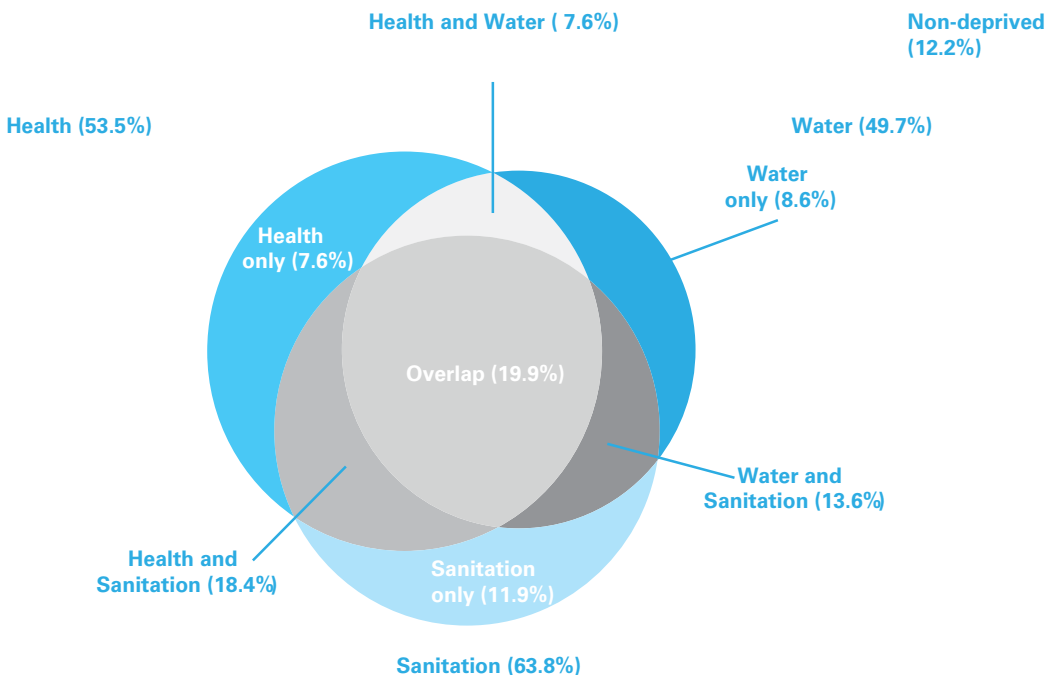


The Venn diagram in Figure 30 shows the overlap between deprivations in health, water and sanitation for children aged 24-59 months. A fifth (19.9%) of the children are simultaneously deprived in all three dimensions. The proportion of children deprived in a single dimension only is fairly small (7.6% in health, 8.6% in water and 11.9% in sanitation), and 12.2% are not deprived in any of the three dimensions. Of the overlaps between any two dimensions, the largest is between health and sanitation (18.4%). The overlap between health, water and sanitation is lower for children living in urban areas than for children living in rural areas (14% versus 21%, respectively).

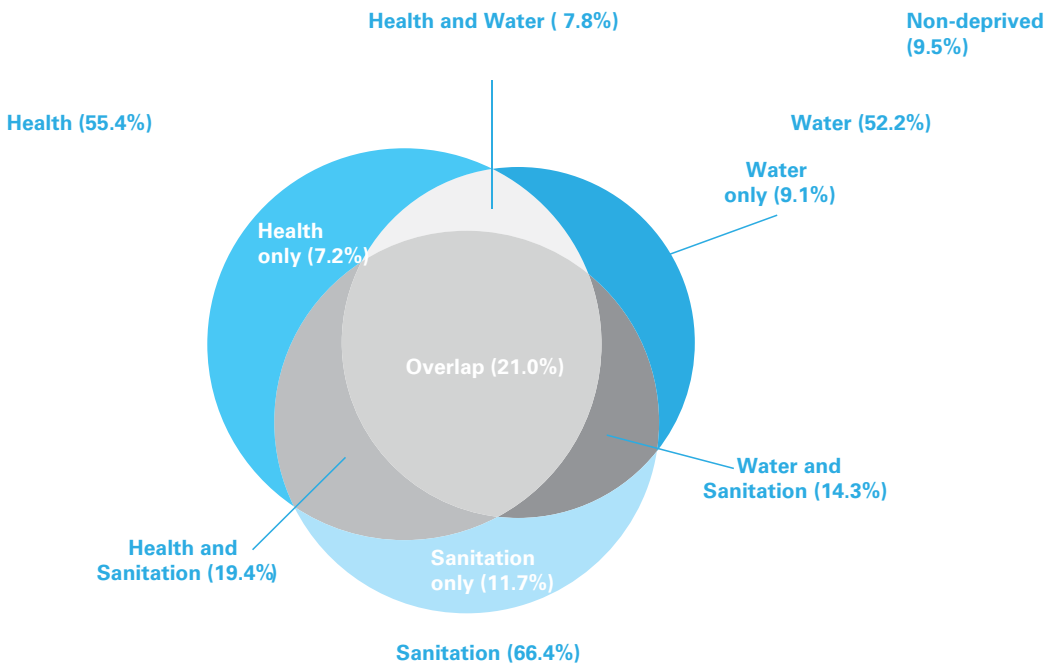
National

Figure 30: Venn diagram showing the overlap between health, water and sanitation at the national level and by area of residence, 24-59 months

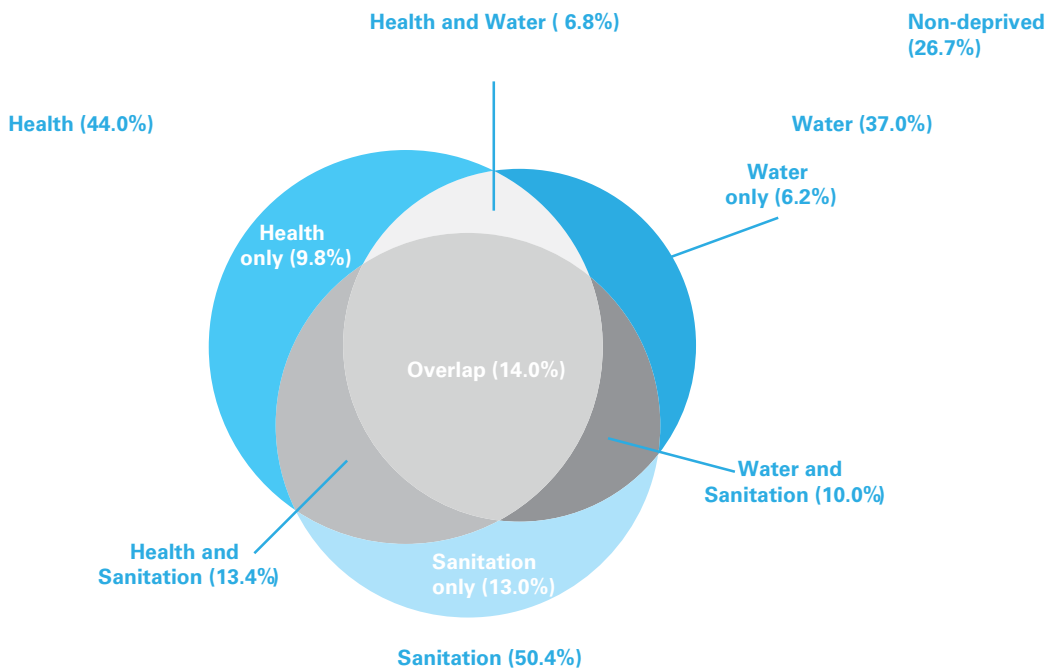
Source: DHS 2014/15



Rural



Urban



2.3 Children aged 5-14 years

Key results for children aged 5-14 years in Rwanda

- Almost 29.2% of the children aged 5-14 years are multidimensionally poor, being deprived in at least three of five dimensions of their wellbeing.
- These poor children are, on average, deprived in 3.2 out of five dimensions.
- Nine out of ten children experience at least one deprivation and 34.4% of them suffer from two out of five deprivations.
- Over two thirds (67.6%) of the children are deprived in housing and around half face deprivation in water and/or health. Almost a half (46.7%) of the children live in households where the distance to the nearest water source is more than 500m in rural areas or more than 200m in urban areas.
- Deprivation rates are higher for children living in rural areas (31.5%) than for children in urban areas (15.5%).
- Children with a household head/mother who attained higher education levels are less likely to be deprived in all dimensions and tend to experience fewer simultaneous deprivations.
- Housing, water and health dimensions contribute the most to the overall deprivation index for children of this age group.

(a) 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 31.

- When it comes to the health dimension, half of the children are deprived in health, as measured using the indicators health insurance and distance to health centre (recording deprivation levels of 32.1% and 28.0%, respectively).
- Under the education dimension, Rwanda is doing relatively well, with less than 7.5% of children aged 5-14 years not attending school.
- In the water dimension, 15.1% of children do not have access to an improved water source, and almost half (46.9%) are deprived in the indicator distance to water source.¹⁰
- In sanitation, about 15.3% of children do not have access to an improved toilet facility.

¹⁰ The rates obtained for dimensions measured at household level (water, sanitation and housing) are different for the older age groups because different datasets were used (DHS datasets for under-5 children and EICV for children aged 5 years and above). DHS data was collected by observation (e.g. of the water source or toilet type), whereas EICV data was collected from the responses of household heads.

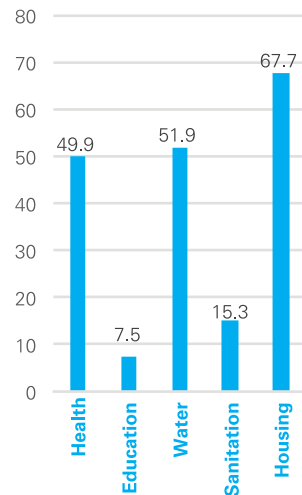
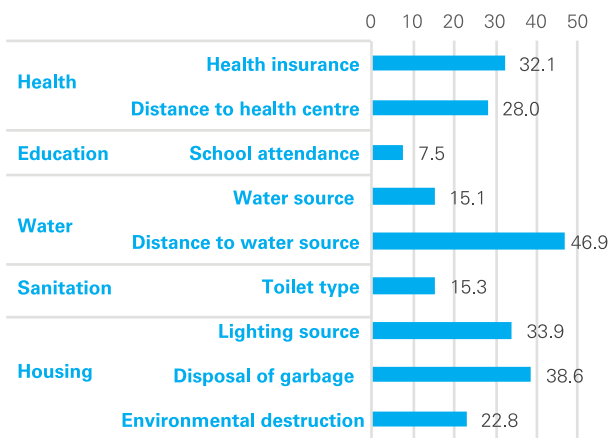


Figure 31: Deprivation rates (%) in each indicator and dimension of a child's wellbeing, 5-14 years

Source: EICV 2013/14

Deprivation in housing dimension was measured in terms of access to improved lighting, means of garbage disposal and households affected by environmental destruction. A third (33.9%) of the children live in households which use an unimproved lighting source (oil lamp, firewood, candle or lantern); 38.6% of the children live in households where garbage disposal is unimproved (thrown in fields or bushes, dumped or burnt etc.); and 22.8% live in households that were affected by floods, landslides, destructive rains and other environmental hazards.

Health, water and housing have the highest deprivation rates. More than two thirds of the children (67.7%) are deprived in housing, 51.9% are deprived in water and 49.9% are deprived in health.

Where do the deprived children live?

When disaggregating the results by area of residence (urban versus rural), the differences in deprivation rates are statistically significant (Figure 32). The largest difference between urban and rural areas is in the health dimension followed by housing dimension: 53.0% of rural children are deprived in health compared to 30.0% in urban areas while 70.2% of rural children are deprived in housing compared to 53.4% children in urban areas.

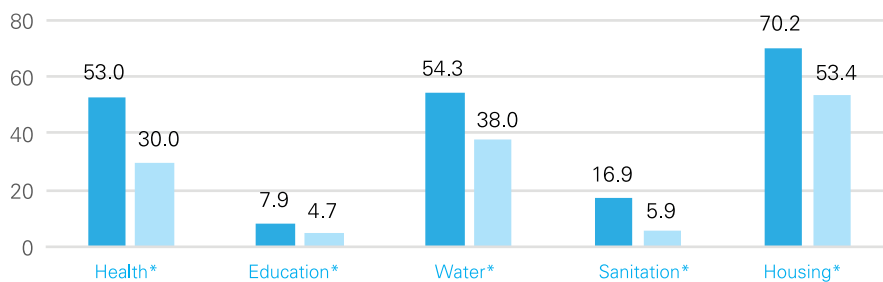


Figure 32: Deprivation rates (%) in each dimension of a child's wellbeing by area of residence, 5-14 years

Source: EICV 2013/14

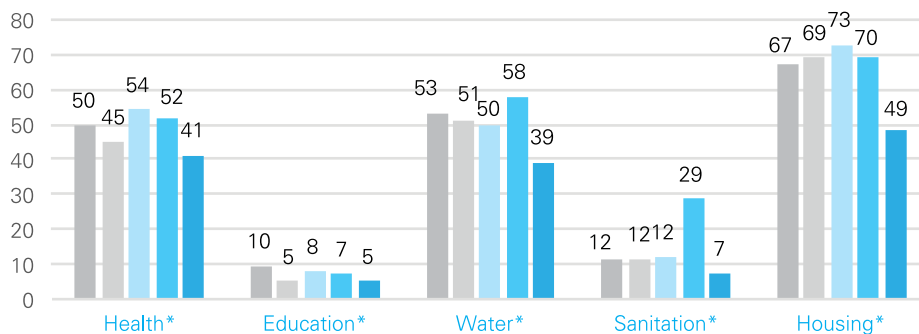
■ Rural ■ Urban

Southern and Western Provinces have the higher deprivation rates (Figure 33) in a number of dimensions. Western Province has the highest deprivation rates in health and housing (54% and 73%, respectively). Southern Province has the highest deprivation rates in water and sanitation (58% and 29%, respectively). The difference is especially notable for sanitation – more than twice as many children living in Southern Province are deprived compared to other provinces. Eastern Province has the highest deprivation rate in education, with 10% of children in this age group not attending school.

Figure 33: Deprivation rates (%) in each dimension of a child's wellbeing, 5-14 years

Source: EICV 2013/14

- Eastern Province ■
- Northern Province ■
- Western Province ■
- Southern Province ■
- Kigali City ■



Who are the deprived children aged 5-14?

There are no statistically significant differences in deprivation rates between girls and boys aged 5-14, except in education, where 8.6% of boys and 6.3% of girls are deprived (Figure 34).

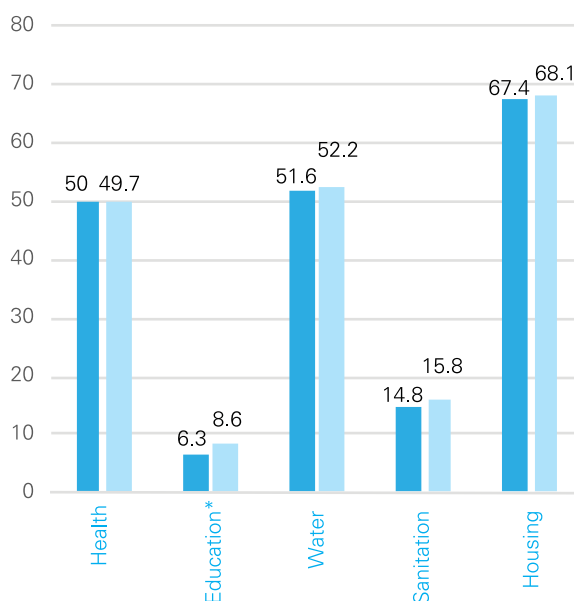
As with the younger age groups, the educational level of the household head (Figure 35) plays an important role in the deprivation rate – children in households where the head is educated are less likely to be deprived in any of the dimensions.

The highest disparities are observed for health. Children whose household head did not attain any kind of education have the highest deprivation rates in all five dimensions: over half of the children with a household head with no education are deprived in health and/or water (54.6% and 55.8% respectively), while housing shows the highest deprivation rate (71.0%).

Figure 34: Deprivation rates (%) in each dimension of a child's wellbeing by gender, 5-14 years

Source: EICV 2013/14

- Female ■
- Male ■



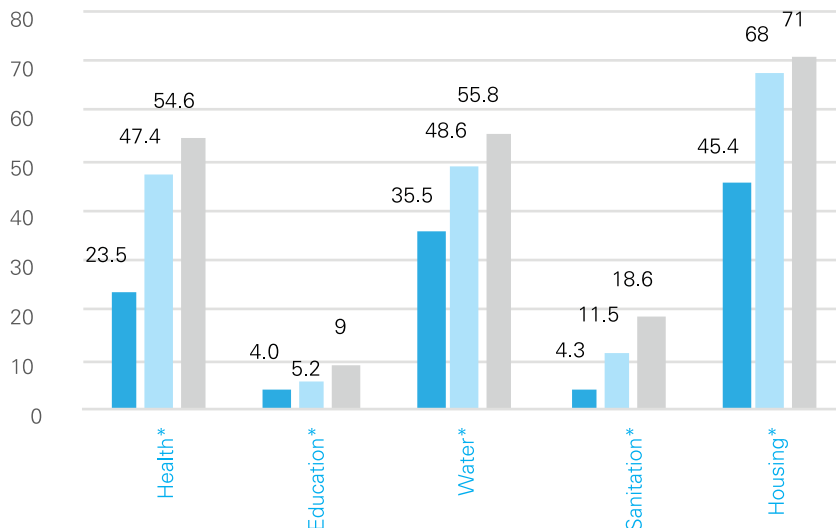


Figure 35: Deprivation rates (%) in each dimension of a child's wellbeing by education level of the household head, 5-14 years

Source: EICV 2013/14

- Secondary or higher education
- Primary education
- No education

(b) Multidimensional deprivation analysis

Distribution of deprivations

As shown in Figure 36, at national level, about 10.6% of children suffer from no deprivation. Most children aged 5-14 years are deprived in two dimensions (34.4%). A quarter of children are deprived in one dimension and 0.5% are deprived in all five dimensions.

Children in rural areas (Figure 37) are more likely to experience more deprivations than those living in urban areas: 30.7% of children in urban areas experience no deprivations compared to only 7.2% in rural areas. Twice as many children living in rural areas experience at least three deprivations as children living in urban areas (24.5% versus 12.3%).

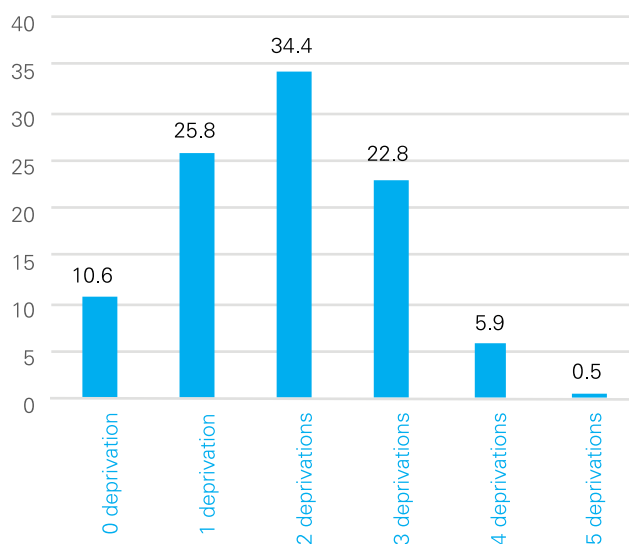


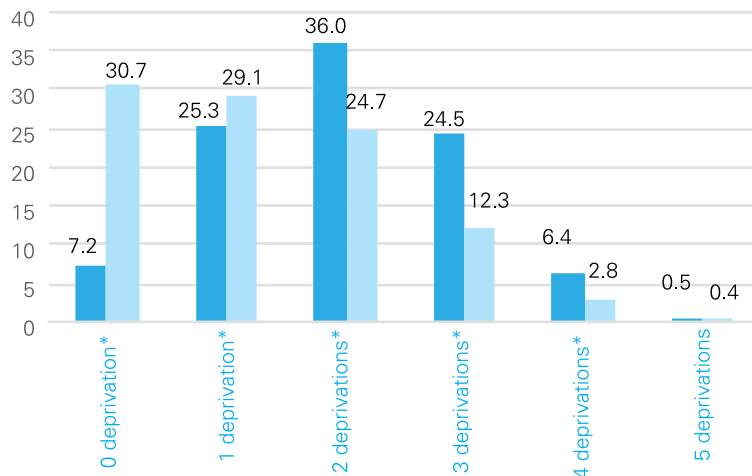
Figure 36: Deprivation distribution (%) at the national level, 5-14 years

Source: EICV 2013/14

Figure 37: Deprivation distribution (%) by area of residence, 5-14 years

Source: EICV 2013/14

■ Rural ■ Urban

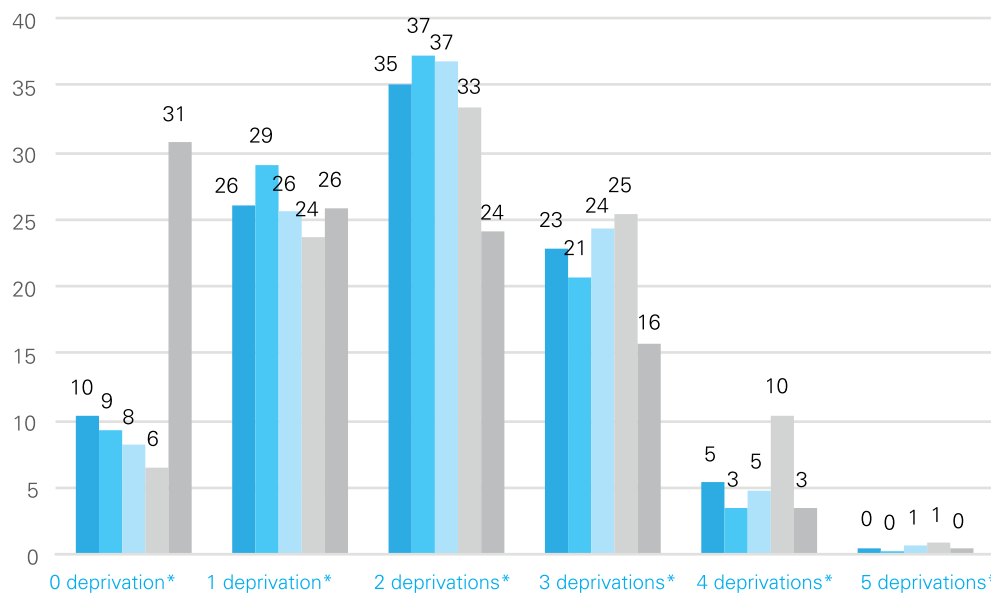


As shown in Figure 38, children in Kigali City have lower rates of deprivation, with 31% experiencing no deprivations. Deprivations in Southern Province are higher than in the other provinces, with 25% of children deprived in three dimensions and 10% deprived in four.

Figure 38: Deprivation distribution (%) by province, 5-14 years

Source: EICV 2013/14

■ Eastern Province
 ■ Northern Province
 ■ Western Province
 ■ Southern Province
 ■ Kigali City



Looking at the deprivation distribution by individual and household characteristics, there is no clear-cut gender difference for children aged 5-14 (Figure 39). Children in smaller households (1-3 members) are slightly more likely to be deprived in two or more dimensions than children living in larger households (Figure 40). And children whose household head had no education level are the most deprived (26.5 % of them experience three deprivations). By comparison, a third of (33.8%) children in households where the household head obtained secondary or higher education have no deprivations at all (Figure 41).

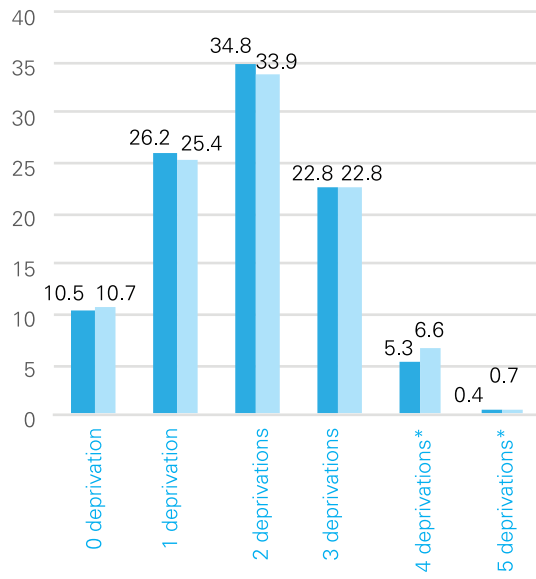


Figure 39: Deprivation distribution (%) by gender of the child, 5-14 years

Source: EICV 2013/14

■ Female ■ Male

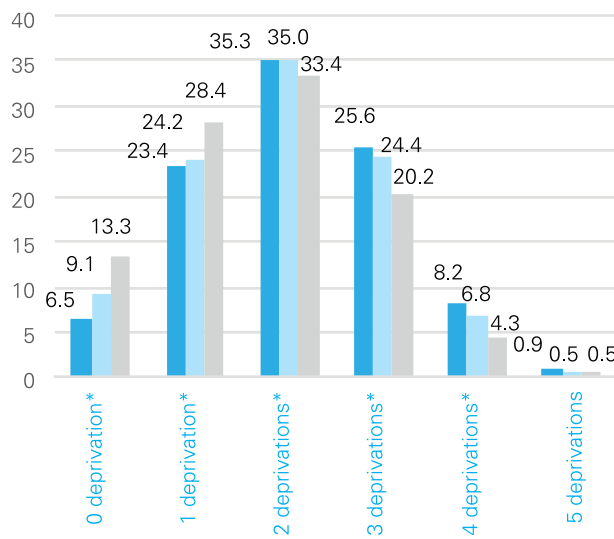


Figure 40: Deprivation distribution (%) by household size, 5-14 years

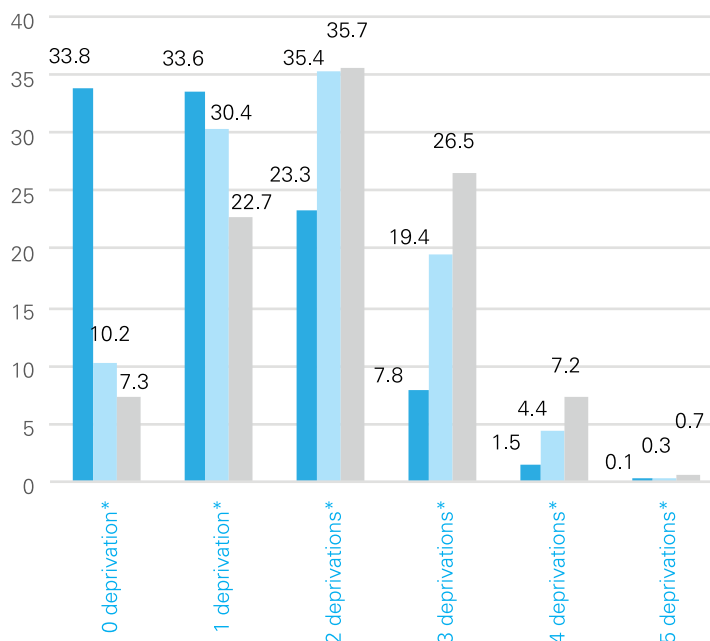
Source: EICV 2013/14

■ 1-3 members
 ■ 4-6 members
 ■ More than 6 members

Figure 41: Deprivation distribution (%) by education level of the household head, 5-14 years

Source: EICV 2013/14

Secondary or higher education
 Primary education
 No education

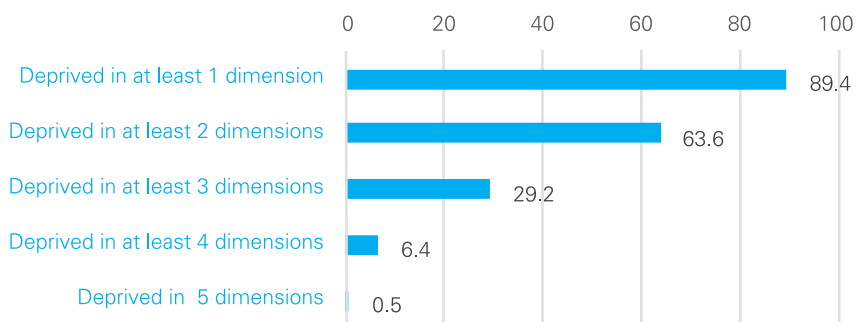


Multidimensional deprivation headcount (H)

Figure 42 shows the multidimensional deprivation headcount (H) for children aged 5-14. At the national level, 89.4% of children are deprived in at least one dimension. In terms of multidimensional poverty, 29.2% of the children in this age group are multidimensionally poor, meaning they face at least three deprivations. When it comes to area of residence of multidimensionally poor children (Figure 44), 31.5% of children in rural areas are multidimensionally poor in comparison to 15.5% in urban areas. As was the trend in younger age groups, children in Kigali city are least multidimensionally poor, at 19.5%, and children in Southern Province are most affected by multidimensional poverty, at 36.6% (Figure 44).

Figure 42: Multidimensional deprivation headcount (%) of deprivations at the national level, 5-14 years

Source: EICV 2013/14



Average intensity of deprivation among multidimensionally poor children (A)

Multi-dimensionally poor children aged 5-14 years old face on average 3.2 out of a total of five deprivations. It is important to note that the average intensity of deprivation does not vary significantly between rural and urban areas, and ranges from 3.2 in Kigali City to 3.3 in Southern Province.

Multidimensional child poverty index (M0)

The multidimensional child poverty index of rural areas (Figure 43) is twice that of urban areas (0.19 and 0.1 respectively). As expected, it is lowest in Kigali City (0.13) and grows to 0.24 in the Southern Province (Figure 44).

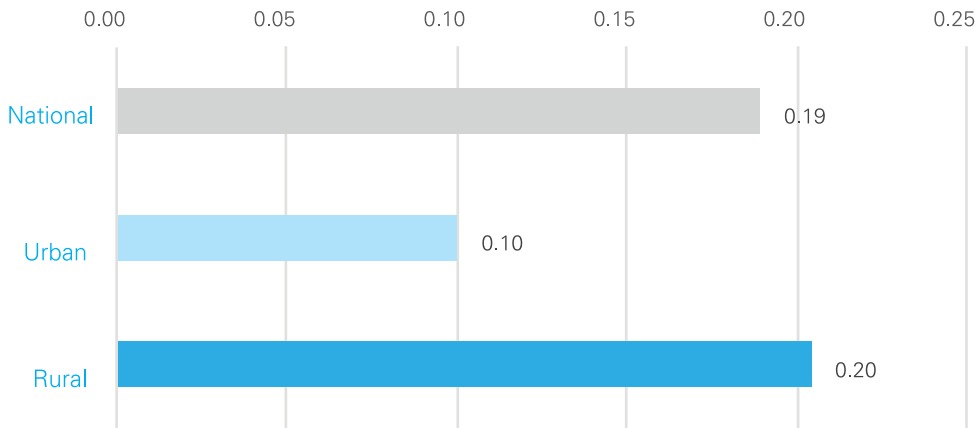


Figure 43: Multidimensional child poverty index at the national level and by area of residence, 5-14 years

Source: EICV 2013/14

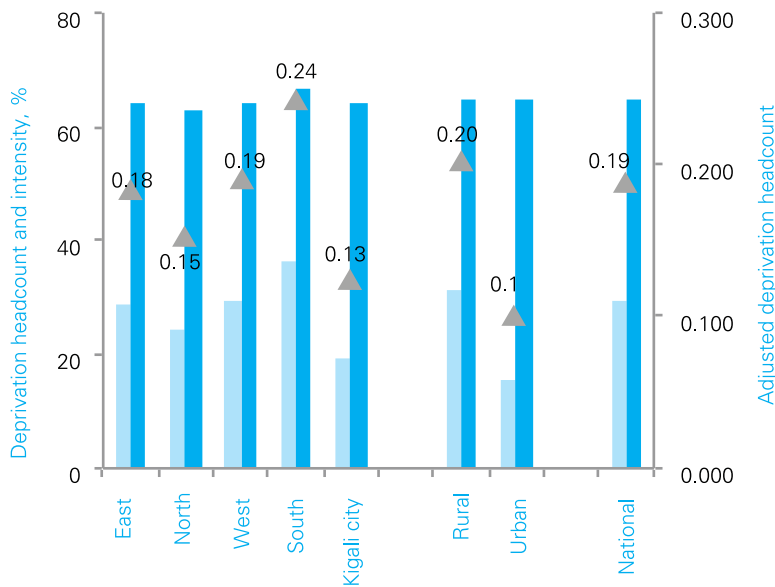


Figure 44: Indices at the national level and by area and province of residence of residence, children aged 5-14 years who are deprived in at least 3 dimensions

Source: EICV 2013/14

- Multidimensional deprivation headcount (H), %
- Average intensity among the deprived (A); %
- ▲ Multidimensional Child Poverty Index (M0)

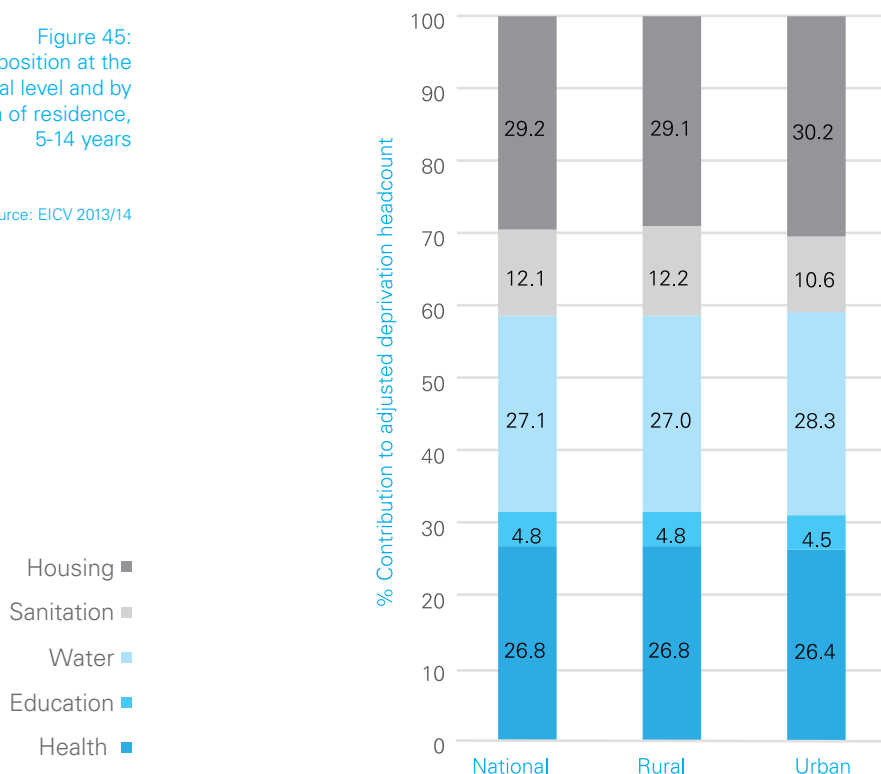
How does each dimension contribute to deprivation level?

Housing is the largest contributor to the multidimensional child poverty index nationally (29.2%) and in both rural (29.1%) and urban (30.2%) areas, followed by water and health. Education contributes the least to the index (less than 5%).

There is almost no difference in the relative contributions of the five dimensions between national, rural and urban figures (Figure 45).

Figure 45: Decomposition at the national level and by area of residence, 5-14 years

Source: EICV 2013/14



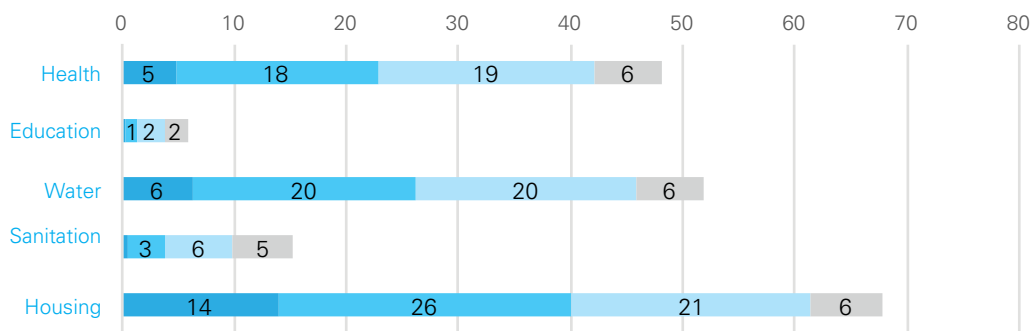
Deprivation overlap analysis

As observed with the younger age groups, most of the children aged 5-14 experience several deprivations simultaneously. Figure 46 shows that only a very small percentage of children are deprived in only one dimension. A relatively higher proportion of children (14%) are deprived in only housing than in any other single dimension.

Figure 46: Deprivation overlap (%) by dimension, 5-14 years

Source: EICV 2013/14

- Deprived in only specified dimension
- Deprived in 1 other dimension
- Deprived in 2 other dimensions
- Deprived in 3 other dimensions



One fifth of children (20.4%) aged 5-14 are simultaneously deprived in health, water and housing (Figure 47). Of the 52% of children deprived in water, just 7.2% experience deprivation in the water dimension only – the other 44.8% of children are also deprived in health and/or housing. Only 11.5% of children this age group do not face deprivation in any dimension.

When the overlap analysis is further disaggregated by area, overlapping deprivations in health, water and housing are more concentrated in rural areas. For instance, there is a 21.9% overlap between the three dimensions in rural areas, compared to only 11.6% in urban areas. More children in urban areas are deprived in housing only (19.3%) than are children in rural areas (16.1%), which suggests that health and water may be less related to housing in urban settings than rural ones.

National

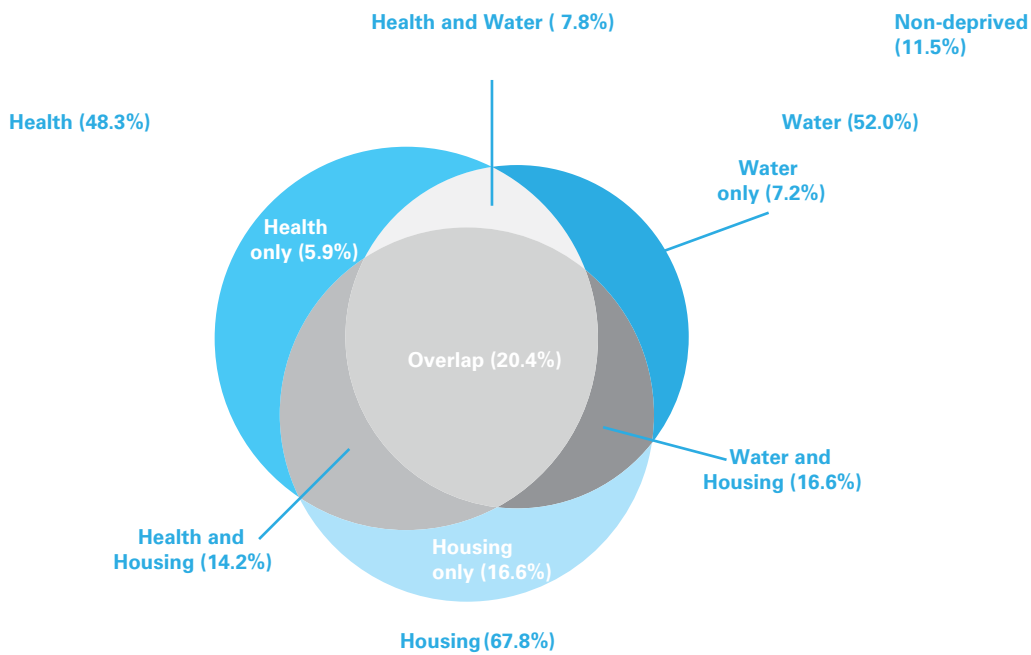
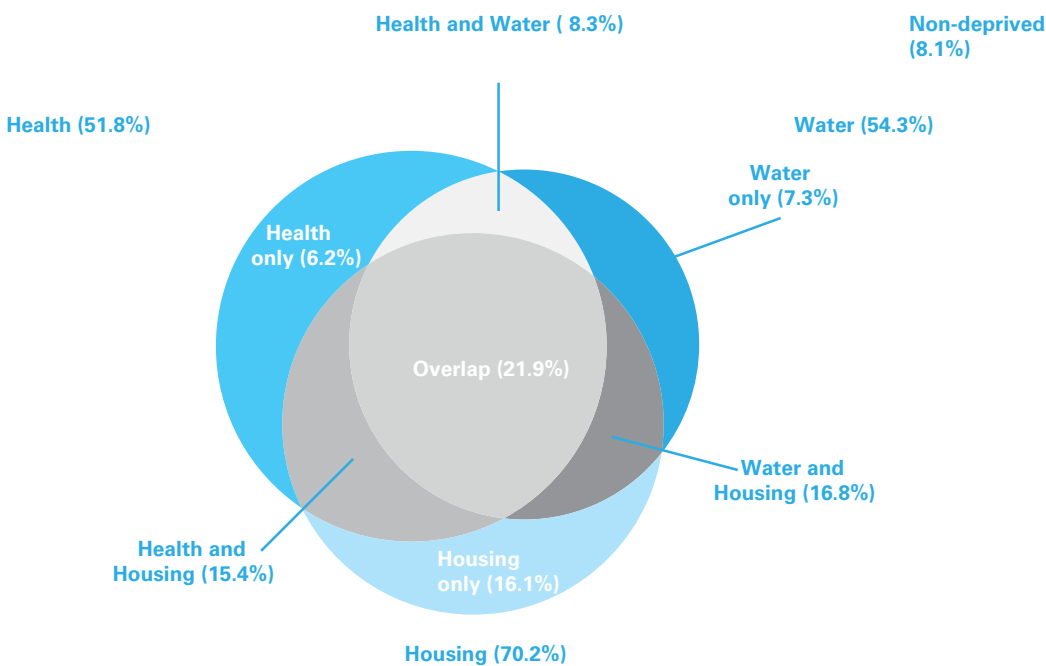


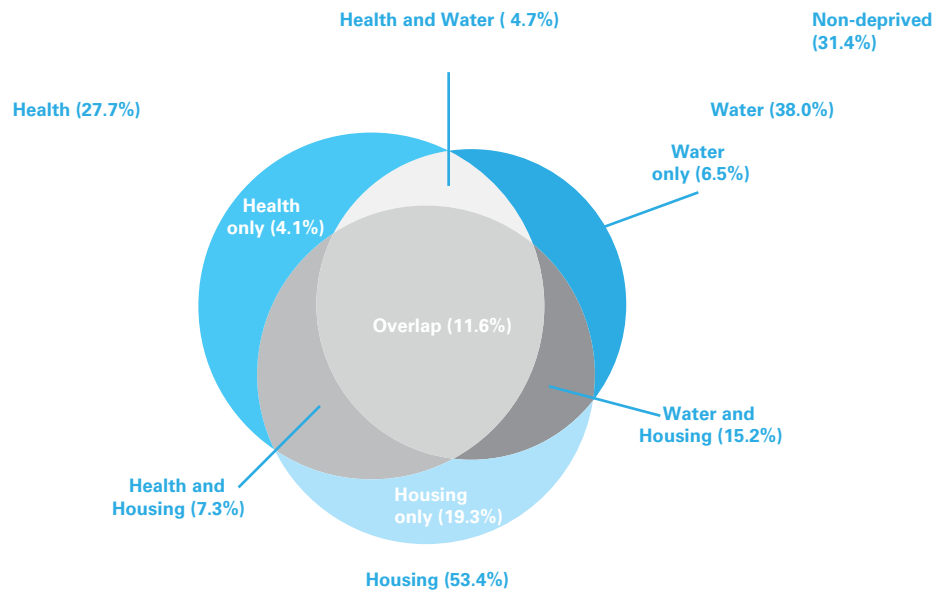
Figure 47: Overlap between health, water and housing at the national level and by area of residence, 5-14 years

Source: EICV 2013/14

Rural



Urban



2.4 Children aged 15-17 years

Key results for children aged 15-17 years

- 44.2% of the children aged 15-17 years are multidimensionally poor - they face at least three out of five deprivations.
- These children face, on average, 3.5 out of 5 deprivations.
- Many children are deprived in the dimensions of education (57.9%) and housing (62.6%)
- There is a higher proportion of multidimensionally poor children in rural areas (49.6%) than in urban areas (21.5%). More than half (51.7%) of children living in Southern Province are multidimensionally poor.
- Housing contributes the most to overall deprivation in urban areas (27.3%). In rural areas, housing and education contribute the most (24.5% and 24.3%, respectively).

(a) 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 wellbeing are shown in Figure 48.

Under the **health** dimension, 31.0% of children in this age group do not have health insurance and 25.6% are deprived in the indicator distance to health centre (i.e. living in a household where the time needed to get to the health centre is more than one hour on foot).

Under the **education** dimension, school attendance is a major challenge for children aged 15-17, with 27% of them not attending school in 2014, 57.8% did not successfully complete primary education and 14.6% do not meet literacy and numeracy standards.

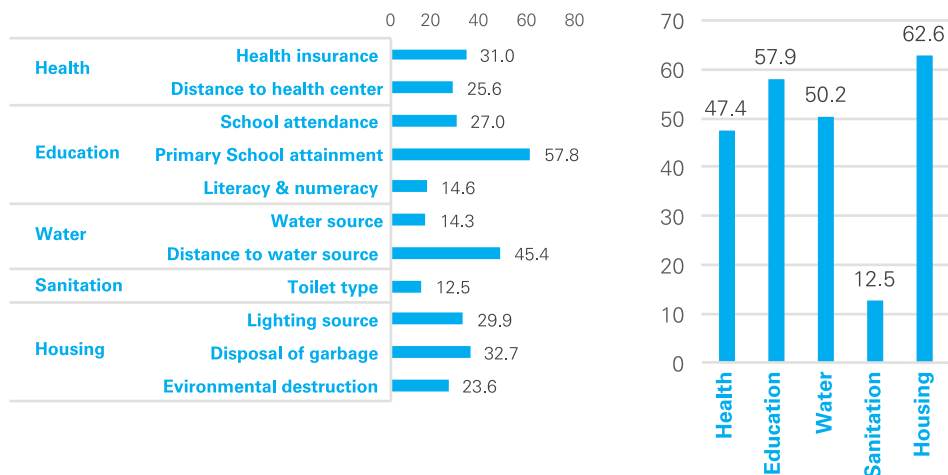
Under the **water** dimension, 14.3% of children of this age group do not have access to an improved water source and 45.4% of children are deprived in the indicator distance to water source (i.e. the nearest water source is more than 200m away from their households in urban areas and more than 500m in rural areas).

The **sanitation** dimension (measured in terms of access to improved toilet facility) gives a deprivation rate of 12.5%.

Housing is the dimension with the highest deprivation headcount rate (62.6%). Under this dimension, almost one third of children (29.9%) use unimproved lighting source, 32.7% live in households where garbage disposal is unimproved and 23.6% live in households that were affected by floods, landslides, destructive rains and other environmental hazards.

Figure 48: Deprivation rates (%) in each indicator and dimension of a child's wellbeing, 15-17 years

Source: EICV 2013/14

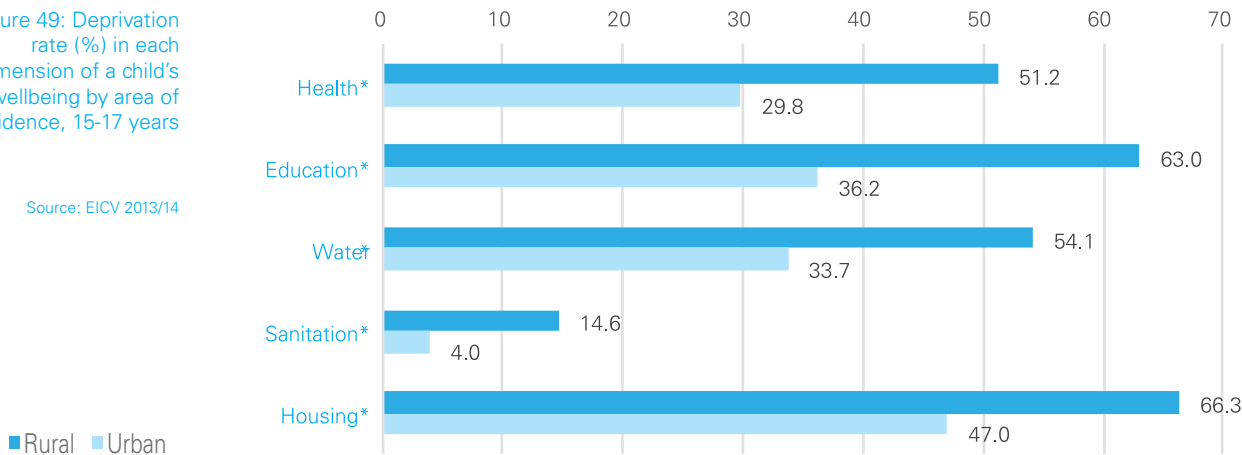


Where do the deprived children live?

Similar to previous age groups, 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 49). Education shows a significant difference of 26.8 percentage points; 63.0% of rural children are deprived compared to only 36.2% of urban children. Southern Province has the highest deprivation rates in health, water and sanitation (51%, 57% and 25%, respectively). Housing issues are most common in Western Province while Eastern Province has the highest deprivation rates for education (Figure 50).

Figure 49: Deprivation rate (%) in each dimension of a child's wellbeing by area of residence, 15-17 years

Source: EICV 2013/14



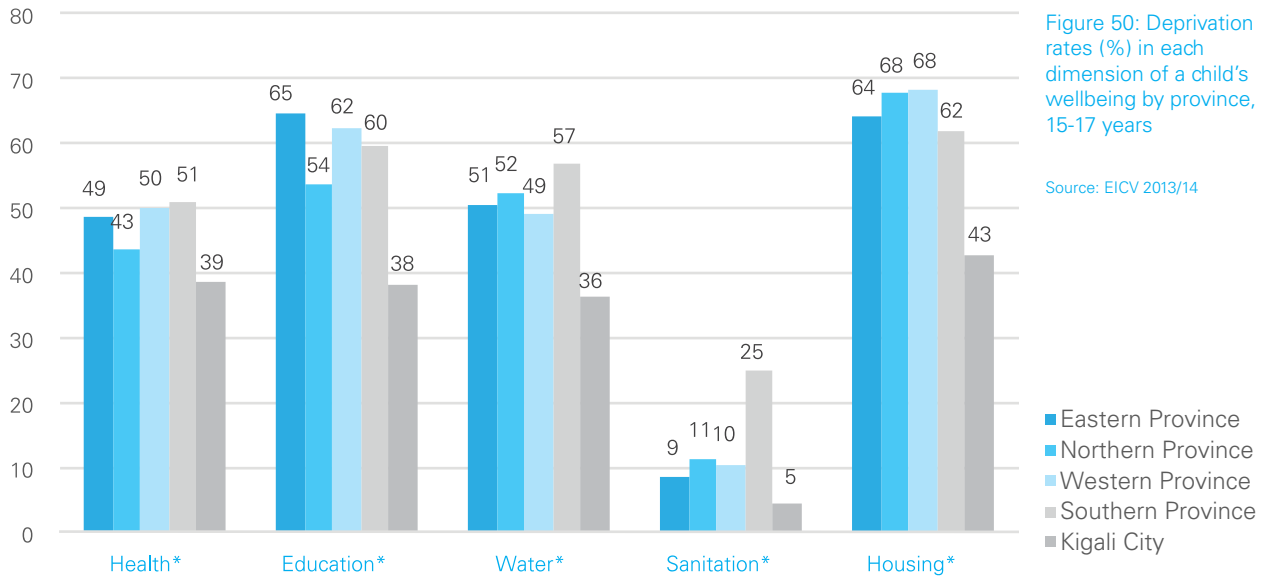


Figure 50: Deprivation rates (%) in each dimension of a child's wellbeing by province, 15-17 years

Source: EICV 2013/14

Who are the deprived children?

Figure 51 shows that children living in larger households are less likely to be deprived in all dimensions. Generally, households have to invest in housing, water and sanitation, regardless of the household size. Therefore, small households may pay more per person to have the same living conditions.

There are no significant gender differences for this age group, except for education where boys are more deprived than girls (63.5% compare to 52.2% - Figure 52).

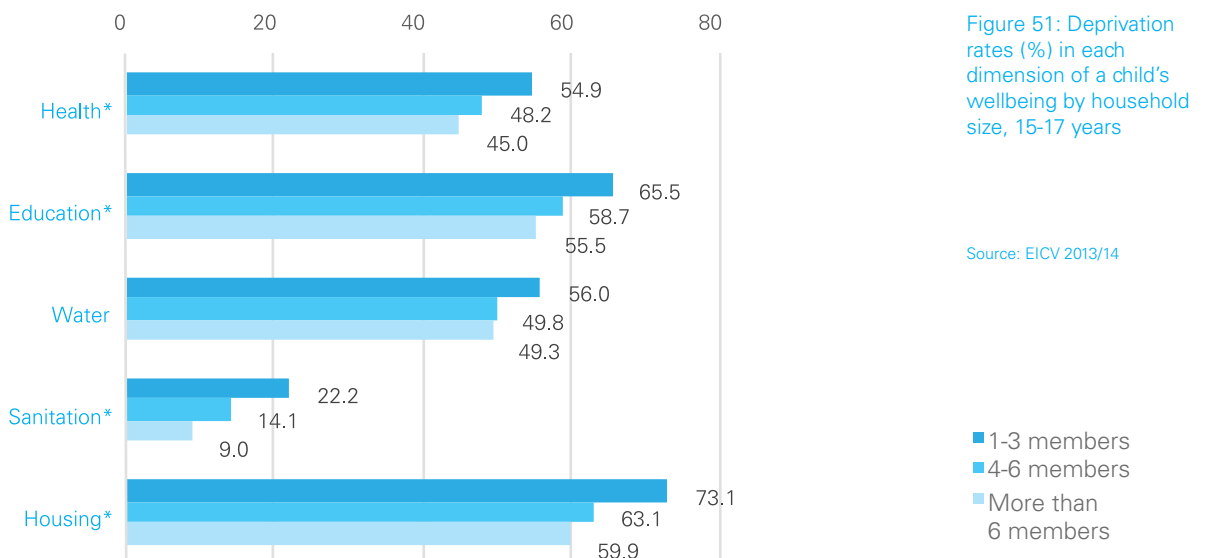


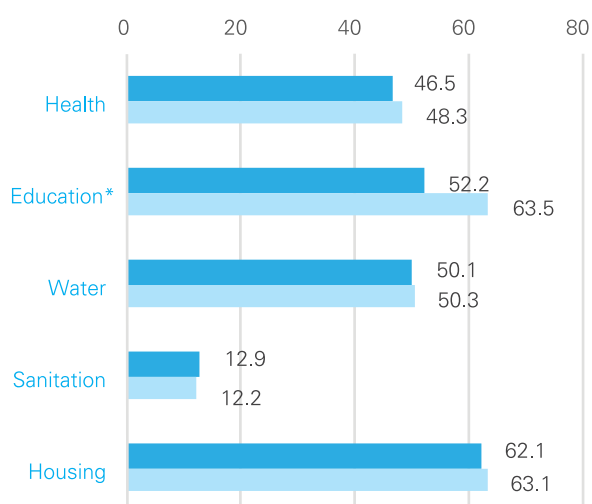
Figure 51: Deprivation rates (%) in each dimension of a child's wellbeing by household size, 15-17 years

Source: EICV 2013/14

Figure 52: Deprivation rates (%) in each dimension of a child's wellbeing by gender of the child, 15-17 years

Source: EICV 2013/14

■ Female ■ Male

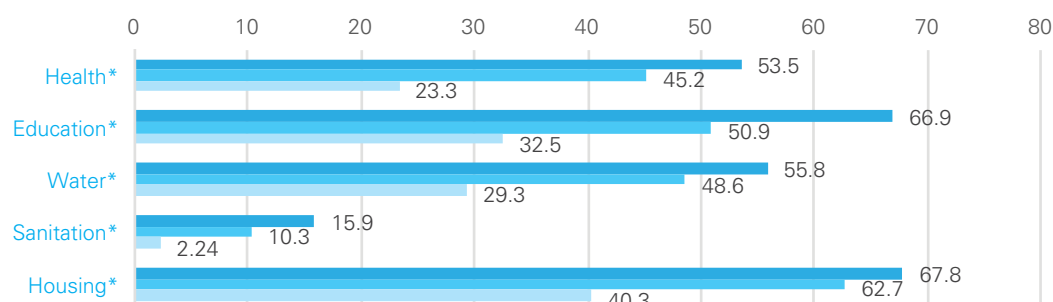


The education level of the household head has an important influence on the deprivation experienced by children. Children living in households where the head has no education have higher deprivation rates in all dimensions (Figure 53). The largest distinction can be observed in the dimension of education: twice as many children with an uneducated household head are deprived compared to children with a household head who completed secondary or higher education (66.9% and 32.5%, respectively).

Figure 53: Deprivation rates (%) in each dimension of child's wellbeing by education level of the household head, 15-17 years

Source: EICV 2013/14

■ No education
■ Primary education
■ Secondary or higher education



(b) Multidimensional deprivation analysis

Distribution of deprivations

Figure 54 shows the distribution of deprivations for children aged 15-17 years. Just 8.6% of the children suffer from no deprivation, and the difference between rural and urban children with no deprivations (Figure 55) is significant (4 % for rural and 28.3 % for urban). Children living in rural areas are more likely to be deprived in at least two dimensions. The majority of children nationally experience two deprivations (28.3%) and 2.7 % are deprived in all five dimensions.

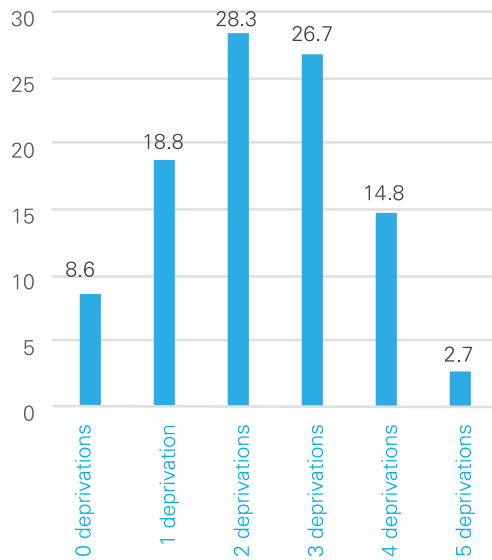


Figure 54: Deprivation distribution (%) at the national level, 15-17 years

Source: EICV 2013/14

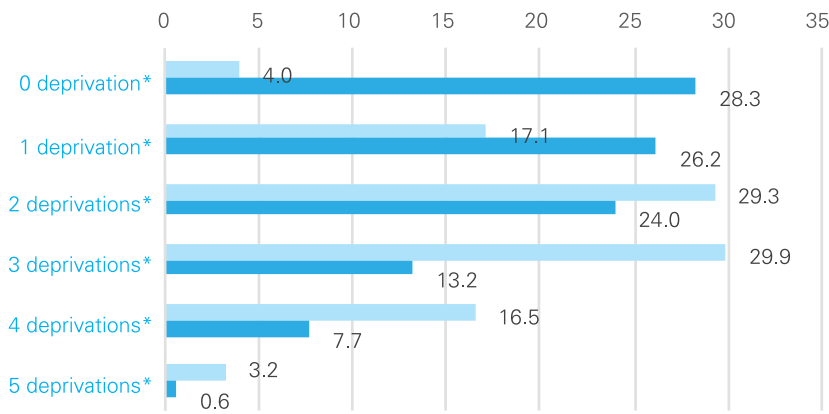


Figure 55: Deprivation distribution (%) by area of residence, 15-17 years

Source: EICV 2013/14

■ Rural ■ Urban

Over a quarter (27%) of the children in Kigali City suffer no deprivation at all. The contrast with other provinces is significant, as only 6% of the children in Eastern, Northern, Western and Southern Provinces experience no deprivations. Southern Province is lagging behind with more than half of the children (51%) facing at least three deprivations (Figure 56).

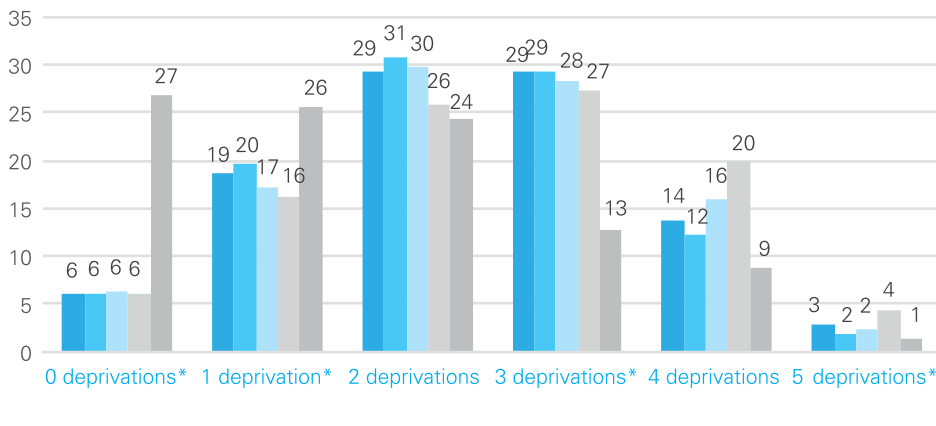


Figure 56: Deprivation distribution (%) by province, 15-17 years

Source: EICV 2013/14

■ Eastern Province
 ■ Northern Province
 ■ Western Province
 ■ Southern Province
 ■ Kigali City

Children living in a household with three or fewer members are significantly more likely to experience several deprivations than children in larger households (Figure 57). The differences are not statistically significant between girls and boys (Figure 58). Most children, regardless of their sex, face at least two deprivations.

Figure 57: Deprivation distribution (%) by household size, 15-17 years

Source: EICV 2013/14

1-3 members
4-6 members
More than 6 members

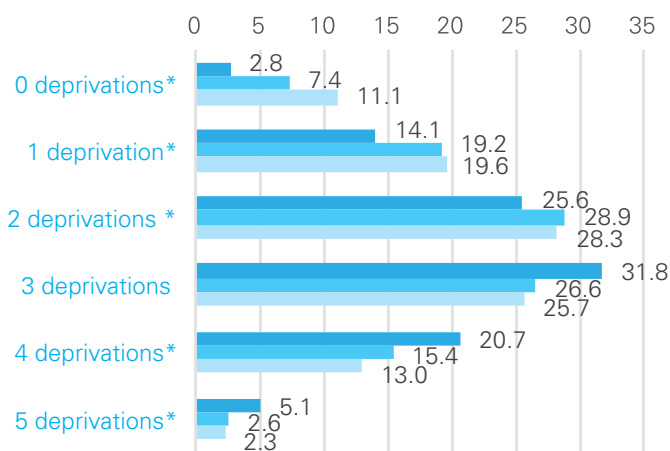
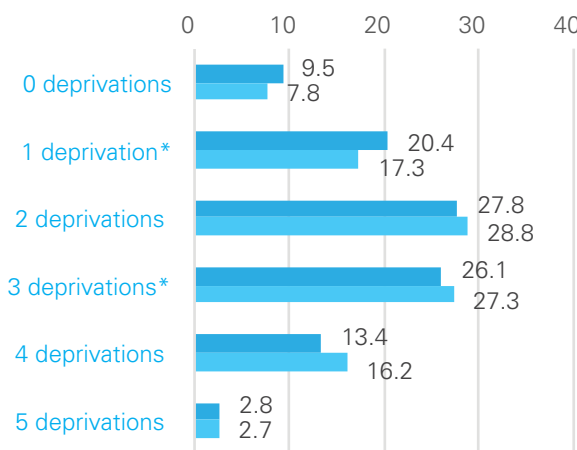


Figure 58: Deprivation distribution (%) by sex of the child, 15-17 years

Source: EICV 2013/14

Female Male

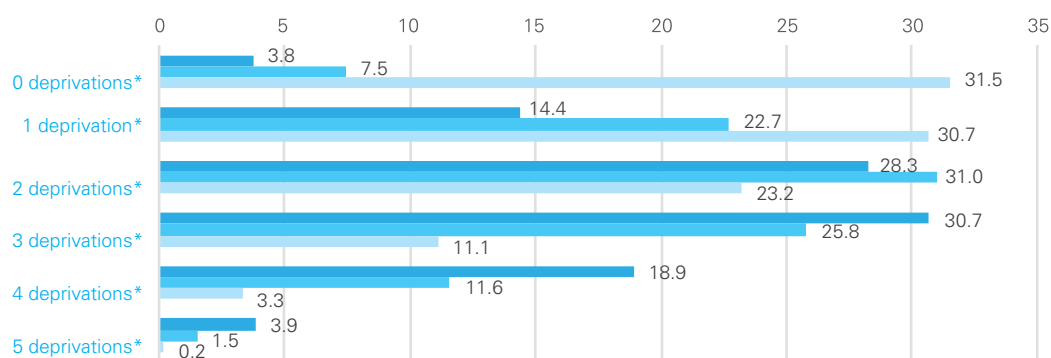


Almost two thirds of the children aged 15-17 whose household head has secondary or higher education experience no deprivations or only 1 deprivation (31.5% and 30.7% respectively). Children with an uneducated household head are significantly more likely to face at least three deprivations (30.7% compared to 11.1%). More than 20% of children with a household head who did not attain any education are deprived in four or five dimensions (Figure 59).

Figure 59: Deprivation distribution (%) by education level of the household head, 15-17 years

Source: EICV 2013/14

No education
Primary education
Secondary or higher education



Multidimensional deprivation headcount (H)

At national level, nine out of 10 children (91.4%) aged 15-17 (Figure 60) are deprived in at least one dimension and 44.2% of the children in this age group are multidimensionally poor (facing deprivations in three dimensions). Nearly 3% of children are deprived in all five dimensions. Rural areas and Southern Province (Figure 62) have the highest deprivation rates with rates of 49.6% and 51.7% of children deprived in at least three dimensions. Slightly lower percentages (46.7% and 45.9%, respectively) of children living in Western and Eastern provinces face three or more deprivations.

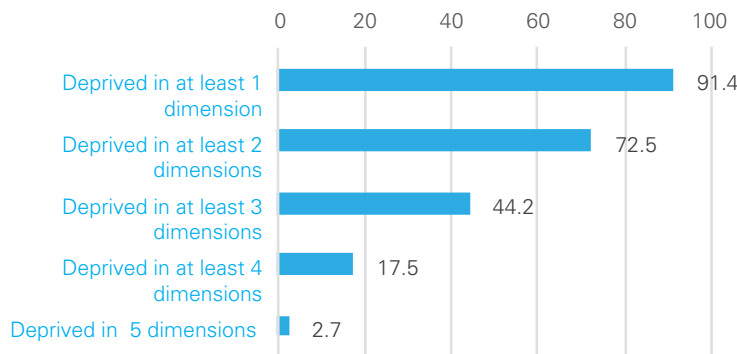


Figure 60: Multidimensional deprivation (%) headcount at national level, 15-17 years

Source: EICV 2013/14

Average intensity of deprivation amongst the multi-dimensionally poor children (A)

Multidimensionally poor children experience on average 3.5 out of 5 deprivations. When it comes to geographic distribution, there are no significant differences between children in urban and rural settings (the average intensity of deprivation is 3.5 and 3.4, respectively).

Multidimensional child poverty index (M0)

In this age group, children living in urban areas (at 0.15) are much less deprived (have a lower multidimensional poverty index) than their rural peers (at 0.34), as shown in Figure 61.

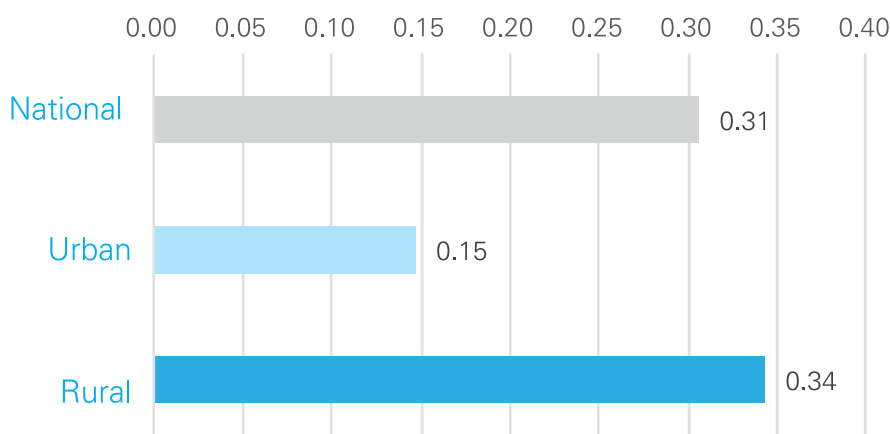


Figure 61: Multidimensional child poverty index at the national level and by area of residence, 15-17 years

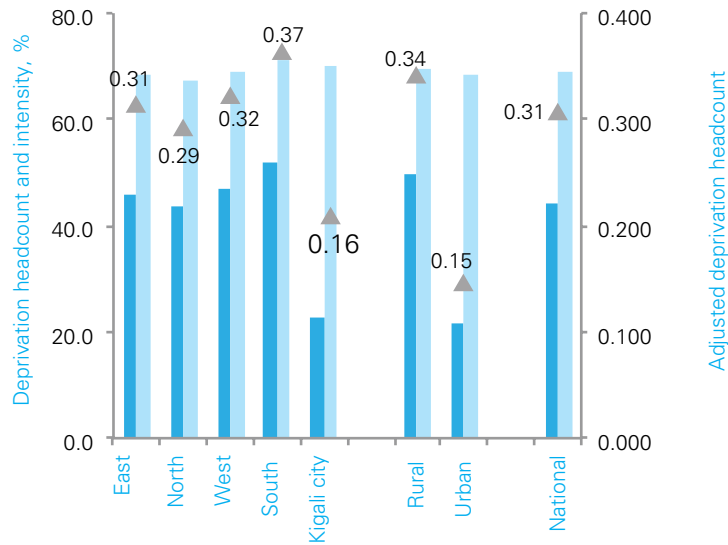
Source: EICV 2013/14

The average intensity among the deprived children does not vary much across areas and provinces. The multidimensional child poverty index (M0) is lowest in Kigali City (0.16) (Figure 62).

Figure 62: Indices at the national level and by area of residence and province, children aged 15-17 years who are deprived in at least 3 dimensions

Source: EICV 2013/14

- Multidimensional deprivation headcount (H), %
- Average intensity among the deprived (A), %
- Multidimensional Child Poverty Index (M0)



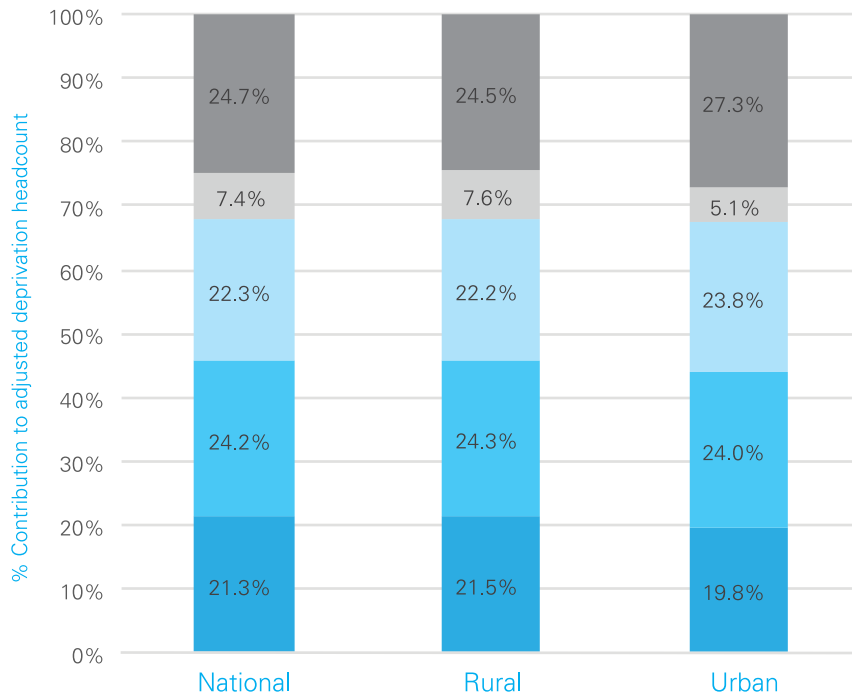
How does it each dimension contribute to deprivation level?

The contribution of each dimension to the overall multidimensional deprivation index is more or less the same nationally and in urban and rural area (Figure 63). Housing has the highest impact (between 24.5% and 27.3%). Education is the second biggest contributor to the deprivation index (by around 24%). Sanitation contributes more in rural areas than in urban areas (7.6% compared to 5.1%), but is the smallest overall contributor to the deprivation index.

Figure 63: Decomposition of the multidimensional child poverty index at the national level and by area of residence, 15-17 years

Source: EICV 2013/14

- Housing
- Sanitation
- Water
- Education
- Health



Deprivation overlap analysis

As observed with the younger age groups, only a small proportion of children experience deprivation in only one dimension – most children suffer several deprivations. Around 15-17% of children who are deprived in health, education, water and/or housing face deprivations in at least three other dimensions. Education and housing appear to be the dimensions within which there are most significant overlaps, followed by water and health (Figure 64).

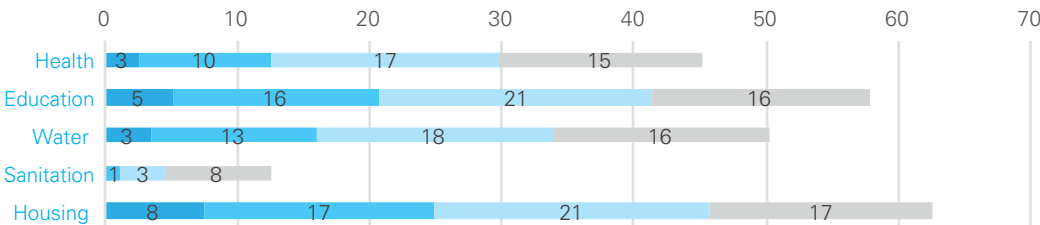


Figure 64: Deprivation overlap (%) by dimension, 15-17 years

Source: EICV 2013/14

- Only deprived in the given dimension
- Deprived in 1 other dimension
- Deprived in 2 other dimensions
- Deprived in 3 or more other dimensions

The Venn diagrams below illustrate which deprivations occur together. Education, water and housing tend to coincide, and again we find that overlapping dimensions are more concentrated in rural than urban areas. Nationally, there is a 21.5% overlap between all three dimensions (Figure 65), while 11.6% of children are not deprived in any of the three. Very few children are deprived in just one dimension (education 9.7%, water 6.1% and housing 11.9%).

The overlap between deprivations in education, water and housing is much greater in rural than urban areas (23.7% versus 12.3%). Moreover, the incidence of children deprived in education and housing is much lower in urban areas, while deprivation in housing is much higher in rural areas. In rural areas 18.6% of children are deprived in both education and housing, compared to less than 9% in urban areas.

National

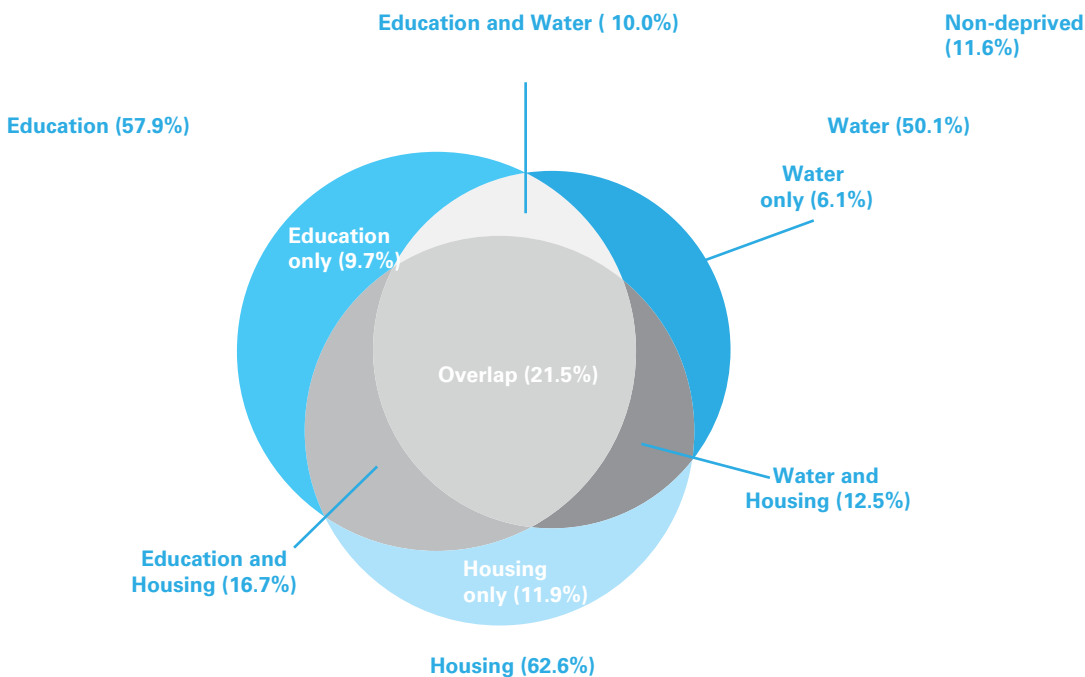
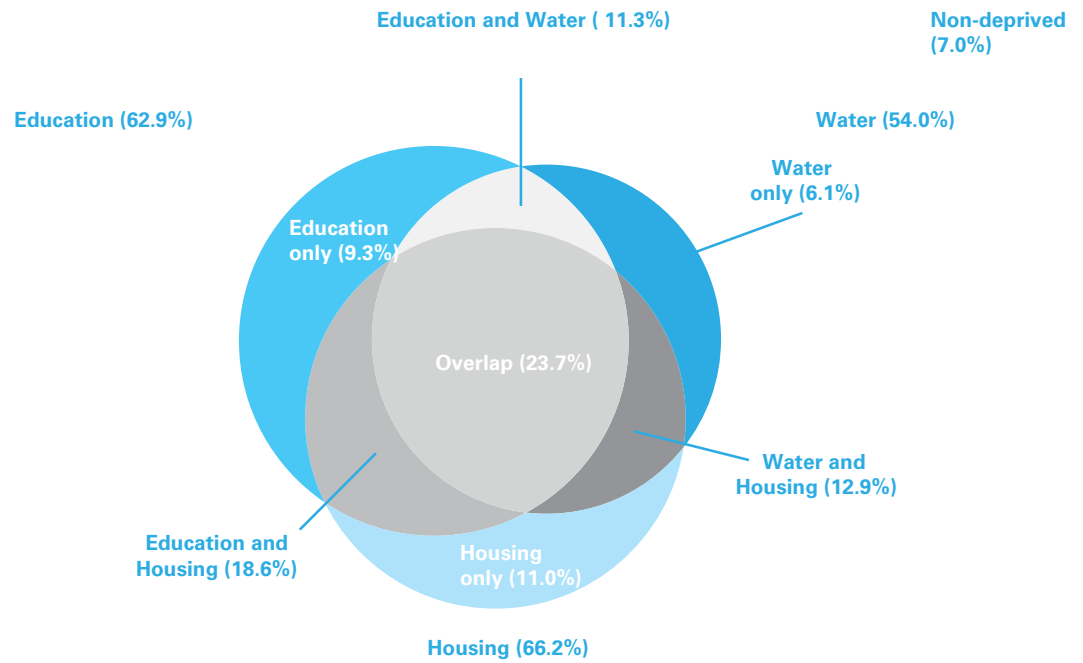


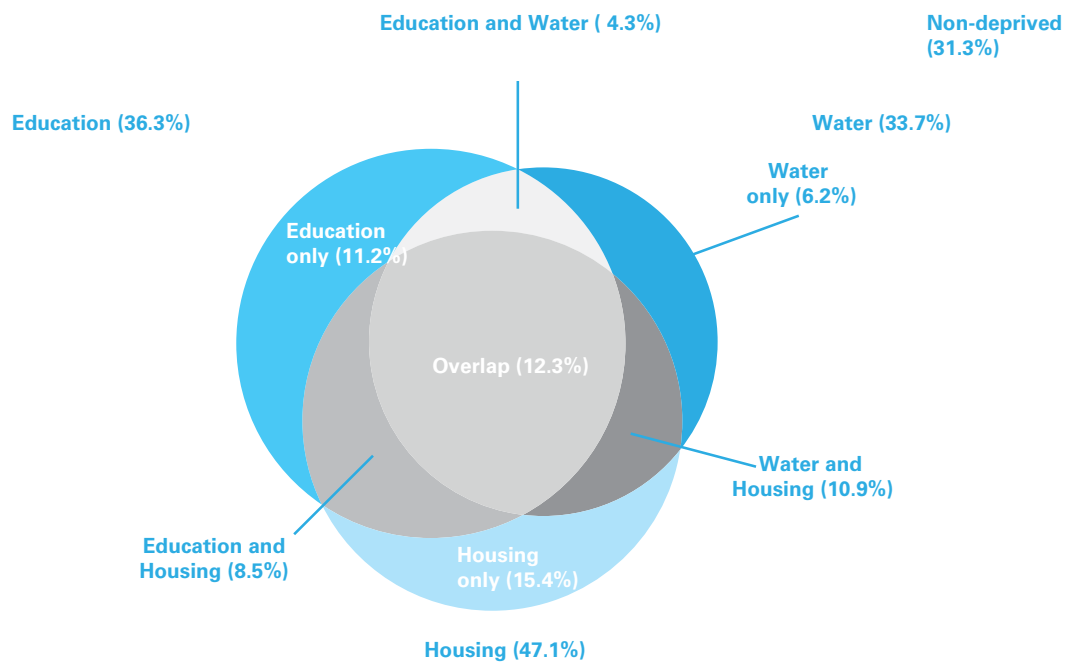
Figure 65: Venn diagram on the deprivation overlap between education, water and housing at the national level and by area of residence, 15-17 years

Source: EICV 2013/14

Rural



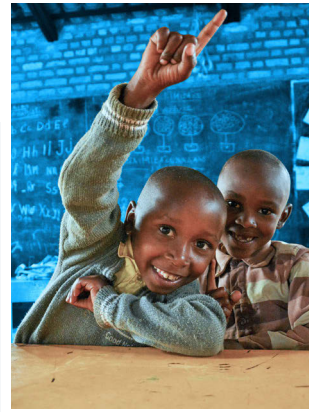
Urban



CHAPTER 3: TREND ANALYSIS OF CHILD POVERTY

Key results – Trend analysis

- The deprivation rates in almost all indicators and dimensions show a decrease between 2010 and 2014/2015, the most significant decrease being in the health dimension, particularly among children aged 24-59 months.
- The multidimensional poverty deprivation headcount highlights that 51% of children aged 0-23 months were multidimensionally poor in 2014/2015, compared to 60% in 2010.
- In 2010, only 1% of children aged 24-59 months did not face any deprivation at all, while in 2015, 11% of the children were not deprived in any dimension.
- The deprivation overlap between nutrition, health and water has decreased: 24% of children aged 0-23 months were deprived in all three dimensions in 2010, while 18% of the children were deprived in these dimensions in 2015.
- However, the proportion of extremely multidimensionally poor children (deprived in all five dimensions) has remained stagnant at just under 6%.
- The average intensity (the number of deprivation a child experiences as a percentage of all possible deprivations) of deprivations did not change between 2010 and 2014/15, implying that children remain equally vulnerable in 2015 as in 2010.
- For children aged 5-14, fewer children experienced multidimensional poverty in 2014/2015 than 2011 (a reduction from 39.2% to 29.2%) - the largest improvement being witnessed in the dimension of housing (in particular improvement in lighting).



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This section highlights the trends in multidimensional child poverty between 2010 and 2015. To track the evolution of multidimensional child poverty over time, the DHS of 2010 and 2014/15 was used for under-5 children and the EICV 2010/11 and 2013/14 for children aged 5-17 years. Following the pattern of the previous chapter, the trend analysis is done by age group: 0-23 months, 24-59 months, 5-14 years and 15-17 years. For each age group, the analysis is done in two parts (a) single sector analysis and (b) multidimensional deprivation analysis.

The 2010 DHS did not capture all the indicators available in the DHS 2014/15, so the indicators used for calculating the trend analysis in child poverty from 2010 to

2015 are slightly different from those used to measure Target 1.2 of SDG 1. To enable comparisons in child poverty to be made, the following indicators were omitted for children aged 0-4 years (because they were not available in the DHS 2010):

- availability of books/toys (in the early childhood education dimension);
- adult-child interaction (in the child development dimension); and
- adult care (in the child protection dimension).

3.1 Trends in poverty reduction – children aged 0-23 months

(a) Single sector analysis

This section covers multidimensional child poverty (deprivations) trend analysis (between 2010 and 2014/15) for children aged 0-23 months, in the dimensions of housing, sanitation, water, health and nutrition. As shown in Figures 66 and 67, deprivation levels in almost all indicators and dimensions of wellbeing decreased between 2010 and 2015.

- The dimensions of health and water improved for children aged 0-23 months, with nearly 8% fewer children deprived in these dimensions. This has been driven mainly by improvements in the indicators birth attendance (measured by the presence of skilled birth attendants during child delivery) and vaccination. In 2010, almost a fifth of the children did not receive the basic vaccinations, while in 2014/15 fewer than 5% were not immunized.
- For nutrition, sanitation and housing, the decrease is less pronounced.

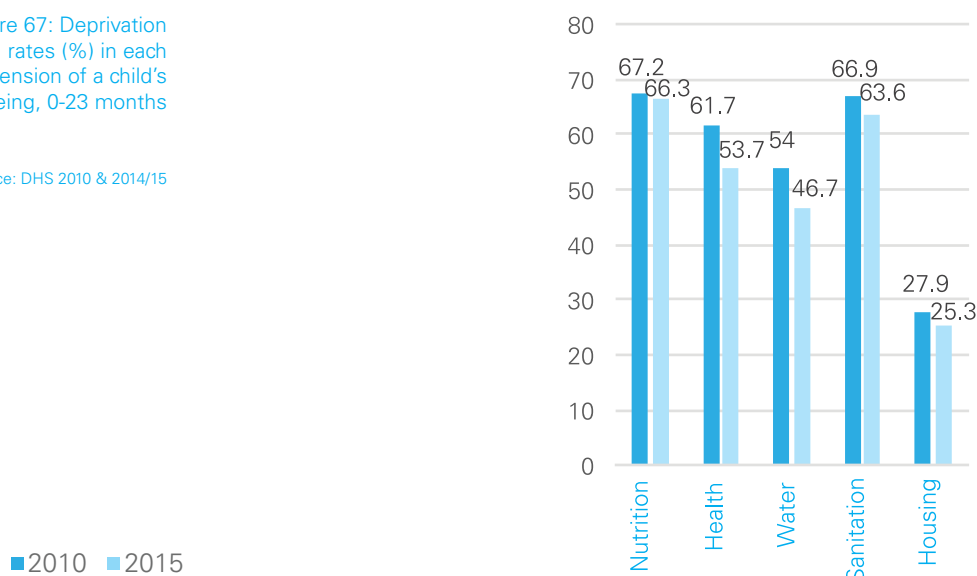
Figure 66: Deprivation rates (%) in each indicator of a child's well-being, 0-23 months

Source: DHS 2010 & 2014/15



Figure 67: Deprivation rates (%) in each dimension of a child's well-being, 0-23 months

Source: DHS 2010 & 2014/15



(b) Multidimensional deprivation analysis

Distribution of deprivations

As can be observed in Figure 68, over the years more children are deprived in fewer dimensions (more children faced zero, one or two simultaneous deprivations, while fewer children suffered from three or four deprivations in 2015). However, the proportion of children deprived in all five dimensions remained stagnant at just under 6%.

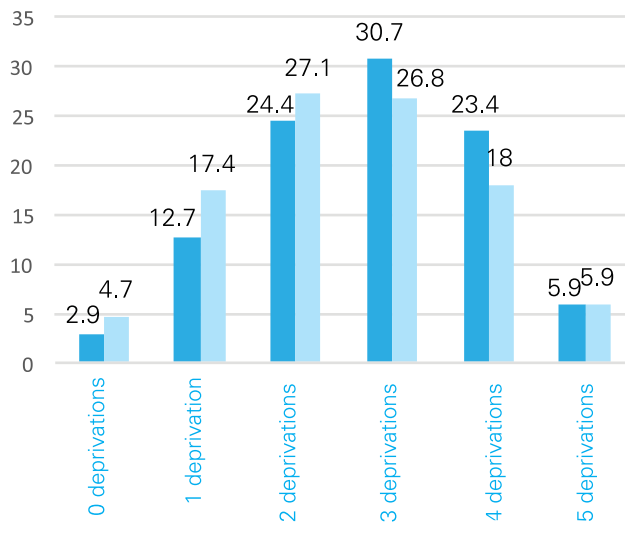


Figure 68: Deprivation distribution (%) at the national level, 0-23 months

Source: DHS 2010 & 2014/15

■ 2010 ■ 2015

Multidimensional child poverty headcount and indices

Table 1 presents the multidimensional deprivation headcount (H) %, the average intensity among the deprived (A)% and the multidimensional child poverty index (M0). Almost 60% of the children were considered to be multidimensionally deprived in 2010 compared to 50.8% in 2014/2015. However, the average intensity of deprivation stayed the same (at just under 72%). This implies that these children are still as vulnerable in 2014/2015 as in 2010. Children facing at least three deprivations are on average deprived in 3.6 dimensions out of a total of 5. Due to the decrease in the multidimensional deprivation headcount (H), M0 shifted from 0.43 in 2010 to 0.36 in 2014/2015.

		Multidimensional deprivation headcount (H) %	Average no. of deprivations among the deprived	Average intensity among the deprived (A) %	Adjusted multidimensional deprivation headcount (M0)
2010	Deprived in at least 3 dimensions	59.9	3.6	71.7	0.43
2014/2015	Deprived in at least 3 dimensions	50.8	3.6	71.8	0.36

Table 1: Indices at the national level, 0-23 months

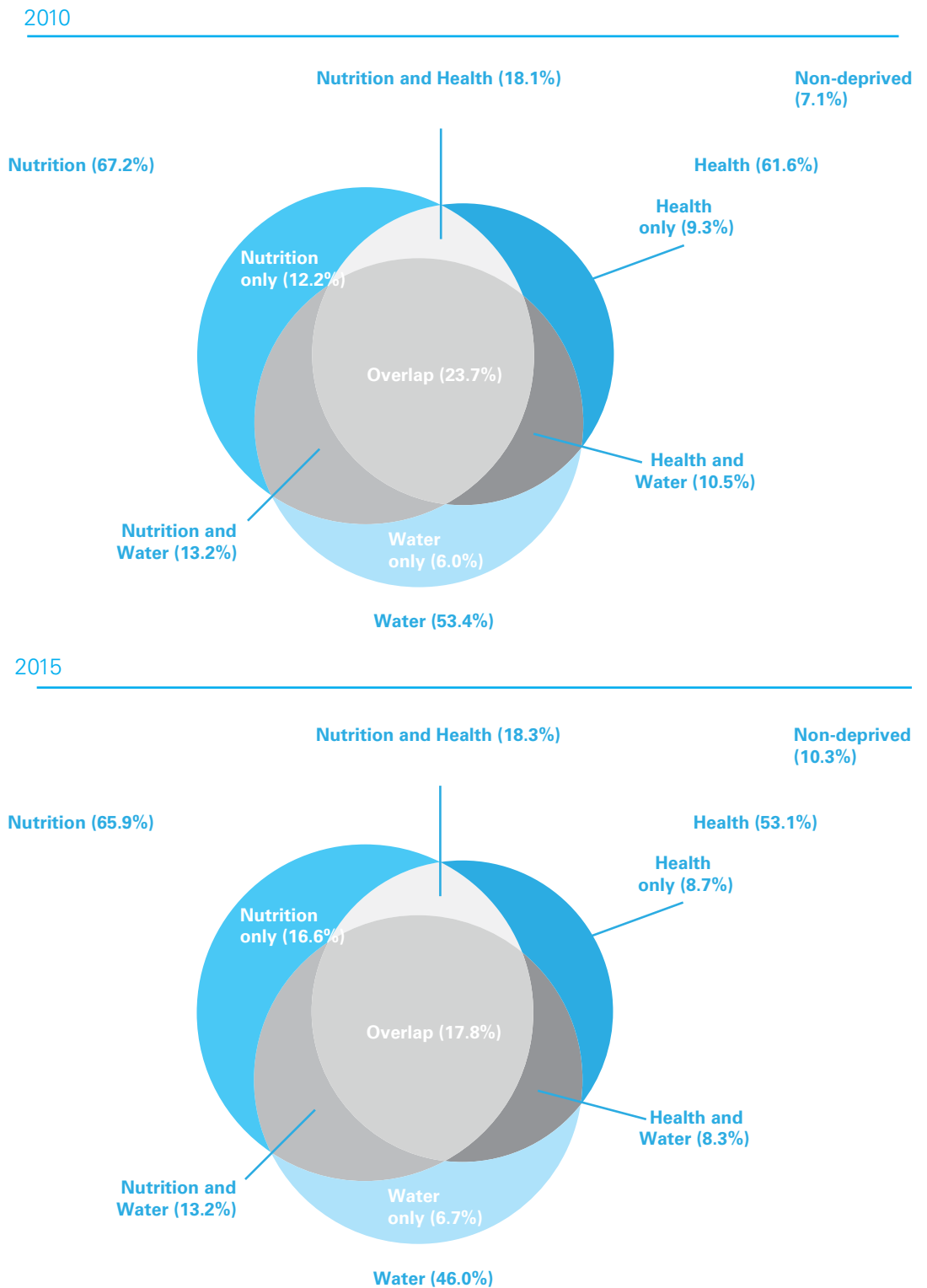
Source: DHS 2010 & 2014/15

Deprivation overlap analysis

The deprivation overlap between nutrition, health and water has decreased: 23.7% of children in this age group were deprived in all three dimensions in 2010, while just 17.8% of the children were similarly deprived in 2014/2015. The proportion of children who do not experience any deprivation also increased from 7.1% in 2010 to 10.3% in 2014/2015 (Figure 69).

Figure 69: Venn diagram on the deprivation overlap (%) between nutrition, health and water at the national level, 0-23 months

Source: DHS 2010 & 2014/15



3.2: Trends in poverty reduction - children aged 24-59 months

(a) Single sector analysis

This section covers the multidimensional child poverty (deprivations) trend analysis (between 2010 and 2014/15) for children aged 24-59 months, in the dimensions of housing, sanitation, water and health. Children aged 24-59 months were, like the younger age group, better off in 2014/15 than in 2010.

- **Health** shows the largest improvement, with a difference of almost 41 percentage points. Again, this progress is mostly due to the indicators birth attendance and vaccination. In 2014/15, almost 30 percentage points fewer children were deprived in birth attendance, while 80 percentage points fewer were deprived in vaccination.
- The reduction in the other dimensions of water, sanitation and housing is less pronounced.

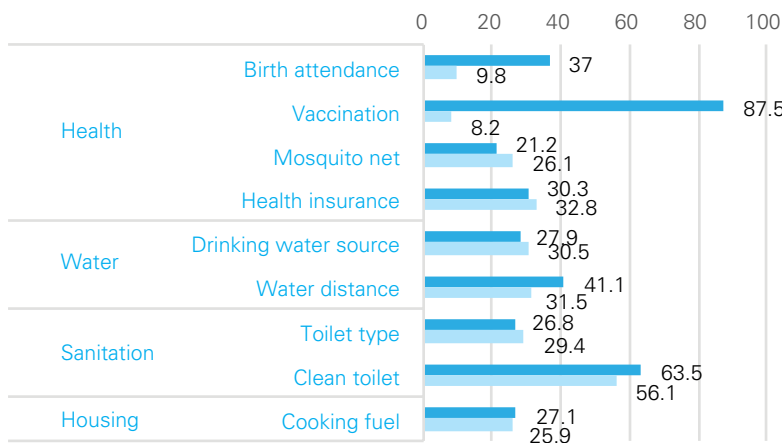


Figure 70: Deprivation rates (%) in each indicator of a child's well-being, 24-59 months

Source: DHS 2010 & 2014/15

■ 2010 ■ 2015

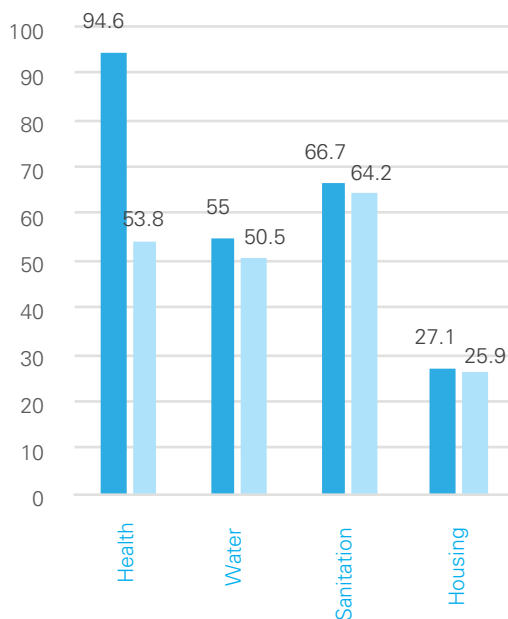


Figure 71: Deprivation rates (%) in each dimension of a child's well-being, 24-59 months

Source: DHS 2010 & 2014/15

■ 2010 ■ 2015

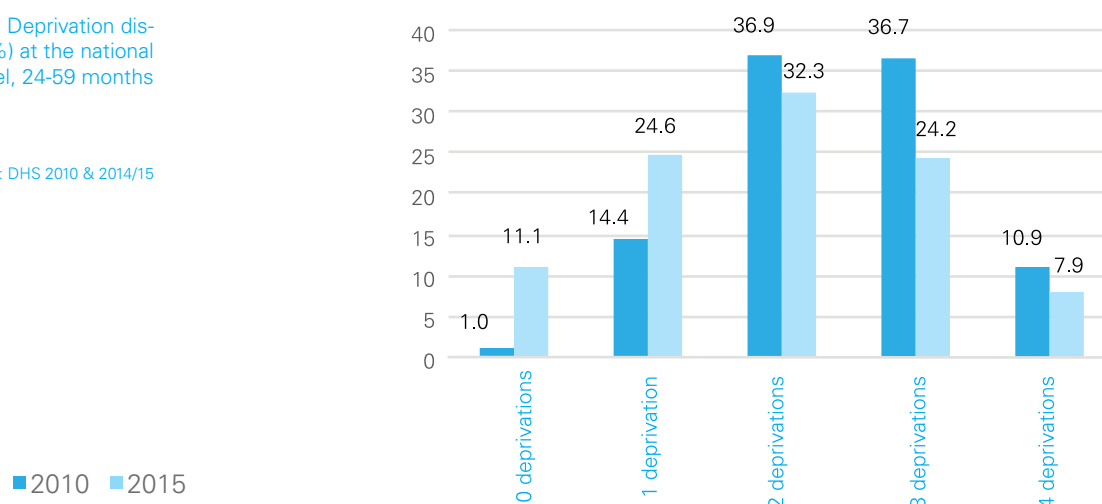
(b) Multidimensional deprivation analysis

Distribution of deprivations

There has been a large increase in the number of children who experience zero or only one deprivation. In 2010, only 1.0% of children aged 24-59 months did not face any deprivation at all, while in 2014/15, 11.1% of the children were not deprived in any dimension. Moreover, fewer children were deprived in three out of four dimensions in 2014/15 than in 2010 (Figure 72).

Figure 72: Deprivation distribution (%) at the national level, 24-59 months

Source: DHS 2010 & 2014/15



Multidimensional child poverty indices

Multidimensional poverty decreased significantly for the 24-59 months age group: in 2010, 47.7% of children faced at least three deprivations compared to only 32.0% in 2014/2015. The average intensity among the deprived was almost unchanged, while the multidimensional child poverty index (M0) decreased from 0.39 to 0.26 (Table 2).

Table 2: Indices at the national level, 24-59 months

Source: DHS 2010 & 2014/15

		Multidimensional deprivation headcount (H) %	Average no. of deprivations among the deprived	Average intensity among the deprived (A) %	Adjusted multidimensional deprivation headcount (M0)
2010	Deprived in at least 3 dimensions	47.7	3.2	80.7	0.39
2014/2015		32.0	3.3	81.1	0.26

Deprivation overlap

In 2010, there was an overlap of 35.0% between health, water and sanitation. The deprivation overlap was lower in 2014/15, with only 19.9% of children experiencing deprivation in all three dimensions. Moreover, in 2014/15 fewer children were deprived in sanitation, health and water. Just 12.2% of children aged 24-59 months were not deprived in any of the three dimensions in 2014/15, while in 2010 only 1.3% of children were non-deprived (Figure 73).

2010

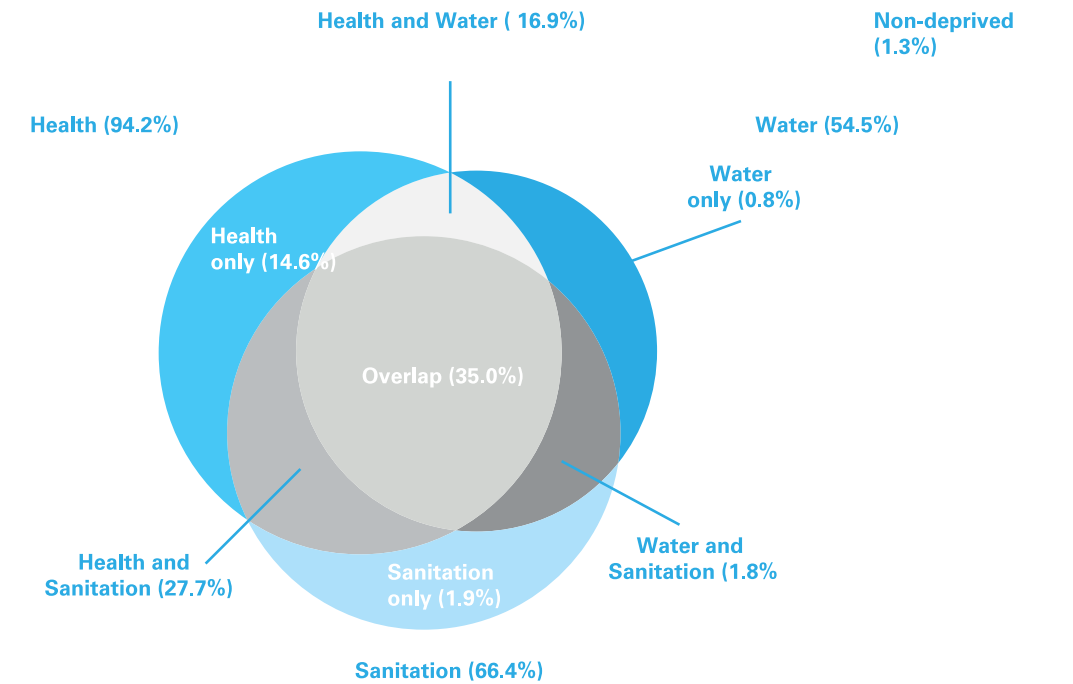
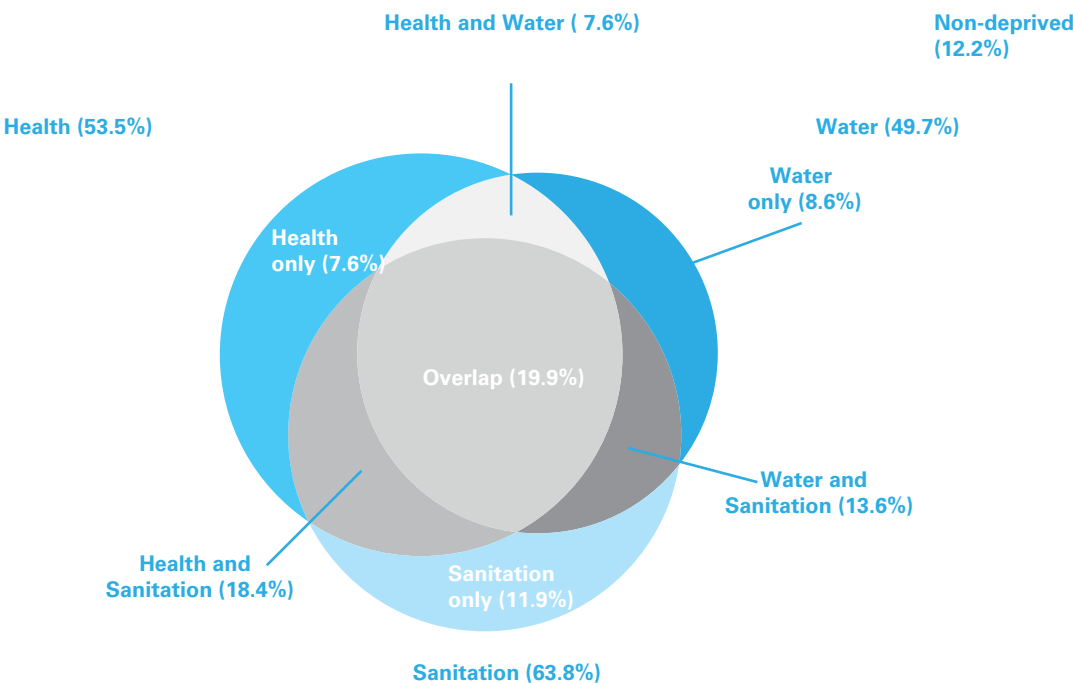


Figure 73: Venn diagram on the overlap between health, water and sanitation at the national level, 24-59 months

Source: DHS 2010 & 2014/15

2015



3.3: Trends in poverty reduction - children aged 5-14 years

(a) Single sector analysis

This section covers the multidimensional child poverty (deprivations) trend analysis (between 2010/11 and 2013/14) for children aged 5-14 years of age, in the dimensions of housing, sanitation, water, education and health. The reductions in deprivation rates between 2010/11 and 2013/14 are smaller than for the younger age groups, which can be expected as the time period of analysis is shorter (three rather than five years), but 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, a remarkable improvement over a three-year period (Figure 75). This is partly explained by the marked improvement in the indicator lighting source, where only 33.9% of the children were deprived in 2013/14 compared to 59.1% in 2010/11. The indicators environmental destruction, water source and toilet type also show improvements (Figure 74).

Figure 74: Deprivation rates (%) in each indicator of a child's wellbeing, 5-14 years

Source: EICV 2010/11 & 2013/14

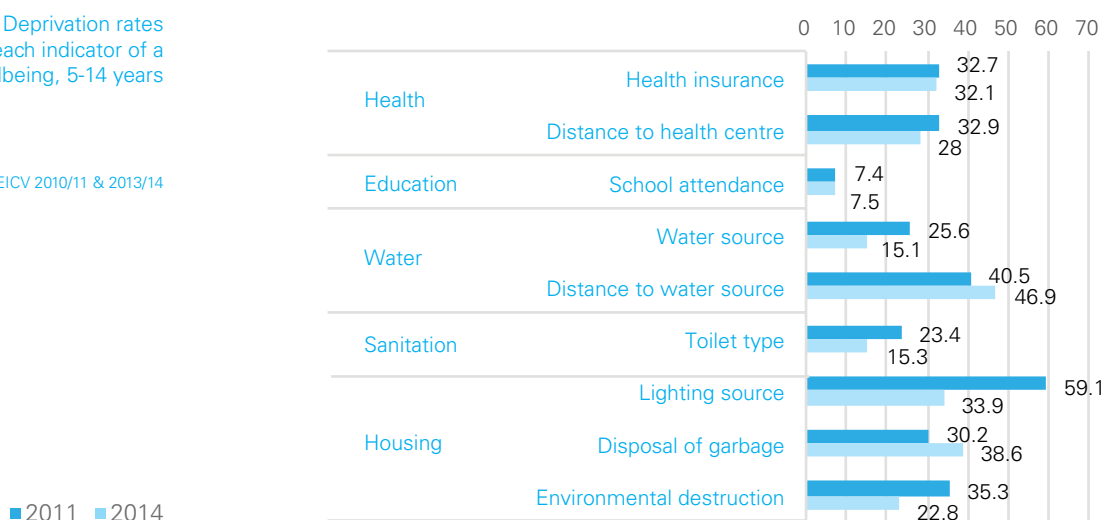
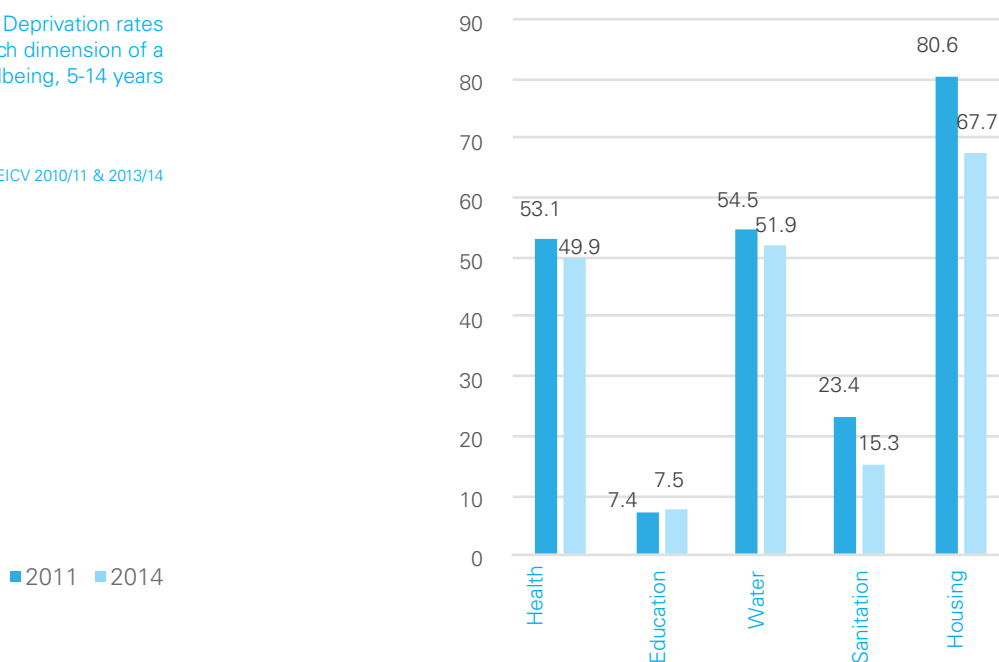


Figure 75: Deprivation rates (%) in each dimension of a child's wellbeing, 5-14 years

Source: EICV 2010/11 & 2013/14



(b) Multidimensional deprivation analysis

Distribution of deprivations

In 2014, the number of deprivations experienced by children aged 5-14 was lower than in 2011 – i.e. 60.7 % of children were deprived in 0 to 2 deprivations simultaneously as compared to 70.8 % in 2011 (Figure 76).

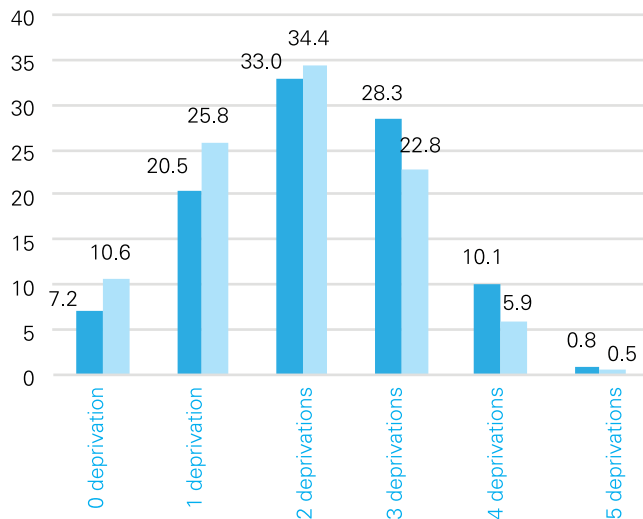


Figure 76: Deprivation distribution (%) at the national level, 5-14 years

Source: EICV 2010/11 & 2013/14

■ 2011 ■ 2014

Multidimensional child poverty indices

Table 3 shows that in 2014, on average multidimensionally poor children experience 3.2 out of a total of five possible deprivations, which is almost the same as the average intensity figure for 2011. Fewer children are facing three or more simultaneous deprivations, 39.2% compared to 29.2%. The M0 has decreased (from 0.26 in 2011 to 0.19 in 2014).

		Multidimensional deprivation headcount (H) %	Average no. of deprivations among the deprived	Average intensity among the deprived (A) %	Adjusted multidimensional deprivation headcount (M0)
2010/11	Deprived in at least 3 dimensions	39.2	3.3	66	0.26
2013/14		29.2	3.2	64.8	0.19

Table 3: Indices at the national level, 5-14 years

Source: EICV 2010/11 & 2013/14

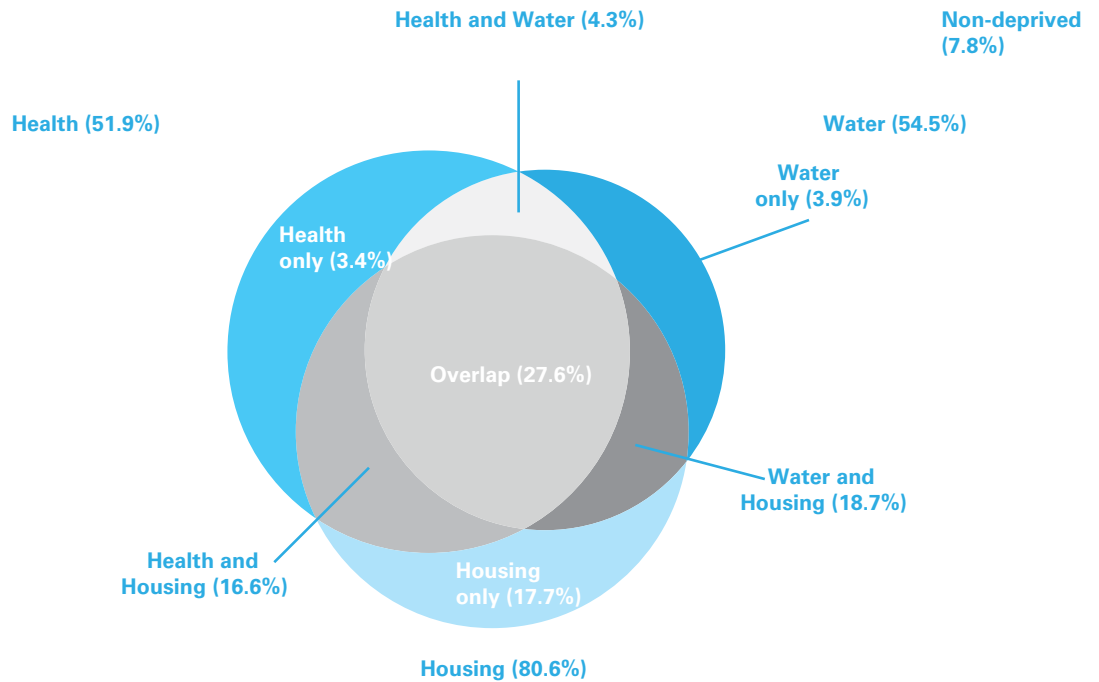
Deprivation overlap

As can be observed in Figure 77, the number of children simultaneously deprived in health, water and housing fell by seven percentage points between 2010/11 and 2013/14. The deprivation headcount for all dimensions has declined, especially for housing (80.6% in 2010/11 versus 67.8% in 2013/14). Consequently, the number of children not experiencing any deprivation slightly increased from 7.8% to 11.5%.

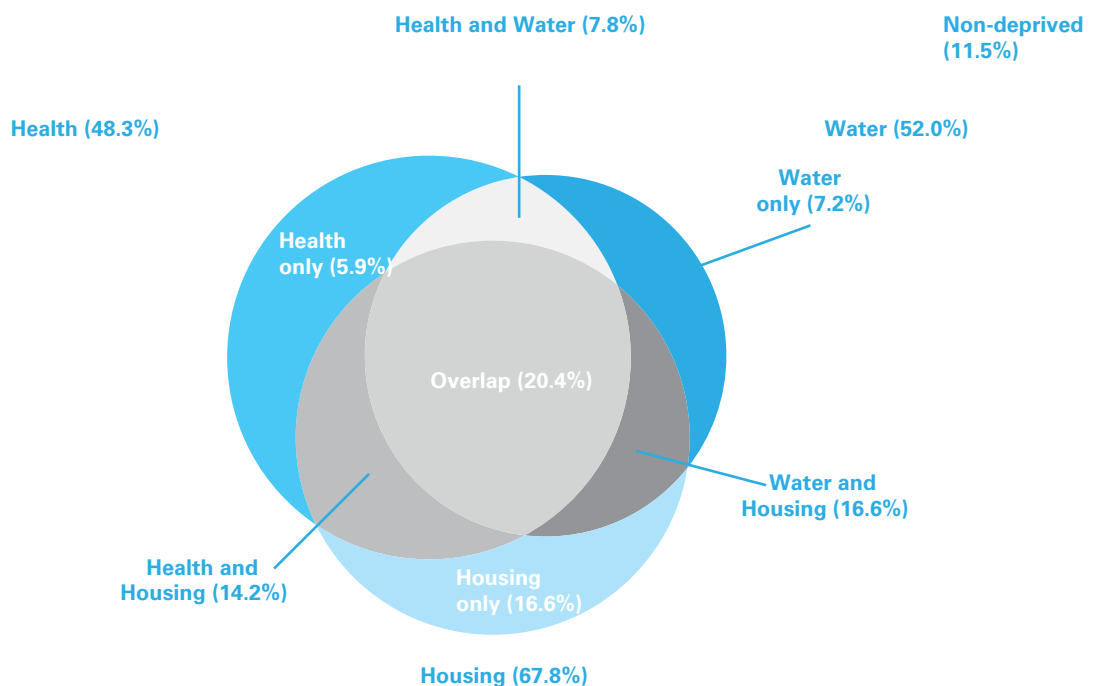
Figure 77: Venn diagram on the deprivation overlap (%) between health, water and housing at the national level (trend analysis), 5-14 years

Source: EICV 2010/11 & 2013/14

2011



2014



3.4: Trends in poverty reduction - children aged 15-17 years

(a) Single sector analysis

This section covers the multidimensional child poverty (deprivations) trend analysis (between 2010/11 to 2013/14) for children aged 15-17 years, in the dimensions of housing, sanitation, water, education and health. The difference between this age group and the 5-14 age group is in the indicator of education, where an additional indicator is used for this older age group to capture whether a child successfully completed primary education or not.

- From 2010/11 to 2013/2014, children aged 15-17 were doing better in all dimensions, particularly education and housing (Figure 79). The deprivation rate of housing decreased by 15 percentage points, which is mostly due to the indicator lighting source (57.6% in 2011 versus 29.9% in 2014) as shown in Figure 78 .
- In addition, large improvements are witnessed in the dimension of education: in 2013/2014, 57.8% of children 15-17 years were not attending school compared to 71.2% in 2010/2011.
- However, there is a slightly higher proportion of children who did not complete primary school in 2013/2014 (Figure 78).

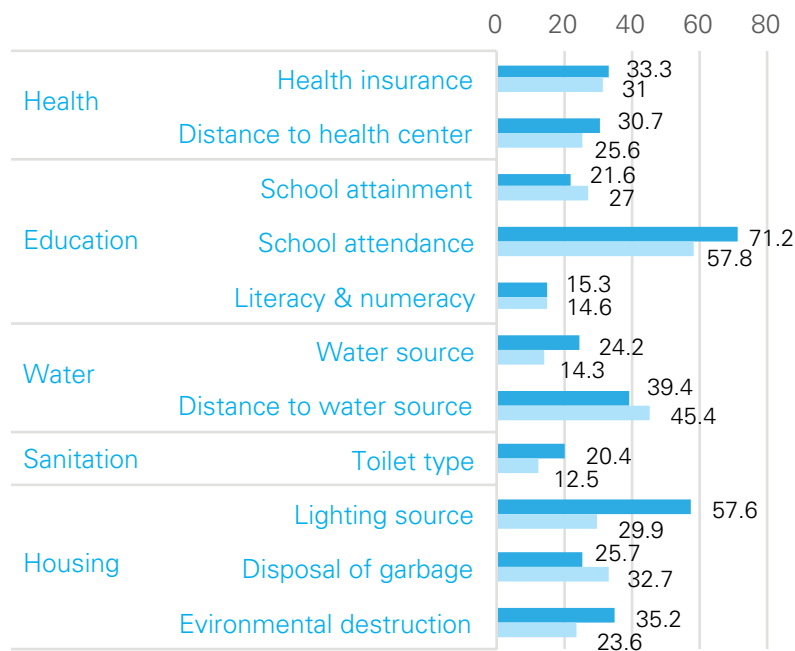


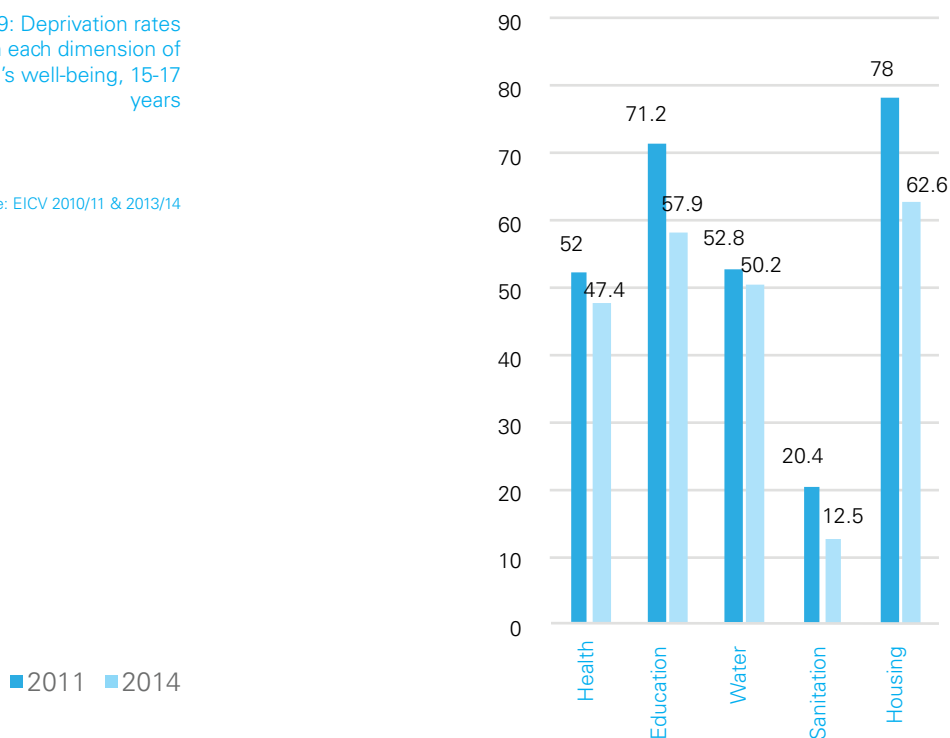
Figure 78: Deprivation rates (%) in each indicator of a child's well-being, 15-17 years

Source: EICV 2010/11 & 2013/14

■ 2011 ■ 2014

Figure 79: Deprivation rates (%) in each dimension of a child's well-being, 15-17 years

Source: EICV 2010/11 & 2013/14

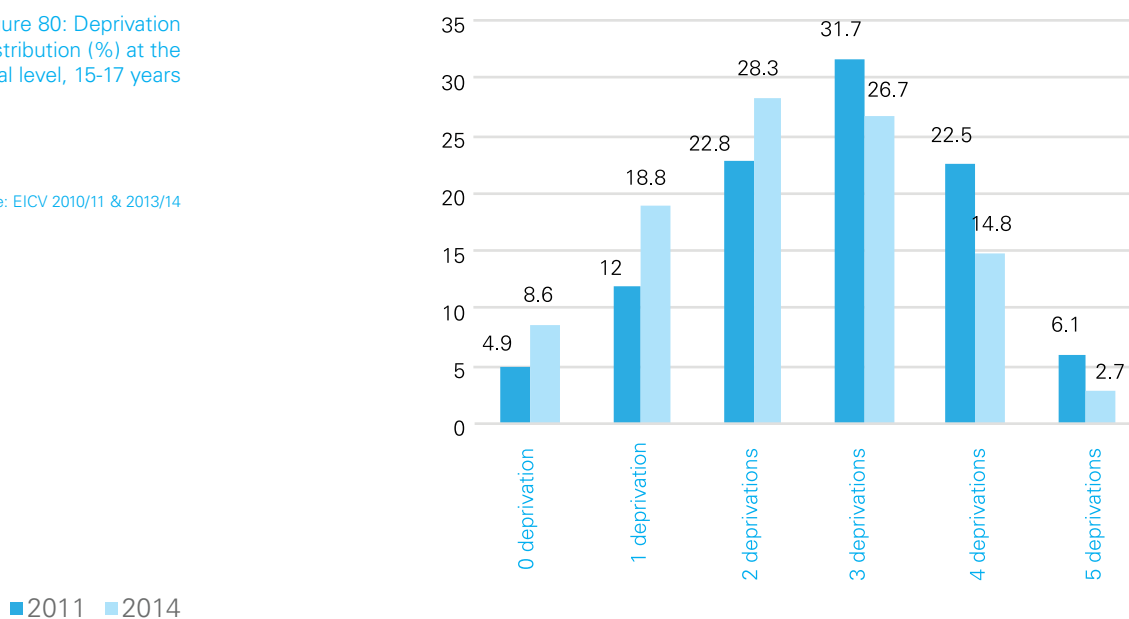


(b) Multidimensional deprivation analysis

Similar to the other age groups, the deprivation distribution improved from 2010/2011 to 2013/2014 with a higher proportion of children deprived in fewer dimensions. In 2013/14, around 56% of children aged 15-17 were simultaneously deprived in zero, one or two dimensions, compared to 40% in 2010/2011. And fewer children face three or more deprivations (Figure 80).

Figure 80: Deprivation distribution (%) at the national level, 15-17 years

Source: EICV 2010/11 & 2013/14



Multidimensional child poverty indices

In 2010/11, 60.2% of children aged 15-17 were deprived in three or more dimensions but the figure fell to 44.2% in 2013/14. The average intensity among the deprived (A) has hardly changed over this period but the multidimensional child poverty index (M0) fell from 0.43 in 2010/2011 to 0.31 in 2013/2014 (Table 4).

		Multidimensional deprivation headcount (H) %	Average no. of deprivations among the deprived	Average intensity among the deprived (A) %	Adjusted multidimensional deprivation headcount (M0)
2010/11	Deprived in at least 3 dimensions	60.2	3.6	71.5	0.43
2013/14		44.2	3.5	69.2	0.31

Table 4: Indices at the national level, 15-17 years

Source: EICV 2010/11 & 2013/14

Deprivation overlap

As with the previous age groups, the deprivation overlap of three dimensions decreased between 2010/11 and 2013/14 (Figure 81). A third (33.2%) of children aged 15-17 were simultaneously deprived in education, water and housing in 2010/11, but this figure had fallen to 21.5% in 2013/14. Nearly twice as many children are not deprived in any dimension in 2013/14 compared to 2010/11 (11.6% versus 5.8%).

2011

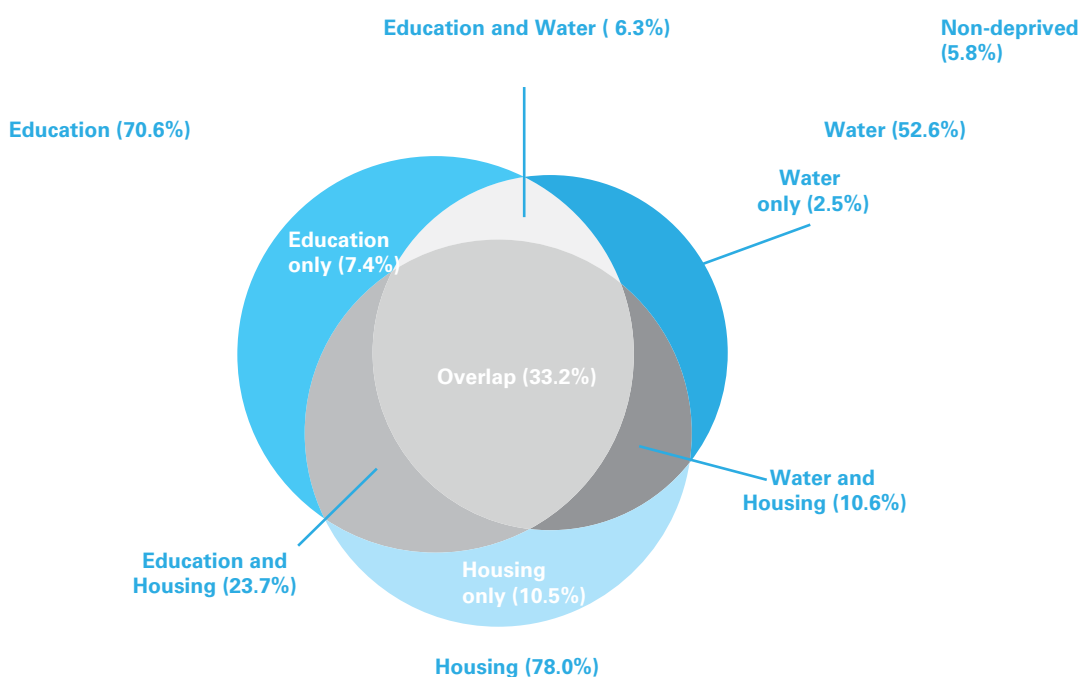
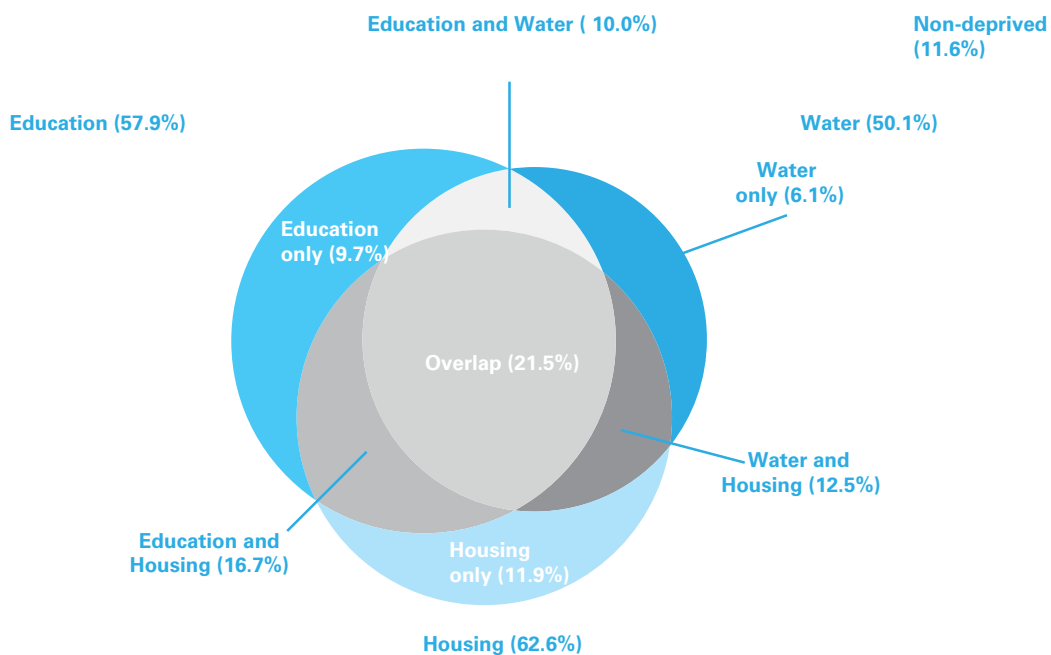


Figure 81: Venn diagram on the overlap between education, water and housing at the national level (trend analysis), 15-17 years

Source: EICV 2010/11 & 2013/14

2014



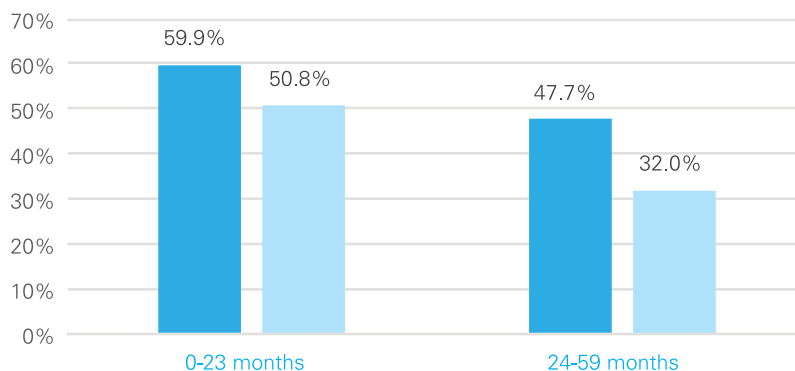
Overall, all four age groups show a decrease in child poverty between the years 2010 and 2015 (Figure 82). The proportion of multidimensionally poor children decreased by at least 10 percentage points for all age groups.

Figure 82: Proportion of multidimensionally poor children (%) for each age group

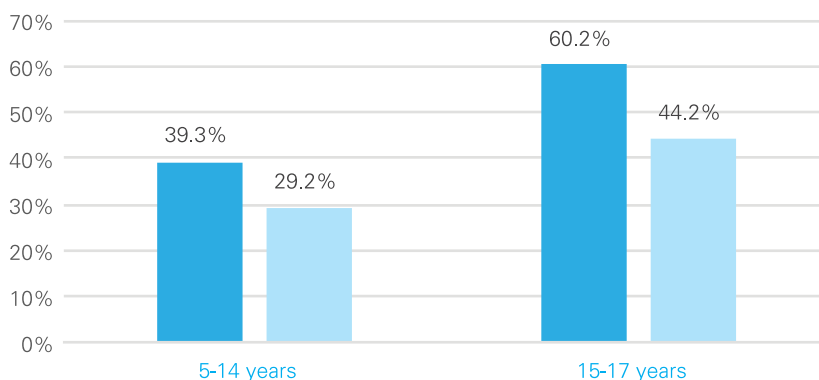
Source: EICV 2010/11 & 2013/14

■ 2010 ■ 2014/15

0-4 years



5-17 years



■ 2010/11 ■ 2013/14

CHAPTER 4: STUNTING AND CHILD POVERTY IN RWANDA

Childhood malnutrition is one of the most significant impediments to human development globally. A key indicator of chronic malnutrition is stunting (being too short for one's age), which is defined as a height that is more than two standard deviations below the World Health Organization (WHO) Child Growth Standards median. Stunting is the outcome of inadequate nutrition and repeated bouts of infection during the first 1,000 days of life. Stunting has long-term effects on individuals and societies, including diminished cognitive and physical development, reduced productive capacity and poor health. Stunting is a well-established risk marker of poor child development.

In Rwanda, 38% of under-5 children are stunted and 14% are severely stunted (according to the latest DHS 2014/15). Stunting increases with the age of the child, rising from 18% among children aged 6-8 months to a peak of 49% among children aged 18-23 months before gradually declining to 37% among children aged 48-59 months. There is a significant difference in the level of stunting by sex (43% among boys and 33% among girls) and geographic variation is evident, with stunting being highest in Western Province (45%) and lowest in Kigali City (23%). The prevalence of stunting in Southern Province (41%), Northern Province (39%) and Eastern Province (35%) is also high.

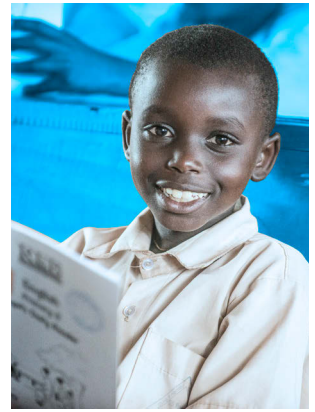
In the Demographic and Health Surveys used for analysis of multidimensional child poverty, anthropometric data for children were only collected for children in one out of every two households. Under MODA methodology, a multidimensional deprivation analysis can only be conducted if all the indicators used to proxy child deprivation are collected for all children (missing observations will bias the analysis) in the same survey. For this reason, stunting could not be used as an indicator for the dimension of nutrition in the general analysis but, given that it is such an important determinant of child wellbeing, in this chapter stunting is used as a profiling variable to study the types and combinations of deprivations faced by stunted children.

In the sections below, deprivation levels of stunted and non-stunted children are compared in order to identify the indicators and dimensions of child wellbeing related to child stunting in Rwanda. The incidence and intensity of child poverty among stunted children is also studied. As nutrition (anthropometric) data is only collected for under-5 children, the analysis focuses on that age group (split into 0-23 months and 24-59 months).

(a) Single sector analysis

Focusing on the single sectors/dimensions and their corresponding indicators in health, nutrition, child development, child protection, water, sanitation and housing - the following emerges (Figure 83):

- There are significantly higher deprivation rates in the indicators infant and young child feeding (IYCF), birth attendance, mosquito net, adult care, drinking water source, toilet type and clean toilet for stunted children aged 0-23 months than for non-stunted children.
- For children aged 24-59 months, there is a higher proportion of stunted children deprived in all indicators used in the analysis. The difference is statistically significant for all the indicators except birth attendance and vaccination.



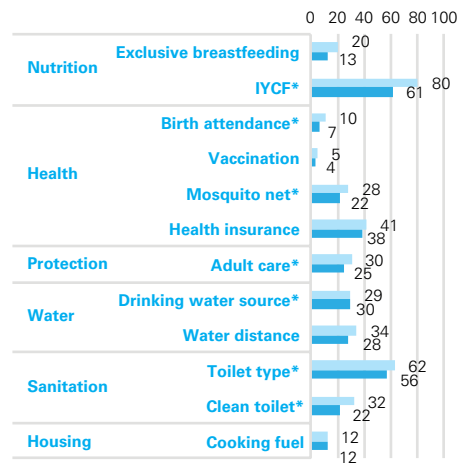
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Figure 83: Deprivation rates (%) in each indicator of a child's wellbeing by stunting status, 0-5 years

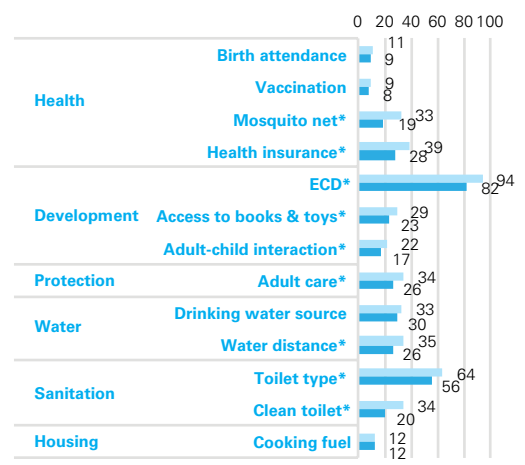
Source: DHS 2014/15

Stunted Children ■
Non-stunted Children ■

0-23 months



24-59 months



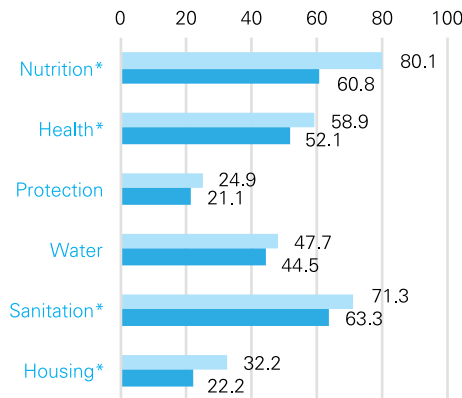
Similar results are observed when the deprivation rates in dimensions are compared (Figure 84) – a higher proportion of stunted children are deprived in all the dimensions. The differences between the deprivation rates for stunted and non-stunted children are significant for all dimensions (except protection and water for children aged 0-23 months, and protection for children aged 24-59 months).

Figure 84: Deprivation rates (%) in each dimension of a child's wellbeing, 0-5 years

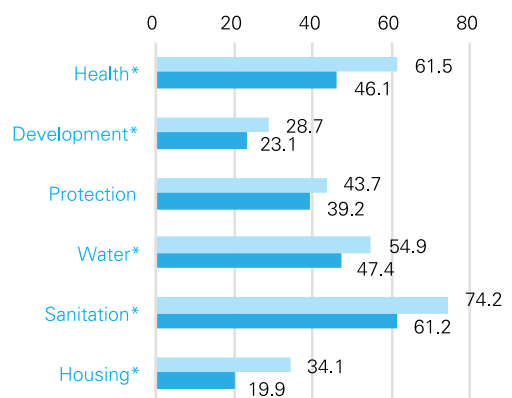
Source: DHS 2014/15

Stunted Children ■
Non-stunted Children ■

0-23 months



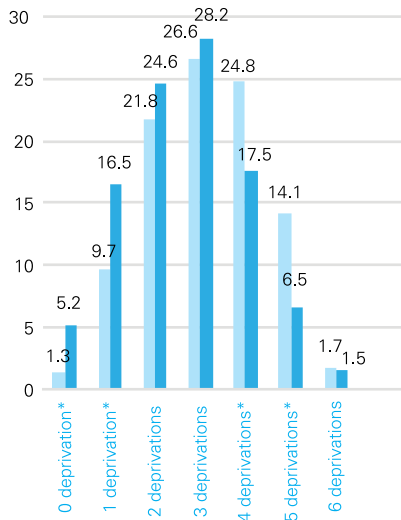
24-59 months



(b) Multidimensional deprivation analysis

Non-stunted children are deprived in fewer dimensions (zero or one dimensions), as seen in Figure 85. Stunted children, on the other hand, are deprived in many dimensions simultaneously (this may imply that a combination of deprivations lead to stunting of children in Rwanda). The difference is even more accentuated for children experiencing extreme multidimensional poverty (four to six deprivations), where there is a significantly higher percentage of stunted children.

0-23 months



24-59 months

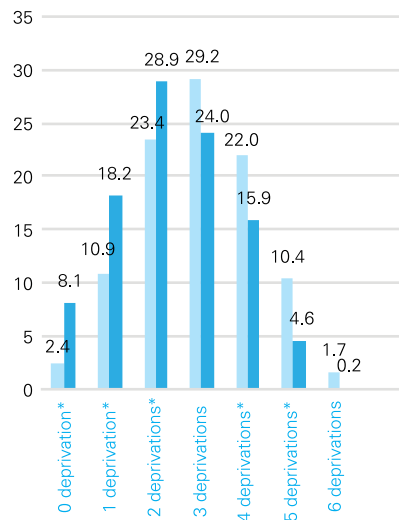


Figure 85: Deprivation distribution (%) by stunting status, 0-5 years

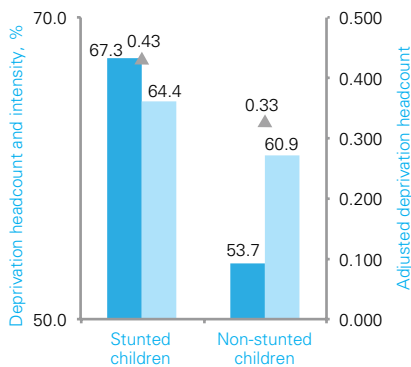
Source: DHS 2014/15

■ Stunted children
■ Non-stunted children

Multidimensional child poverty indices

Stunted children are also at a disadvantage when it comes to the multidimensional headcount (H) and intensity of deprivation (A); they consequently have a higher MO (Figure 86).

0-23 months



24-59 months

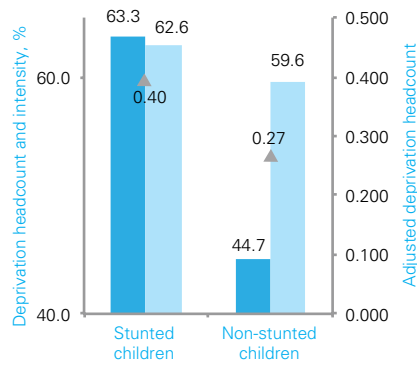


Figure 86: Deprivation Indices by stunting status, 0-5 years

Source: DHS 2014/15

■ Multidimensional deprivation headcount (H)*, %
■ Average intensity among the deprived (A)*, %
▲ Adjusted multidimensional deprivation headcount (MO)*

Deprivation overlap analysis

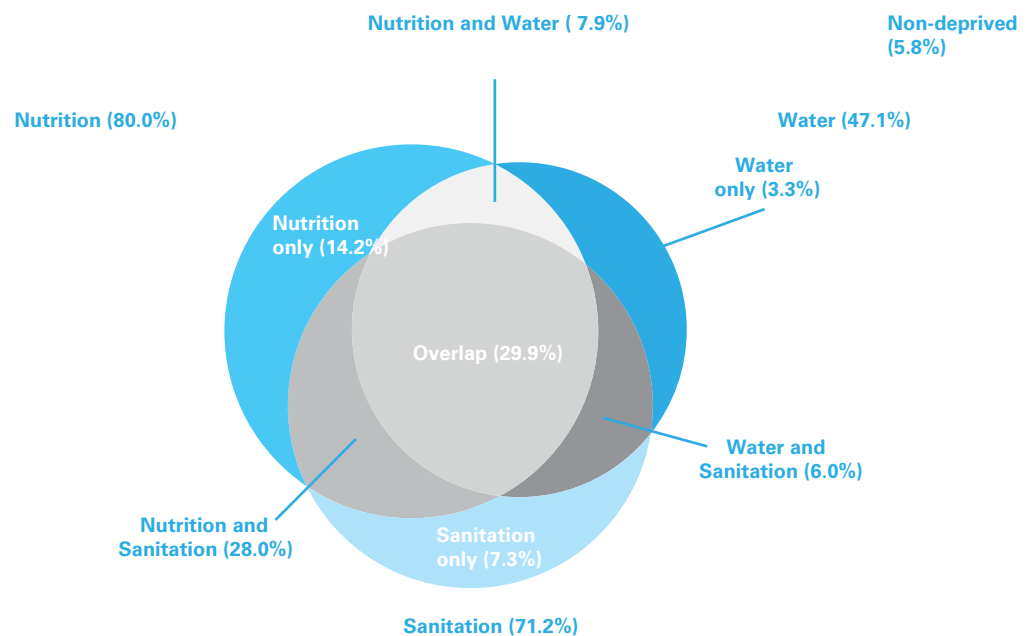
Comparison of various combinations of deprivations (Figures 87-90) shows that the overlap of deprivations is higher for stunted than for non-stunted children. The different combinations of deprivations below have importation implications for nutrition related policy and programming purposes:

- 29.9% of stunted children aged 0-23 months are simultaneously deprived in nutrition, water and sanitation.
- 35.8% of stunted children aged 0-23 months are simultaneously deprived in nutrition, health and sanitation.
- 25.6% of stunted children aged 24-59 months are simultaneously deprived in health, water and sanitation.
- 14.8% of stunted children aged 24-59 months are simultaneously deprived in water, sanitation and housing.

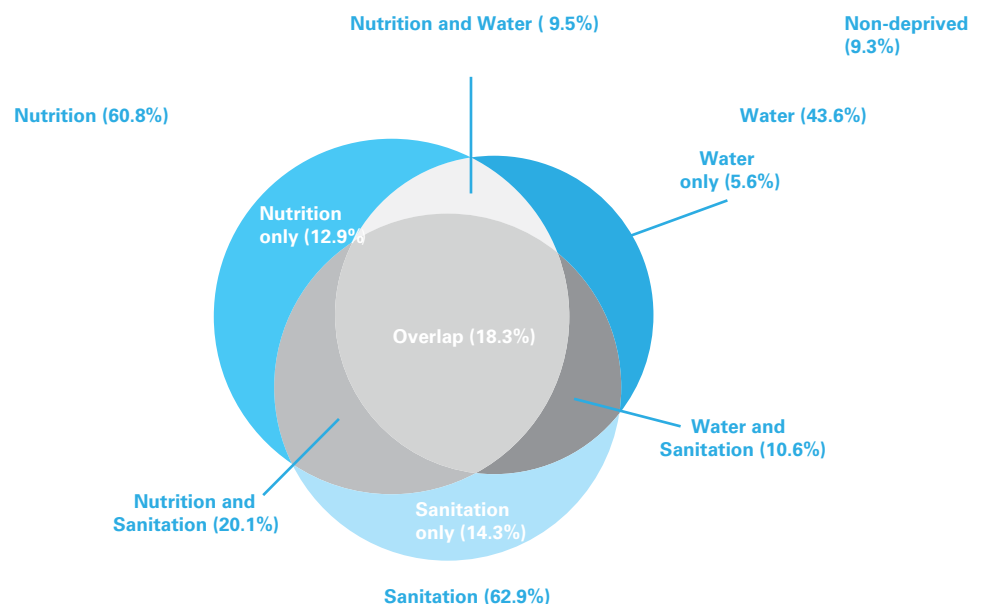
Stunted children

Figure 87: Deprivation rates for the combination of nutrition, water and sanitation by stunting status, 0-23 months

Source: DHS 2014/15



Non-stunted children



Stunted children

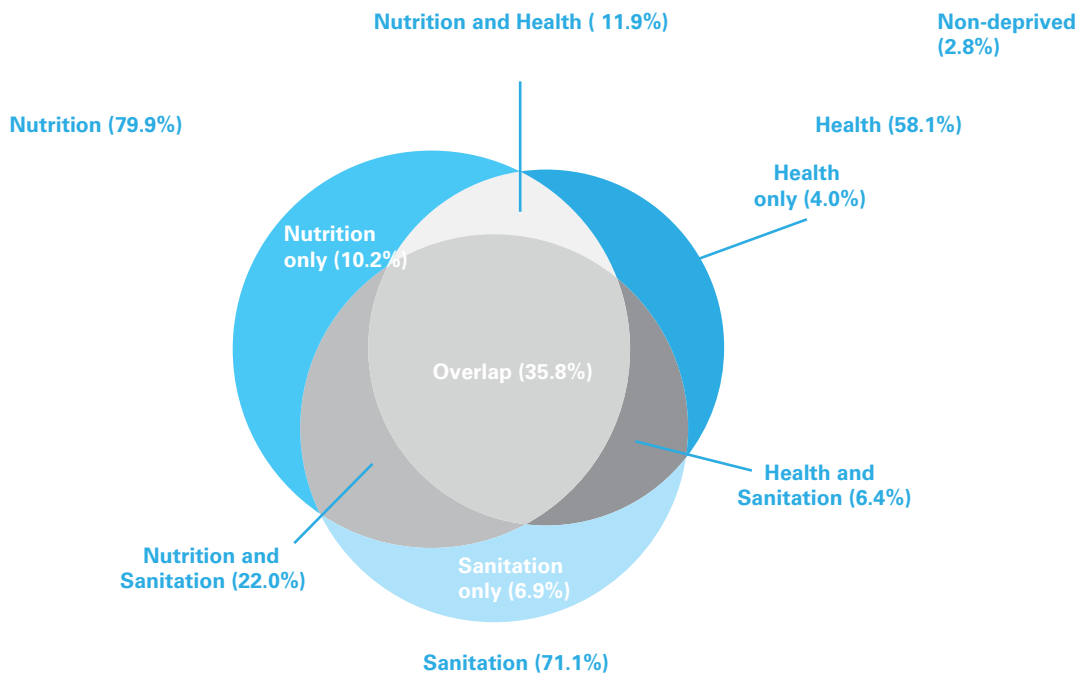


Figure 88: Deprivation rates for the combination of nutrition, health and sanitation by stunting status, 0-23 months

Source: DHS 2014/15

Non-stunted children

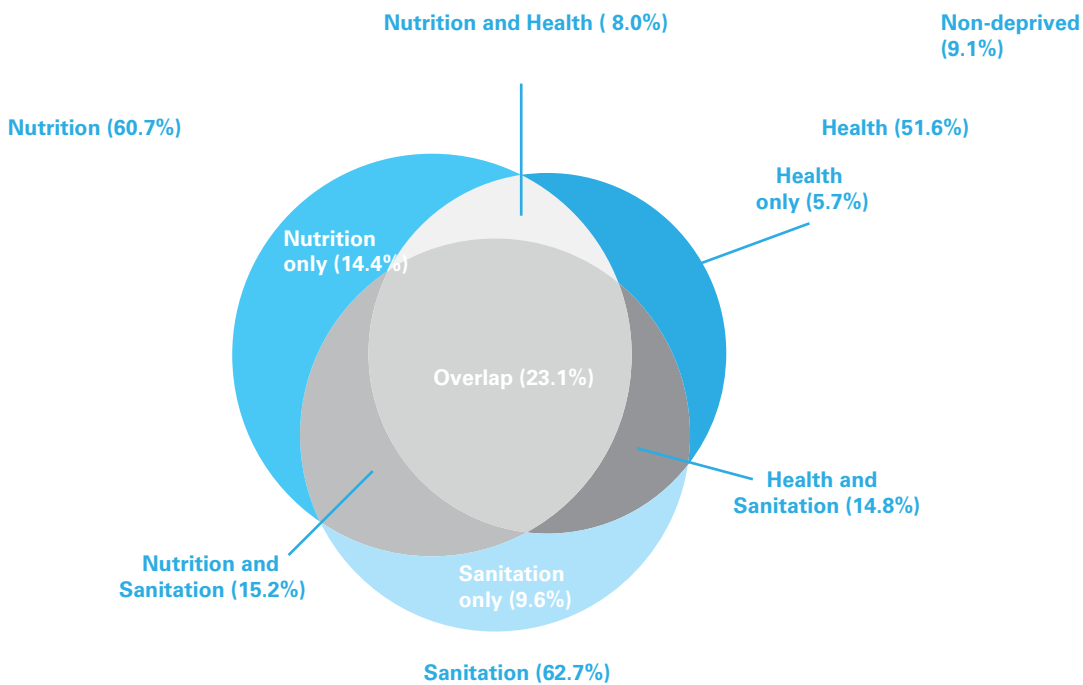
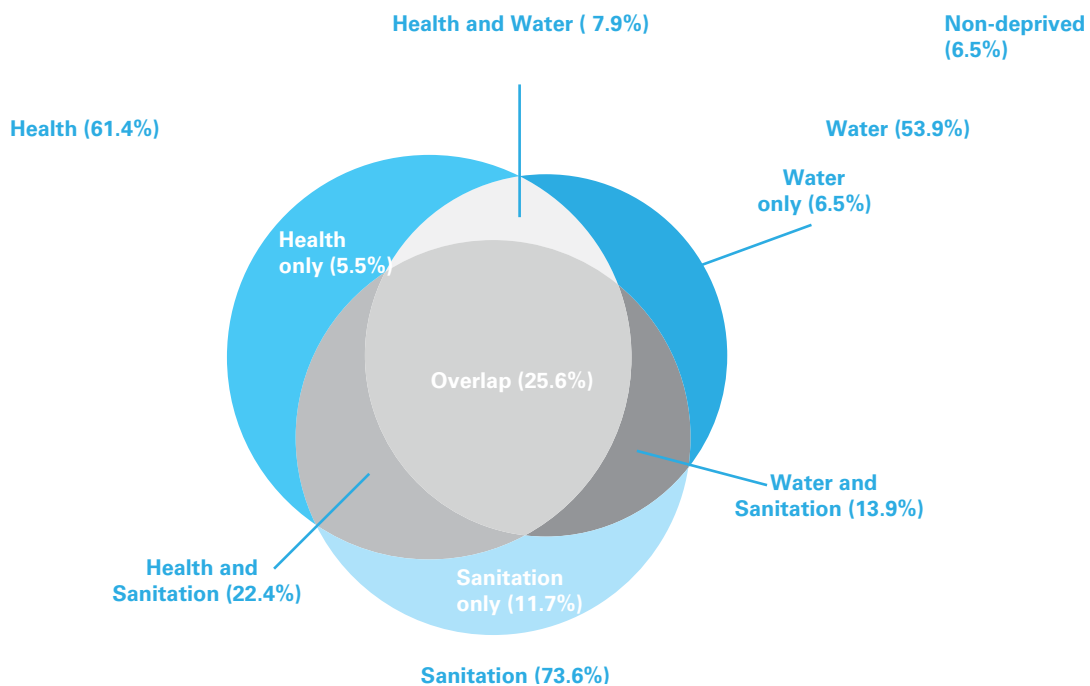


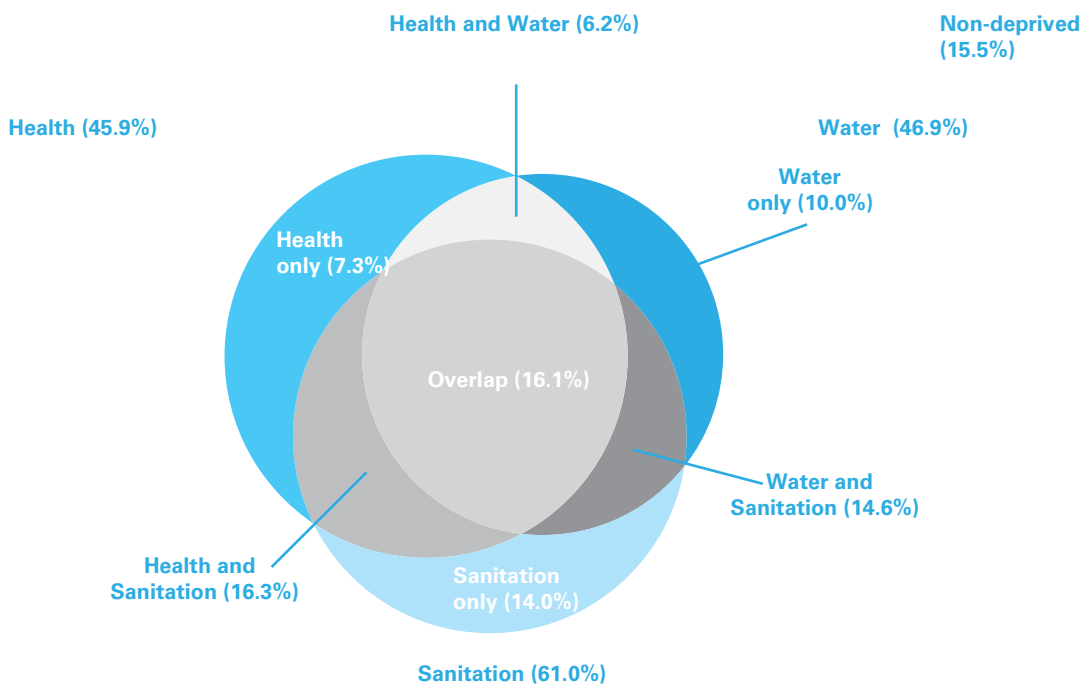
Figure 89: Deprivation rates for the combination of health, water and sanitation by stunting status, 24-59 months

Source: DHS 2014/15

Stunted children



Non-stunted children



Stunted children

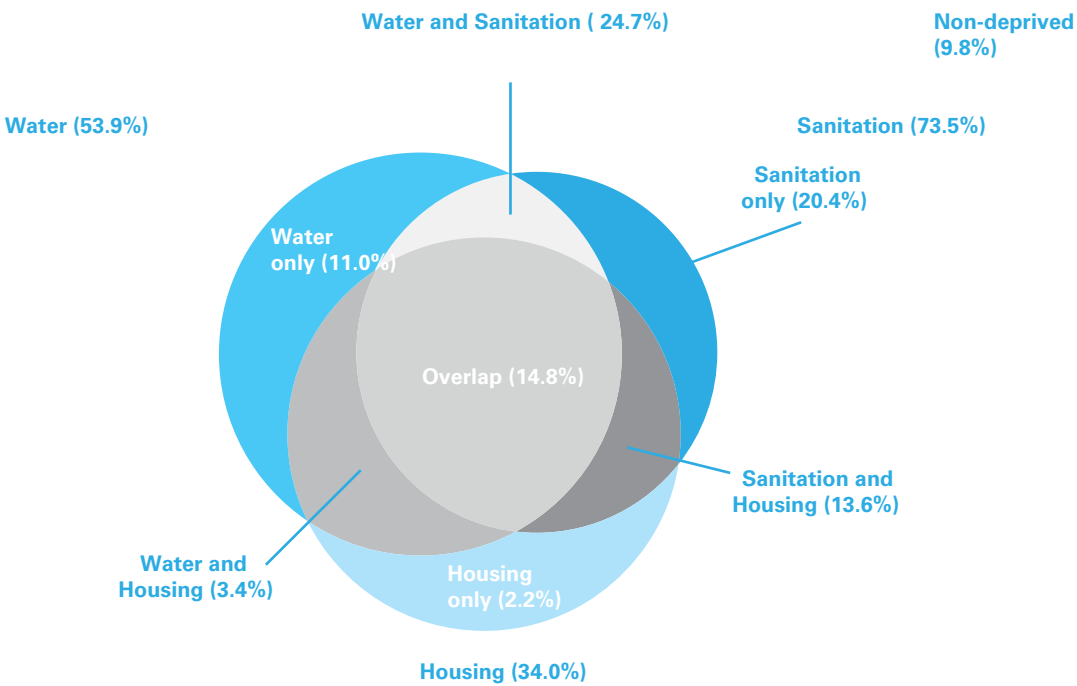
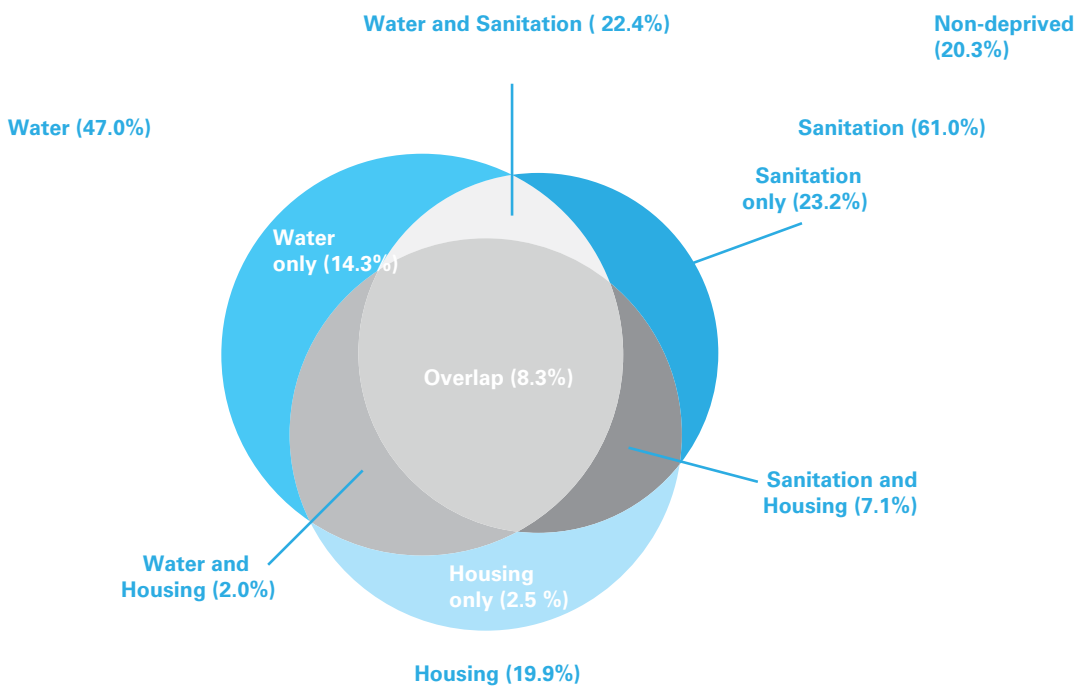


Figure 90: Deprivation rates for the combination of water, sanitation and housing by stunting status, 24-59 months

Source: DHS 2014/15

Non-stunted children



These different combinations of deprivations in relation to stunting confirm that a concerted effort is required to address deprivation in many dimensions/sectors and thus reduce stunting in Rwanda. Among other options, a social protection package combined with programmes to tackle deprivations in these dimensions simultaneously might prove effective in decreasing the levels of stunting in Rwanda.



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CHAPTER 5: CHILD MORTALITY AND CHILD POVERTY IN RWANDA

Rwanda has made more improvements in child survival than any other country in the Eastern and Southern African region, resulting in the sharp reduction in under-5 mortality over the past decade. According to the Rwanda DHS, the rate fell from 152 deaths per 1,000 live births in 2005 to 50 deaths per 1,000 live births in 2014/2015. The overall reduction in child mortality is primarily attributable to gains in the post-neonatal period: neonatal mortality has declined only modestly and constitutes an unfinished agenda of the MDGs.¹¹

Child mortality is considered a key indicator for child health and wellbeing, so the relationship between child mortality and multidimensional child poverty warrants in-depth analysis. In this chapter, the situation of under-5 children who live in households where a case of child mortality has been reported in the last five years is compared

with those who did not report such a case. The analysis is based on two age groups, 0-23 months and 24-59 months.

(a) Single sector analysis

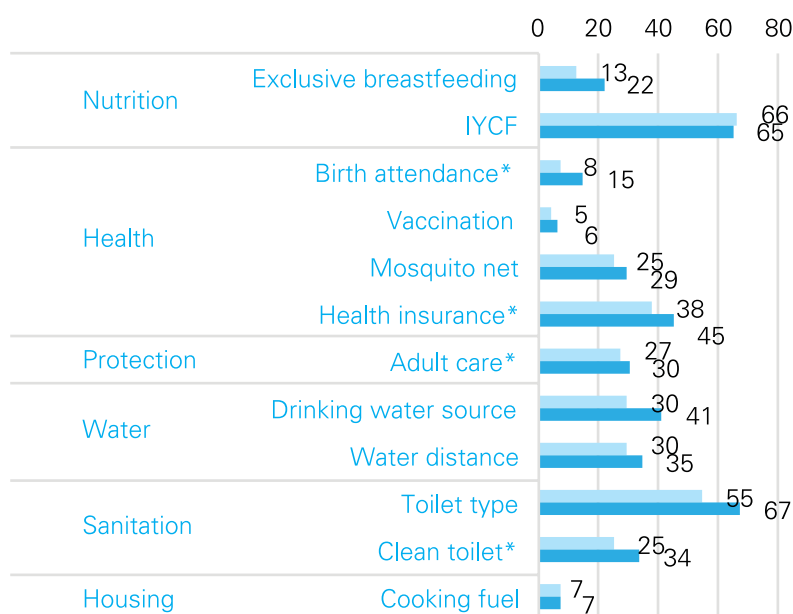
The single sector analysis highlights that deprivation rates are significantly higher for children aged 0-23 months living in a household that experienced a case of child mortality for the indicators birth attendance, health insurance, adult care and clean toilet. For those above 23 months, the indicators vaccination, toilet type and cooking fuel are significantly higher (Figure 91). However, it should be noted that this is a descriptive analysis - it does not provide information on causal relationship between these indicators and child mortality in Rwanda.

0-23 months

Figure 91: Deprivation rates (%) in each indicator of child wellbeing in households with/without child mortality in the last 5 years

Source: DHS 2014/15

Children living in a household with no child mortality ■
Children living in a household with at least one case of child mortality ■



¹¹UNICEF Rwanda website. Child Survival and Development. Available on: https://www.unicef.org/rwanda/child_rights.html

24-59 months

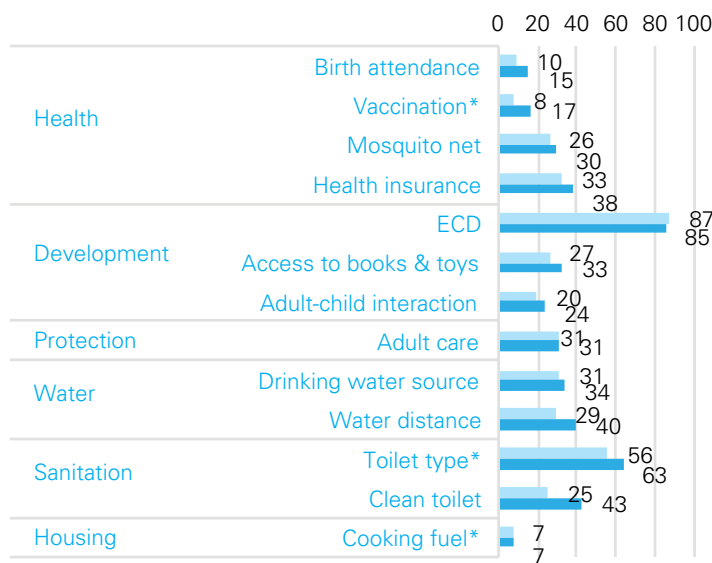


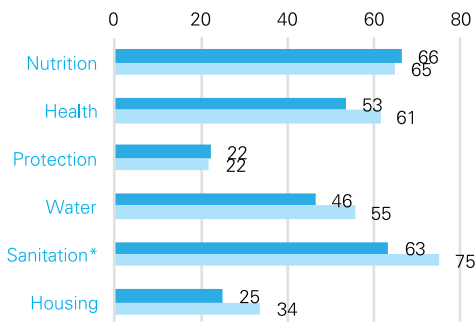
Figure 91: Deprivation rates (%) in each indicator of child wellbeing in households with/without child mortality in the last 5 years

Source: DHS 2014/15

■ Children living in a household with no child mortality
 ■ Children living in a household with at least one case of child mortality

Moving from indicators to dimensions, there are significantly higher deprivation rates in the dimensions of sanitation and housing for children living in households experiencing child mortality in the past five years (Figure 92).

0-23 months



24-59 months

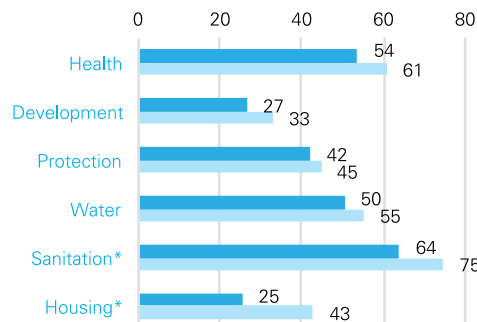


Figure 92: Deprivation rates (%) in each dimension of a child's wellbeing in households with/without child mortality in the last 5 years

Source: DHS 2014/15

■ Children living in a household with no child mortality
 ■ Children living in a household with at least one case of child mortality

(b) Multidimensional deprivation analysis

Distribution of deprivations

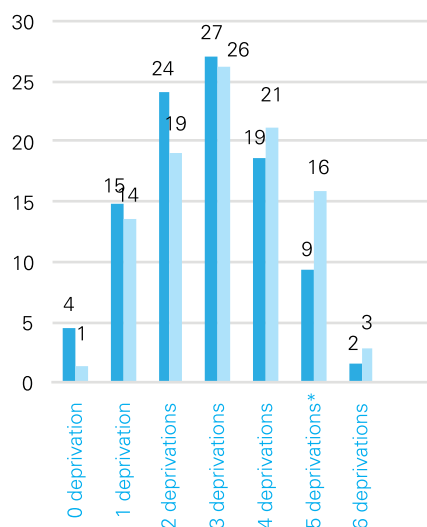
As depicted in Figure 93, children living in households having reported a case of child mortality experience, on average, more deprivations. For example, 40% of children aged 0-23 months living in households with child mortality experience four or more deprivations simultaneously. The same is noted for children aged 24-59 months, where a higher proportion of children living in households reporting a case of child mortality experience four or more deprivations, or 42% versus 27% of children living in households with no child mortality in past five years.

Figure 93: Deprivation distribution (%) for households with/without child mortality in the last 5 years

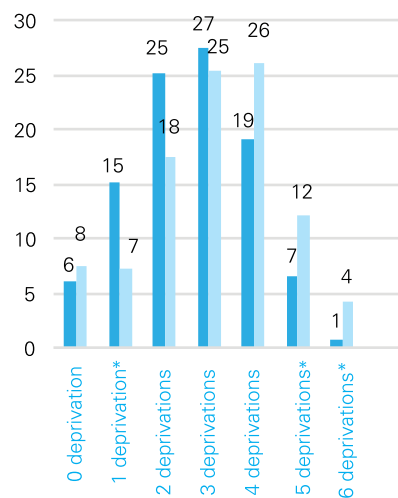
Source: DHS 2014/15

Children living in a household with no child mortality
 Children living in a household with at least one case of child mortality

0-23 months



24-59 months



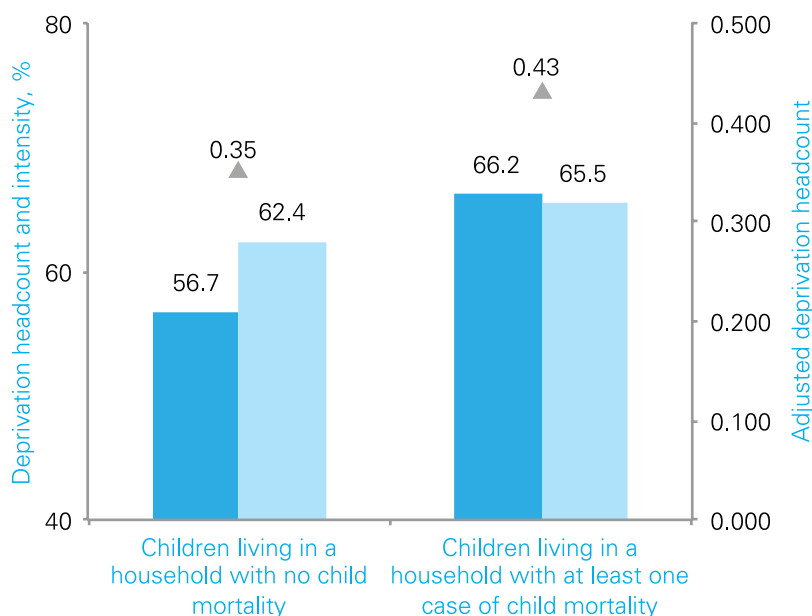
Multidimensional child poverty indices

In terms of deprivation indices, there is a higher proportion of multidimensionally poor children (the multidimensional deprivation headcount) living in households with at least one case of child mortality than in households with no child mortality (66.2% versus 56.7% for children aged 0-23 months; and 67.7% and 53.7% for children aged 24-59 months, respectively). The intensity of deprivation amongst the multidimensionally poor children is also higher for children living in households experiencing child mortality (Figures 94 and 95).

Figure 94: Deprivation indices for children aged 0-23 months living in households with/without child mortality in the last 5 years

Source: DHS 2014/15

Multidimensional deprivation headcount (H), %
 Average intensity among the deprived (A), %
 Adjusted multidimensional deprivation headcount (M0)*



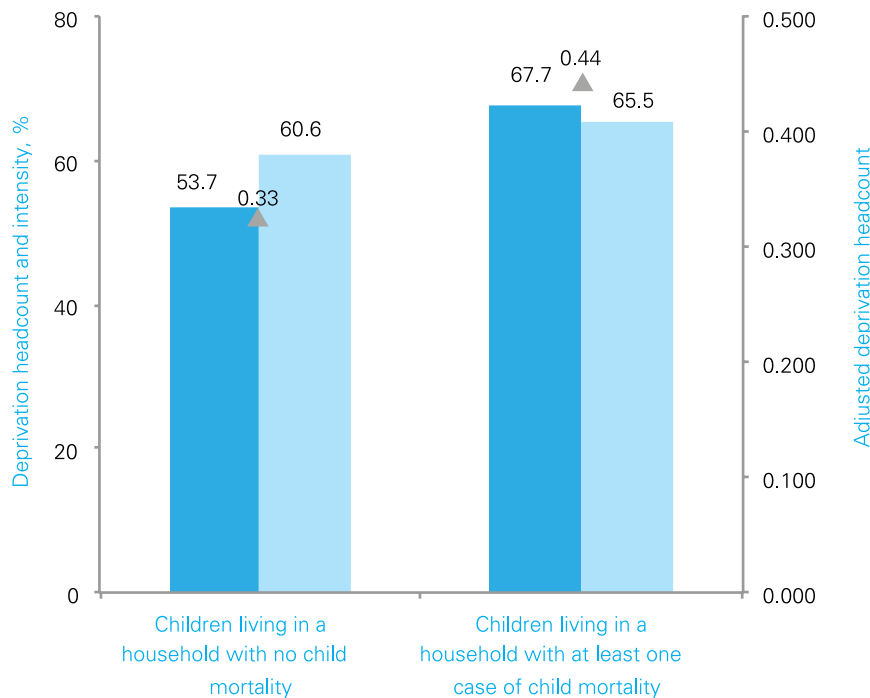


Figure 95: Deprivation indices for children aged 24-59 months living in households with/without child mortality in the last 5 years

Source: DHS 2014/15

■ Multidimensional deprivation headcount (H)*, %
 ■ Average intensity among the deprived (A)*, %
 ▲ Adjusted multidimensional deprivation headcount* (M0)

Deprivation overlap analysis

The key objective of studying the deprivations facing children who live in a household which experienced child mortality in the last five years is to understand the situation and further promote policies and programmes aimed at reducing child mortality. In order to address the issues facing those children, the combination of deprivations that they suffer from were studied (Figures 96-99).

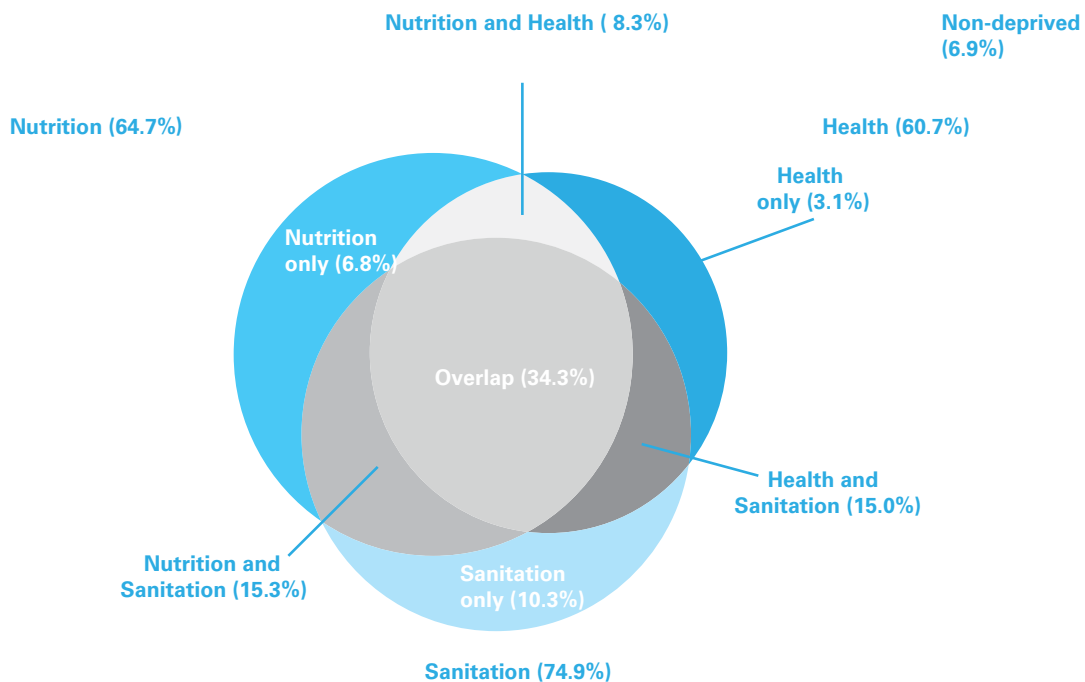
Overall, and in line with the analysis above, it was observed that for all the combinations, children living in households with a case of child mortality were more likely to simultaneously experience deprivations in the following combination of dimensions:

- 34.3% of children aged 0-23 months in households with at least one case of child mortality are deprived simultaneously in nutrition, health and sanitation, versus 26.3% of children in households with no child mortality in the last 5 years.
- 31.3% of children aged 0-23 months in households with at least one case of child mortality are deprived simultaneously in nutrition, sanitation and water, versus 21.2% of children in households with no child mortality in the last 5 years.
- 31.3% of children 24-59 months in households with at least one case of child mortality are deprived simultaneously in health, water and sanitation, versus 19.6% of children in households with no child mortality in the last 5 years.
- There are no prominent differences between the overlaps of the three dimensions of health, child development and child protection for children in households with at least one case of child mortality versus households with no cases of child mortality.

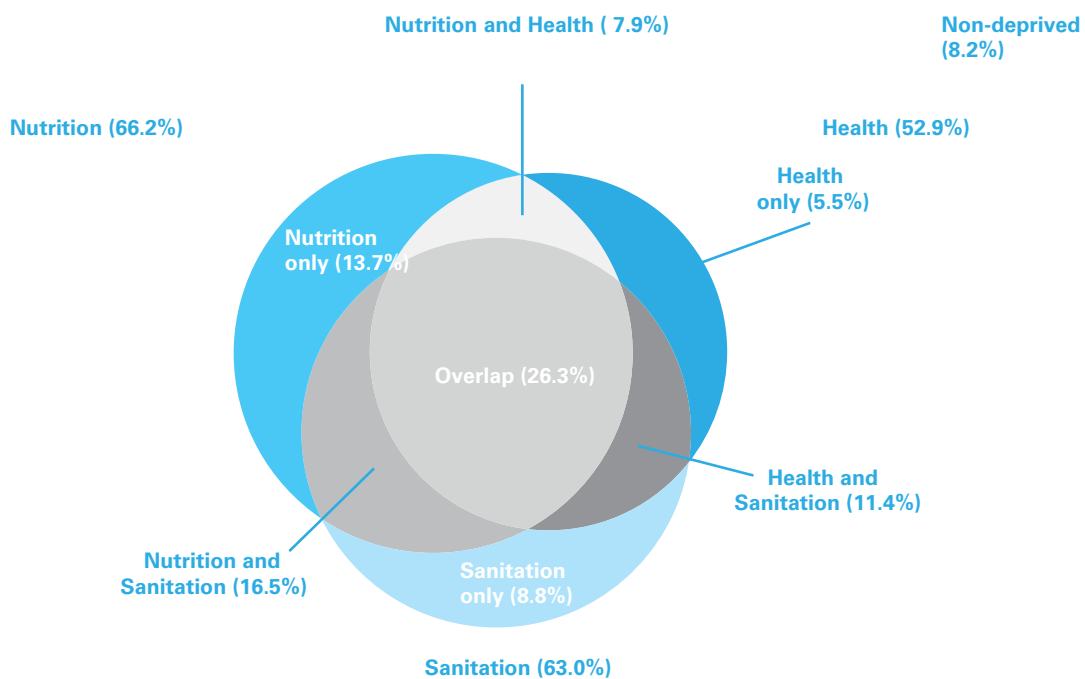
Figure 96: Deprivation rates for the combination of nutrition, health and sanitation by child mortality occurring in the household in the last 5 years, 0-23 months

Source: DHS 2014/15

Children living in households with at least one case of child mortality in the last 5 years



Children living in households with no case of child mortality in the last 5 years



Children living in households with at least one case of child mortality in the last 5 years

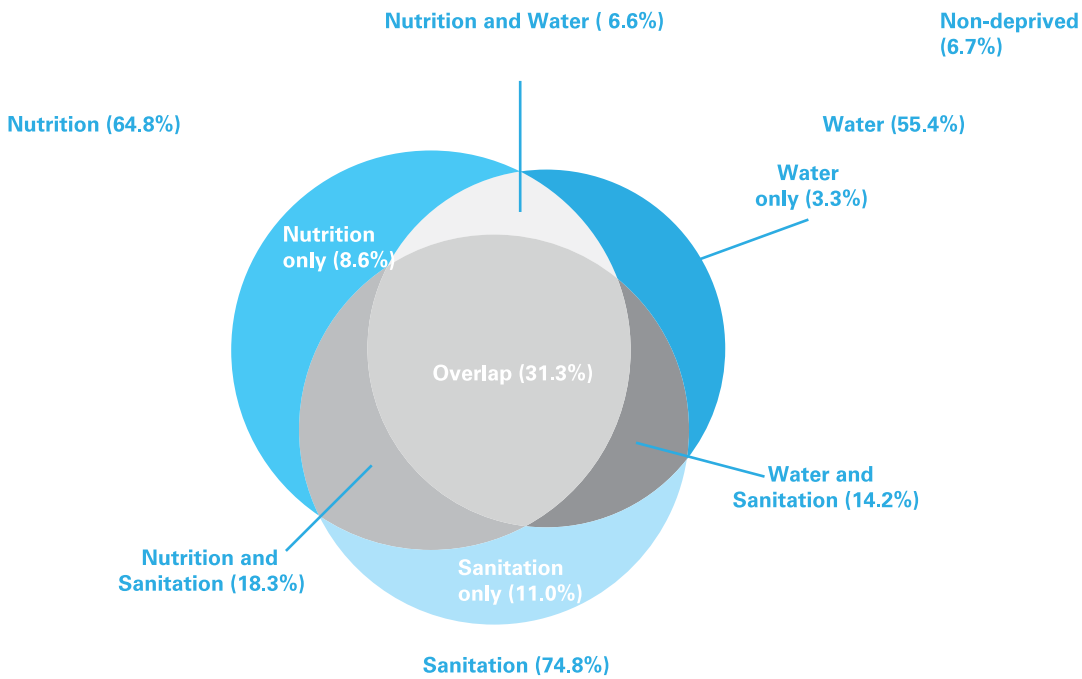


Figure 97: Deprivation rates for the combination of nutrition, water and sanitation by child mortality occurring in the household in the last 5 years, 0-23 months

Source: DHS 2014/15

Children living in households with no case of child mortality in the last 5 years

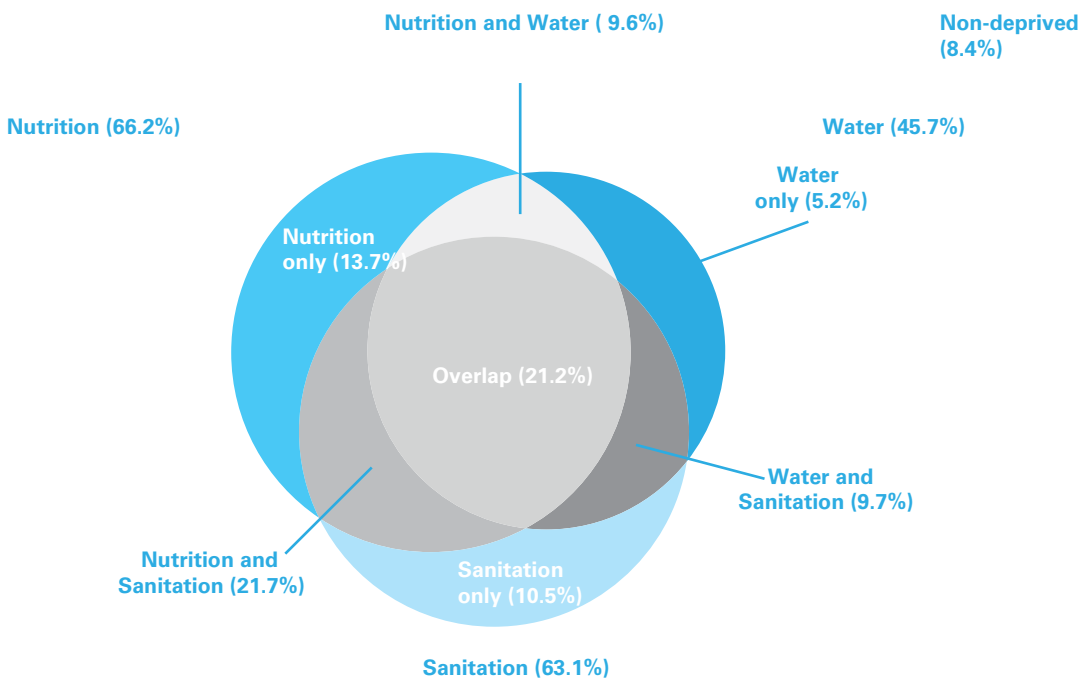
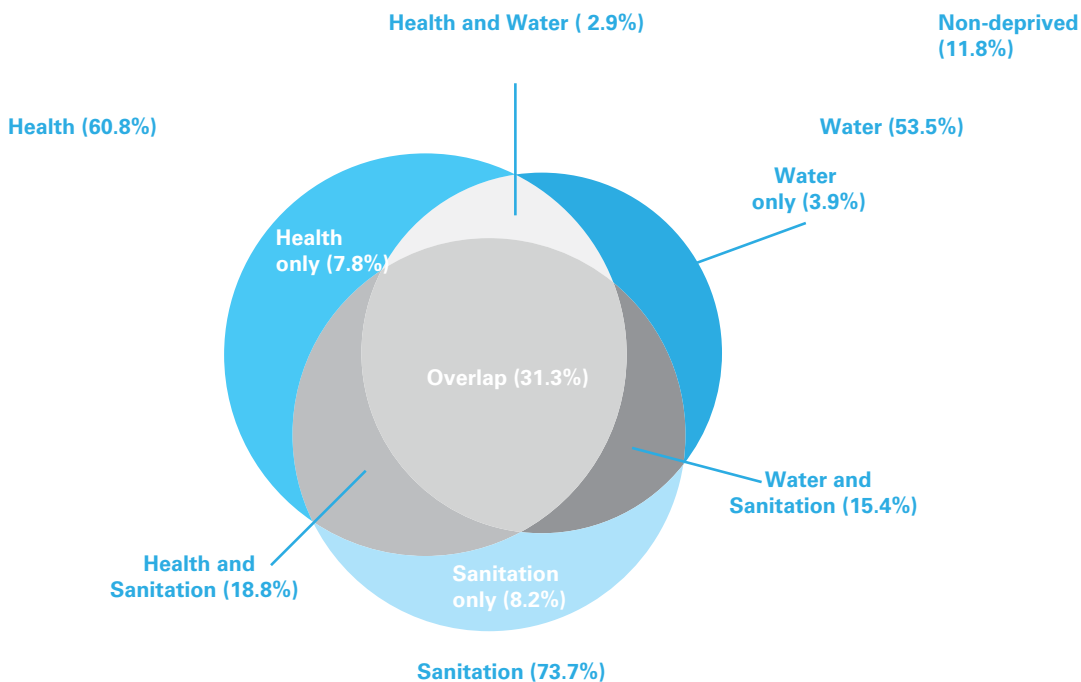


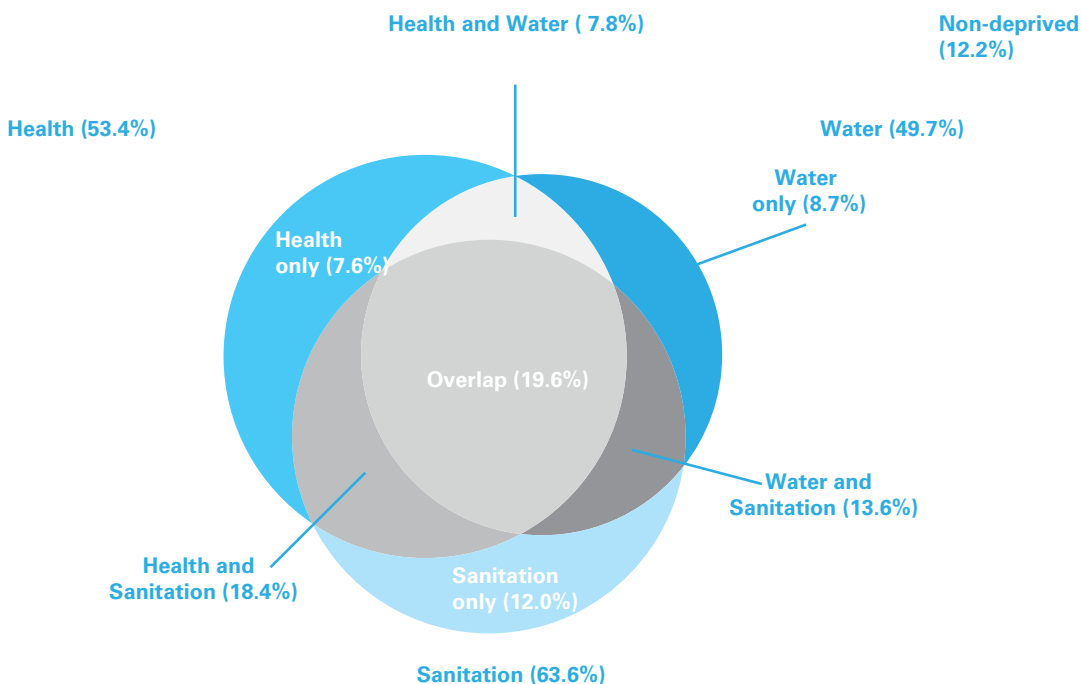
Figure 98: Deprivation rates for the combination of the dimensions health, water and sanitation by child mortality occurring in the household in the last 5 years, 24-59 months

Source: DHS 2014/15

Children living in households with at least one case of child mortality in the last 5 years



Children living in households with no case of child mortality in the last 5 years



Children living in households with at least one case of child mortality

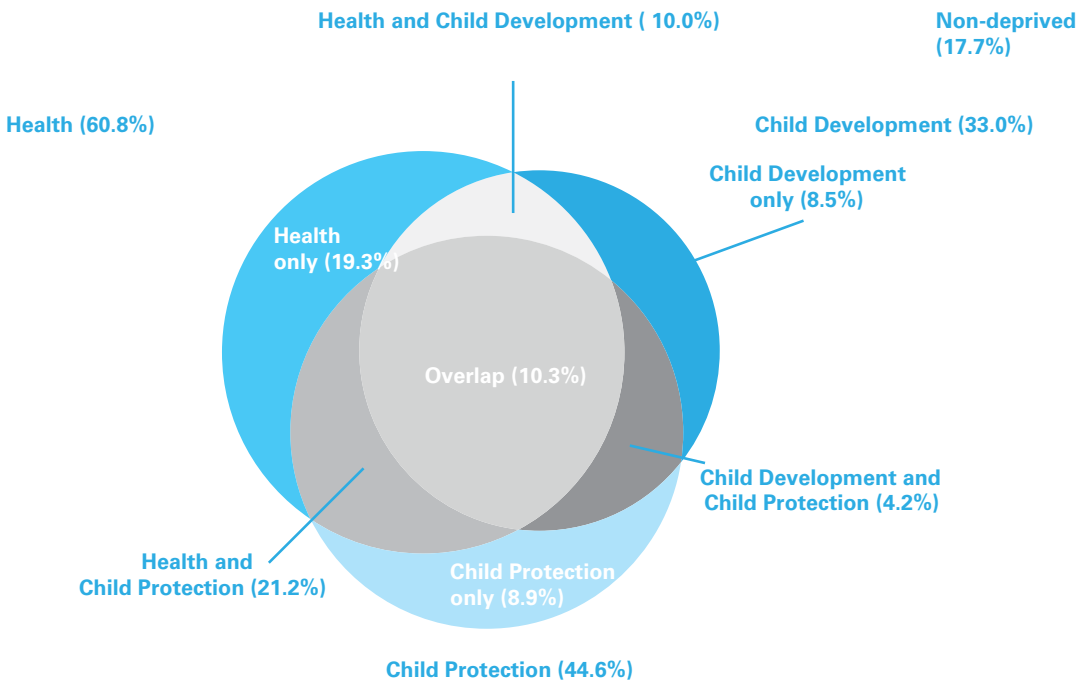
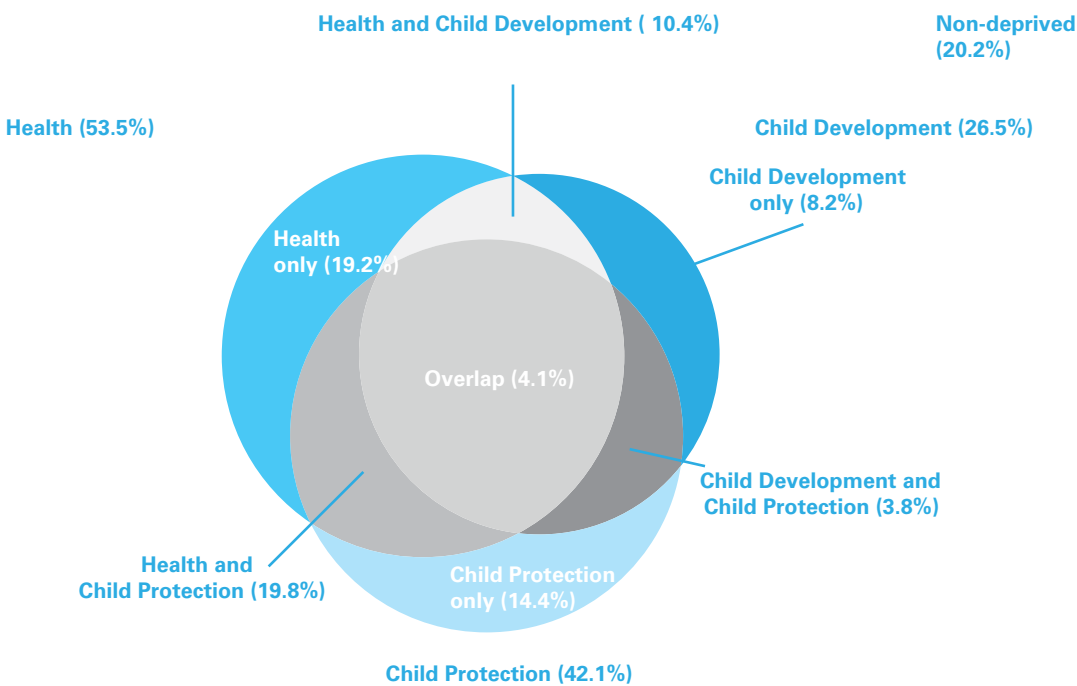


Figure 99: Deprivation rates for the combination of the dimensions health, child development and child protection by child mortality occurring in the household in the last 5 years, 24-59 months

Source: DHS 2014/15

Children living in households with no case of child mortality in the last 5 years





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CHAPTER 6: OVERLAP BETWEEN MONETARY AND MULTIDIMENSIONAL POVERTY

In this chapter, the overlap between monetary and multidimensional poverty amongst children aged 5-17 years is examined - as already highlighted, these two measures are globally the most prominent measures of poverty.

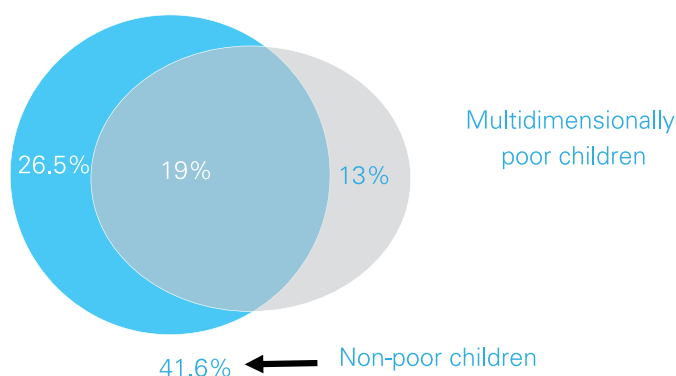
In the analysis below, the following applies:

- A child is monetarily poor when the child lives in a household where total household consumption per adult equivalent is below the national poverty line. Globally, the threshold selected for the poverty line is usually the international (currently \$1.90/day) or national poverty lines. In this chapter, the national poverty line (RWF 159,375 per adult equivalent per year – January 2014 prices) is used to measure the incidence of monetary poverty.
 - The incidence of poverty is the share of the population (in this case children aged 5-17 years) whose total consumption is below the poverty line and who cannot afford to buy a basic basket of goods (food and non-food).
 - A child is multidimensionally poor if he/she is deprived in at least three out of the five dimensions of wellbeing used in this study, as outlined in earlier chapters (the dimensions are health, education, water, sanitation and housing).
- There is considerable overlap between the two poverty measures (monetary and multidimensional (deprivations)) but the overlap is not complete (Figure 100):
- 13% of the children are deprived in at least three dimensions of wellbeing despite living in monetarily non-poor households.
 - 27% of children live in monetarily poor households but are not multidimensionally poor.

Figure 100: Overlap between monetary and multidimensional poverty for children aged 5-17 years

Source: EICV 2013/14

Children living in monetarily poor households



- The percentage of children who live in monetarily poor households (total per capita consumption is below RWF 159,375)
- The percentage of multidimensionally poor children where a multidimensionally poor child is defined as a child deprived in at least 3 out of 5 dimensions of well-being used in this study

These figures highlight that:

- Having access to monetary resources is not perfectly correlated with access to basic services. Although an extremely important measure, income/consumption alone cannot accurately capture or measure child poverty or children's wellbeing.
- Children have different developmental needs from adults and these cannot always be captured in monetary terms.
- The assumption for monetary poverty measures is that household income is equally distributed amongst its members, whereas this does not always hold true.
- There is a greater degree of overlap between the two poverty measures (monetary and multidimensional) in rural than in urban areas: 21% in rural areas are both monetarily and multidimensionally poor, compared to 7% in urban areas.
- In rural areas 29% of children are monetarily poor but not multidimensionally poor, which suggests that the basic services are geographically and financially accessible for 29% of monetarily poor rural children.
- The same is observed in Northern Province where around 35% of children are monetarily poor but not multidimensionally deprived.

The fact that more than a quarter of children (27%) in Rwanda living in monetarily poor households are not multidimensionally poor (deprived in three or more dimensions) shows the impact of government efforts to improve access to services for children living in monetarily poor households.

On the other hand, 13% of children are multidimensionally poor despite living in households that are above the poverty line. These households are not poor according to the national poverty line but they may not be able to meet their children's needs. There are also other factors besides wealth that can influence this situation. For example, children in non-monetarily poor households may not be properly fed (according to WHO standards on meal frequency and diversity) despite having the financial means (one reason could be lack of knowledge on key nutritional requirements, among others). In such instances, the key to addressing multidimensional child poverty would be to increase awareness and knowledge on feeding practices. Table 5 highlights the geographical disparities linked to overlaps in monetary and multidimensional poverty for children aged 5-17 years and demonstrates that:

- On the other hand, 17% of children in Southern Province are multidimensionally poor despite having access to monetary resources. Insufficient access to basic services or lack of information, or the frugal national poverty line, might account for this.



Table 5: Overlap between monetary and multidimensional poverty for children aged 5-17 years by area of residence and province

Source: EICV 2013/14

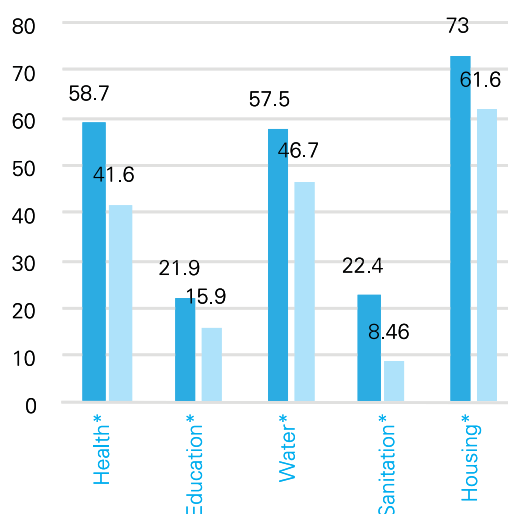
		Both monetarily and multi-dimensionally poor	Monetarily poor but multidimensionally non-poor	Multidimensionally poor but monetarily non-poor	Monetarily and multidimensionally non-poor
Area	Urban	7%	12%	9%	71%
	Rural	21%	29%	14%	36%
Province	Kigali City	12%	15%	8%	64%
	Southern Province	22%	23%	17%	38%
	Western Province	20%	30%	12%	38%
	Northern Province	17%	35%	11%	37%
	Eastern Province	19%	26%	13%	43%

Figure 101 below highlights the incidence of deprivations in each dimension used in the study, by the monetary poverty status and the wealth quintile of the households children live in. Of particular interest is that:

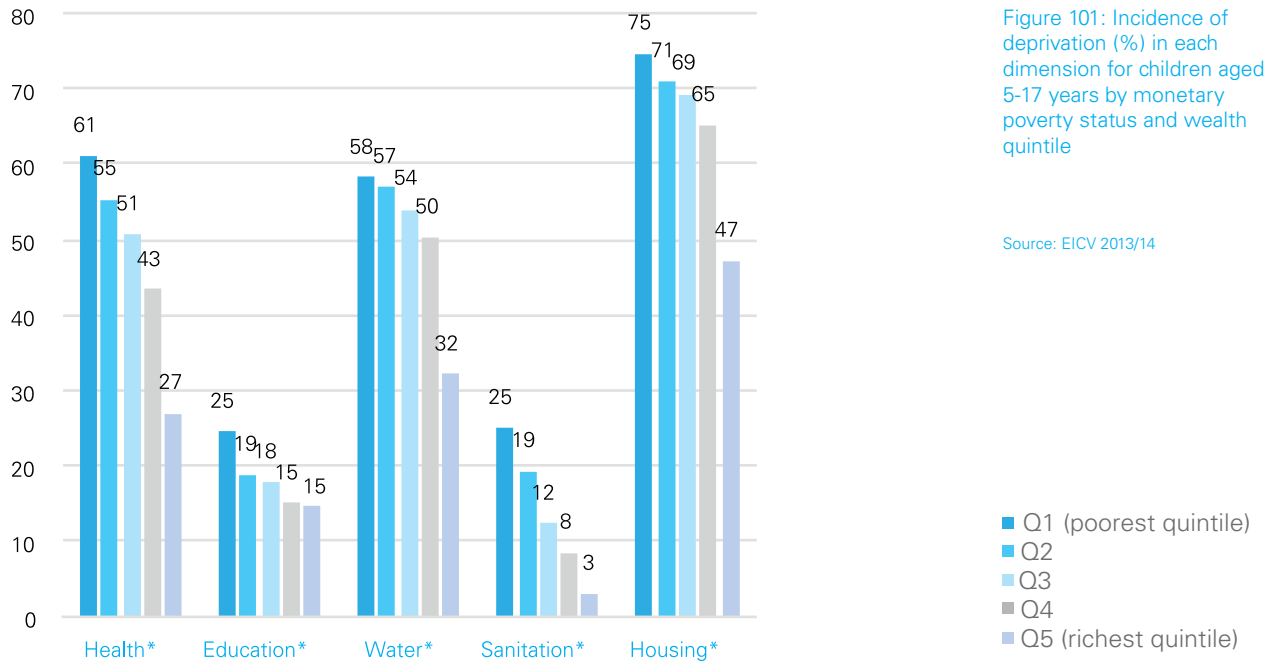
- A higher proportion of monetarily poor children are deprived in all dimensions, but it is notable that 61.6% of the monetarily non-poor children are also deprived in housing (the main lighting source is unimproved, and/or the mode of rubbish/garbage disposal is unimproved or the household is affected by environmental disasters).
- Similar results are observed for health and water: 41.6% of children in monetarily non-poor households are deprived in the dimension of health (not covered by health insurance, and/or health centre more than one hour away by foot).
- This further emphasizes that, although an important indicator, the national poverty line alone may not be an adequate indicator of child poverty in Rwanda (this is further corroborated by analysis based on wealth quintiles, where 47% of children in the richest quintile are deprived in housing, 32% are deprived in water and 27% are deprived in health - Figure102).

Figure 101: Incidence of deprivation (%) in each dimension for children aged 5-17 years by monetary poverty status and wealth quintile

Source: EICV 2013/14



Children living in poor hh (monetary poverty)
 Children living in non-poor hh (monetary poverty)



Source: EICV 2013/14

All that said, income is still an important determinant for multidimensional poverty since the distribution of deprivations is greater for children living in monetarily poor households (Figure 102), i.e. children in monetarily poor households are deprived in a higher number of dimensions.

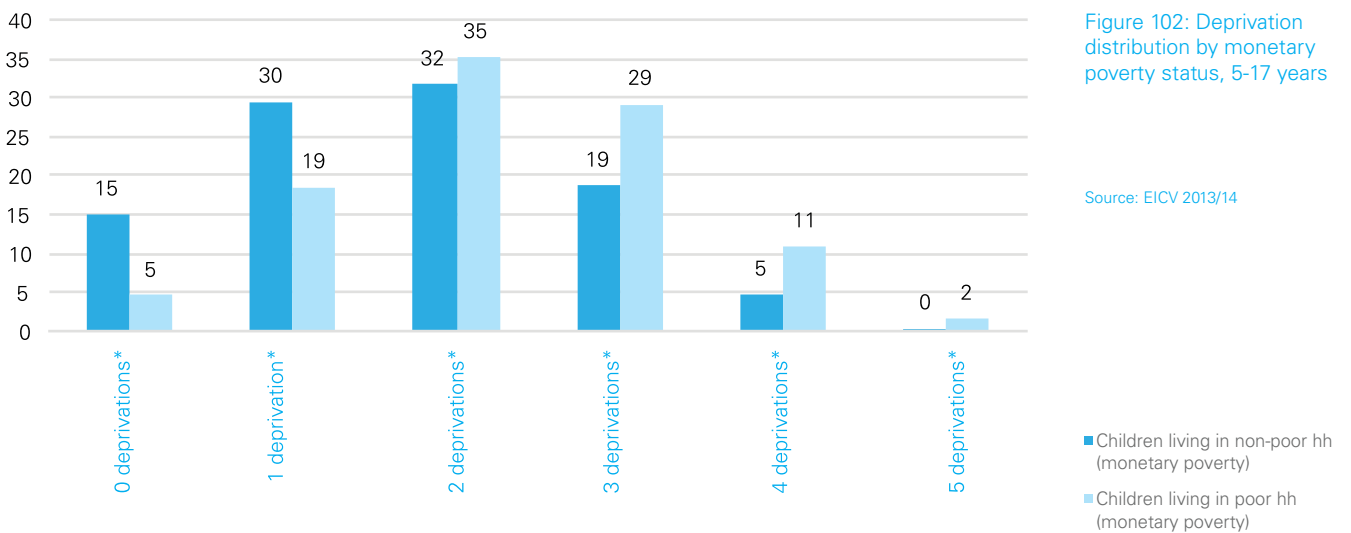


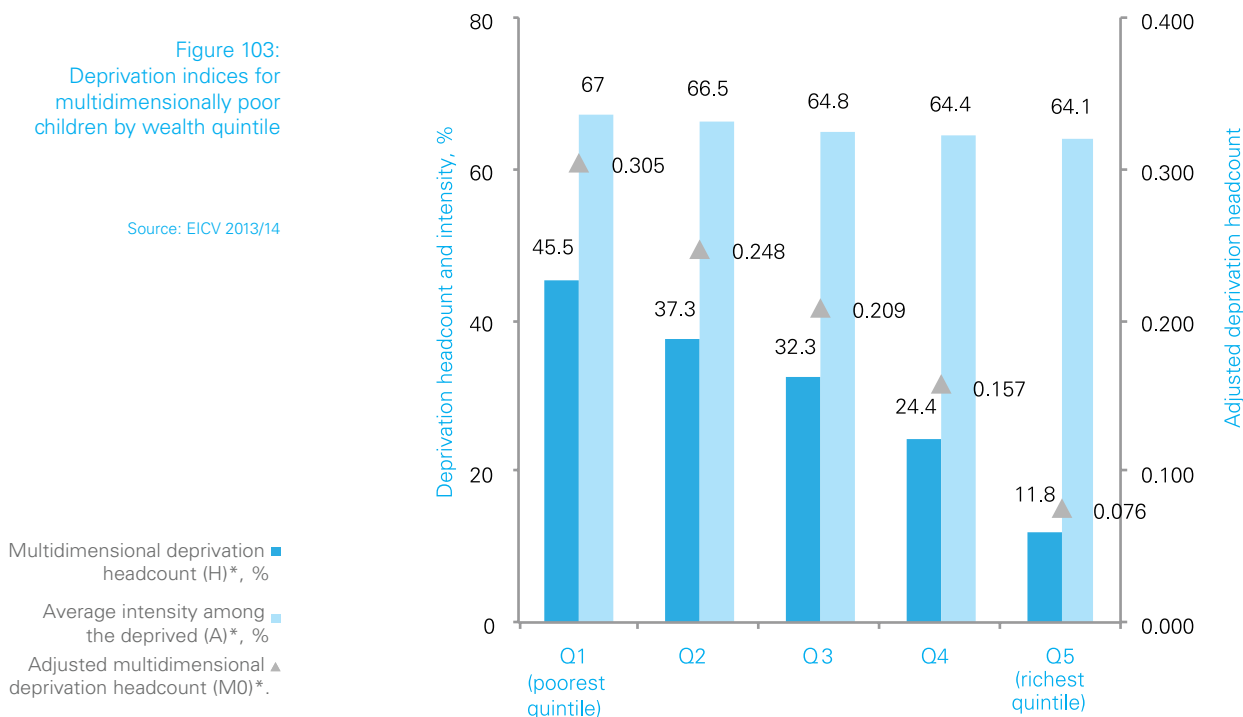
Figure 102: Deprivation distribution by monetary poverty status, 5-17 years

Source: EICV 2013/14

Focusing on wealth quintiles (a measure based on household assets, not households monetary poverty status), the multidimensional deprivation headcount (H), which is the proportion of children deprived in at least three dimensions, decreases significantly from 46% in Q1 (the poorest wealth quintile) to 12% in Q5 (the richest wealth quintile) – see Figure 103. However, less variation is observed in the average intensity of deprivation (A), which implies that the multidimensionally poor children in each quintile are almost equally poor. M0 combines the effect of the headcount and the intensity of deprivation to show overall deprivation level in the different quintiles. It is clear that richer quintiles have lower (i.e. better) levels of overall deprivation.

Figure 103:
Deprivation indices for
multidimensionally poor
children by wealth quintile

Source: EICV 2013/14



Multidimensional deprivation headcount (H)*, %
Average intensity among the deprived (A)*, %
Adjusted multidimensional deprivation headcount (M0)*.

Box: Social Protection (VUP) and Multidimensional Child Poverty

Social protection is a key strategy for poverty reduction in Rwanda. A central component of social protection is the Vision 2020 Umurenge Programme (VUP), which includes Direct Support, Public Works and Financial Services. Social protection programmes commonly benefit households with children, as poorer households have more children than wealthier households.

When comparing the situation of children (5-17 years) living in extremely (monetarily) poor households who participate in VUP schemes with those who do not, the analysis shows that there is not much difference in the deprivation levels of these households in the dimensions of water, sanitation and housing. However VUP households have lower deprivation rates for children in the dimensions of health (child not covered by health insurance, and/or lives in a household where the time to health centre is more than one hour on foot) and education (child does not attend school, and/or did not successfully complete primary education (15-17 years), and/or cannot read and write, or make simple calculations).

- 45% of children living in extremely poor households who participate in VUP schemes are deprived in health, versus 62.6% of children living in extreme poor households with no VUP support.
- 20.7% of children living in extreme poor households who participate in VUP schemes are deprived in education, versus 25.5% of children living in extremely poor households with no VUP support.
- The distribution of deprivations highlights that children living in VUP-participating households (extremely poor) suffer from fewer deprivations than those in non-participating households - a higher proportion of children from these households suffer from just one or two deprivations. The majority of children in extremely poor households not participating in VUP suffer from three to five deprivations.
- 47% of children living in extremely poor households without VUP support are multidimensionally poor (deprived in 3+ dimensions), versus 32% of children in VUP-participating households.
- In short, VUP support minimizes the number of deprivations children in extremely poor households suffer from - children in extremely monetarily poor households face less multidimensional poverty if supported by VUP.





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CONCLUSIONS 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 reduce income 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 39% 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 (to under 20%) by 2030. This study will be repeated over the next 15 years using forthcoming DHS and EICV datasets to monitor progress. The trend analysis of multidimensional child poverty from 2010 to 2015 reveals that Rwanda has made considerable progress over this period and that the right policies are in place: multidimensional child poverty rates fell from 52% to 40% for under-5 children and from 44% to 32% for children aged 5-17.

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.
- Multidimensional child poverty is observed even in monetarily non-poor households: improvements in income do not automatically lead to reductions in multidimensional child poverty (deprivations).
- Children in the **younger age groups** are particularly vulnerable: 57% of children aged 0-23 months are multidimensionally poor, and nearly all children in this age group are deprived in at least one dimension.
- **Multidimensional child poverty has decreased** significantly in recent years, but the proportion of extremely multidimensionally poor children (deprived in all dimensions) remained stagnant between 2010 and 2014/15 at just under 6%, and the average intensity (the number of deprivation a child experiences as a percentage of all possible deprivations) of deprivations did not change between 2010 and 2014/15, implying that children remain equally vulnerable in 2015 as in 2010.
- **Significant geographical disparities persist:** notable disparities were observed based on geographical location, with children from rural areas (particularly in Southern and Western Provinces) experiencing higher rates of multidimensional poverty.

- **Gender disparities are evident with the older age group:** no difference was observed by gender for children under five years, but gender disparity appears for older children, especially in education (where boys are more deprived than girls).
- Multidimensional child poverty is more prominent in female-headed households. Similarly, the absence of a father in a household is associated with higher multidimensional child poverty.
- Multidimensional child poverty is lower in households with higher levels of education of the child's mother and of the household head.
- Stunted children and those living in households that had experienced at least one case of child mortality in the previous five years tend to suffer from more multiple deprivations than non-stunted children and those from households without child mortality.
- Children living in extremely monetarily poor households **face less multidimensional poverty if supported by the VUP Social Protection programme.**

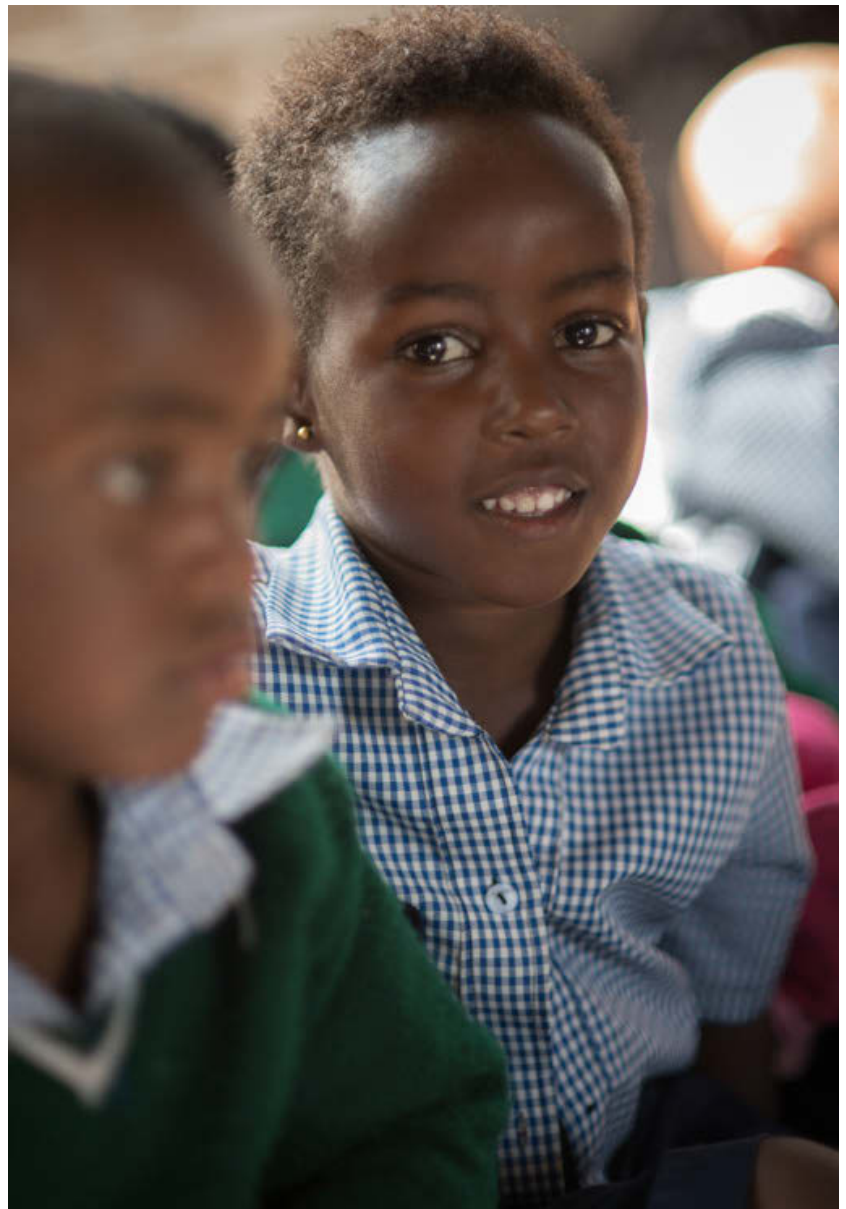
Based on the comprehensive findings outlined in the report, the following policy recommendations are made to address multidimensional child poverty in Rwanda:

Cross-sectoral integration in policies and programmes

As highlighted, the majority of children in Rwanda experience multiple and overlapping deprivations. More than half (55%) of under-5 children and 32% of children aged 5-17 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.

Looking into the specific age groups, coordinated policy packages to address deprivations in health, water and sanitation for children aged 24-59 months, especially in rural areas, can be further promoted. For children aged 0-23 months, nutrition, sanitation and health should be the focus. And for older children (5-17 years), a multi-sectoral approach for reducing deprivations in education, water and housing can be further strengthened.

These integrated packages can be further promoted along with current social protection programmes, as the analysis shows the positive impact of the VUP Social Protection programme in reducing the number of deprivations faced by children in extremely monetarily poor households.



Targeting the most vulnerable children in Rwanda with integrated responses

Although multidimensional child poverty has decreased significantly in recent years, the proportion of extremely multidimensionally poor children (deprived in all dimensions) has remained stagnant – implying further efforts are required to target and reach these children. The underlying causes of multidimensional child poverty transcend one domain and require an integrated response. 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, particularly Southern and Western Provinces, who are the most deprived in all dimensions of non-monetary poverty and are most likely to experience multidimensional deprivations.
- Multidimensional poor children living in pockets of urban areas: although the concentration of multidimensionally poor children is clearly in rural areas, for children experiencing multiple deprivations in urban areas, the intensity of their deprivations is similar to those of multidimensionally poor children in rural areas.
- 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.

Leveraging data on children for social policies

The comprehensive MODA analysis would not have been possible without the rich data available in DHS and 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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