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CHILD POVERTY REPORT 2023

Based on Living Conditions Monitoring Survey 2022 data

OFFICIAL STATISTICS OF ZAMBIA
Republic of Zambia

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Based on Living Conditions Monitoring Survey 2022 data

EXECUTIVE SUMMARY

This report looks at changes in multidimensional child poverty in Zambia since 2015, using the Multiple Overlapping Deprivations analysis (MODA) index. The MODA index looks at child wellbeing across 7 dimensions: nutrition, health, education, water, sanitation, housing and access to information. A child is considered multidimensionally poor if s/he does not meet the minimum standard of wellbeing in at least 2 dimensions. The MODA index uses a so-called life-cycle analysis, meaning that it considers indicators that are relevant for the age-specific developmental needs of the child.

Child poverty overview

Multidimensional child poverty is high in Zambia. 6.6 million Zambian children (70.6%) are multidimensionally poor, meaning that they suffer from deprivations in 2 or more dimensions of wellbeing simultaneously. 2.7 million children, or 28.7% of all children in Zambia, experience deprivations in 4 or more dimensions simultaneously. Only a small minority of Zambian children (11.1%) are deprivation-free, based on the indicators included in the MODA index.

The disaggregation by geographic areas shows that rural children tend to be worse off than urban children: More than half of all urban children do not experience multidimensional poverty (i.e. deprived in 0 or 1 dimension only) compared with 13.2% in rural areas. The highest rates of multidimensional child poverty are found in Western Province where more than 9 out of 10 children have deprivations in 2 or more dimensions of wellbeing.

Children of uneducated parents and female-headed households are significantly more likely to experience multidimensional poverty than other children. Children who cumulate several risk factors are particularly vulnerable. For instance, a child in a large rural household headed by an uneducated female has, on average, 3.8 deprivations, compared to just 1.1 for children who do not present any of these risk factors.

Changes in child poverty since 2015

The data shows that 65% of Zambian children experience monetary poverty and 70.6% of Zambian children are deprived in 2 or more dimensions of wellbeing simultaneously (up from 60.3% and 66.6%, respectively in 2015).

There has been a statistically significant increase in multidimensional child poverty in urban areas since 2015. Increases in the rural and national child poverty rates are smaller and not statistically significant. This result mirrors the trends in monetary poverty. The increase in child poverty is particularly notable in children aged 5 and above.

The increase in urban child poverty is driven mostly by deprivations in health (mostly not consulting a doctor while sick) and access to information, which is measured by ownership of TV, radio, phones, computers. Both dimensions are strongly correlated with monetary poverty, and primarily reflect a deterioration in the financial situation of urban households. Rural children, meanwhile, have experienced small improvements in access to water, sanitation and housing. Changes in child poverty at the provincial level were not statistically significant.

The disaggregation by sex shows that the multidimensional child poverty affected girls worse than boys. Children living in female-headed households have also seen a sharper increase in multidimensional child poverty than those living in male-headed ones.

Single deprivation analysis

The single-deprivation analysis shows that rural children are worse off than urban children in all dimensions of wellbeing considered in the MODA. The disaggregation by gender shows that boys are more likely than girls to be deprived in education and nutrition, which explains the slightly higher rate of multidimensional poverty for boys.

Children with disabilities have more deprivations in all dimensions of well-being, including household-level deprivations, suggesting that there is a link between household poverty and child disability. Children of unmarried mothers, on the other hand, are less likely to be deprived in child-specific indicators, such as health and nutrition, even though they have higher rates of household-level deprivations, such as housing.

Multidimensionally poor children are also significantly more likely to be exposed to other violations of child rights, such as child marriage or child labour, for instance.

Multiple deprivations analysis

The analysis of overlap between deprivations show that poverty patterns vary across children and across the country. In Central and Northern provinces, for instance, child poverty is widespread (many poor children), but not particularly intense (relatively few deprivations per child). In Muchinga province, on the other hand, child poverty is both widespread and intense.

Territorial factors related to the geographic location of the household are dominant when analysing the factors correlated with child poverty. This reflects the importance of issues related to access to basic services, which in turn is related to infrastructure and other physical barriers to access.

The multivariate analysis of correlation also confirms that parents' education and child disability remain key determinants of child poverty, even after controlling for differences in household wealth/consumption and other confounding factors.

MODA vs. monetary poverty

Conventional measures of poverty focus on total household consumption. As such, they do not take into account the internal distribution of resources within the household. Nor do they consider non-financial constraints, which might affect health, education and nutritional outcomes. These issues are particularly relevant for children, who do not control household resources, and have a specific set of complex developmental needs. Despite these differences, both the monetary and multidimensional poverty indices in Zambia concur in showing a sharp increase in urban poverty since 2015.

Even though overall levels of monetary poverty and multidimensional child poverty are strongly correlated, there are significant discrepancies when looking at specific subgroups of children. Over a third of MODA-poor children in urban areas live in households that are considered non-poor in monetary terms. This may be due to intra-household discrimination or other child-specific factors, which are not visible when measuring poverty at the household level.

The disaggregation by subgroup shows that children of unmarried and uneducated mothers are significantly more likely to be money-poor than MODA-poor. This, again, points to the possible existence of successful mitigation strategies on part of these mothers, which helps to partly compensate for their financial disadvantage.

The comparisons of consumption patterns show spending on alcohol and tobacco is strongly correlated with child deprivations in households that are not financially constrained (non-poor). Similarly, education spending is associated with significantly lower deprivations among children in these households. This, again, shows the importance of looking not only at the amount of money available to a household, but also at how that money is spent on the wellbeing of children.

FOREWORD

The 2022 Child Poverty Report is a joint effort between the Government of the Republic of Zambia and UNICEF. We share a commitment to promoting the rights and well-being of our children and ensuring that no child is left behind. In this report, we assess the welfare of Zambian children and understand the vulnerabilities and deprivations they face, whilst recognizing areas of progress being made. Each child deserves an opportunity to thrive, therefore, it is important to address their individual barriers and contextualize our support based on their areas of deprivation, age, geography and other disaggregations.

This report is based on the 2022 Living Conditions and Monitoring Survey (LCMS) dataset, which was also used to generate monetary poverty estimates. The LCMS and other surveys provide a crucial stepping-stone to creating evidence-based policy and adequate service delivery. The Zambia Statistics Agency is committed to providing these statistics, deriving its expanded mandate from the Statistics Act of 2018, aimed at developing an integrated national statistical system, and the Second National Strategy for the Development of Statistics (NSDS2, 2023-2027). As you may be aware, the NSDS2 has been mainstreamed into Zambia's Eighth National Development Plan. For the analysis presented here, a standard methodology which draws on the international framework of child rights was used to assess the situations of children across seven dimensions of well-being: a) nutrition; b) health; c) education; d) information; e) housing; f) sanitation; and g) water. The report provides a comprehensive analysis of both monetary and non-monetary child poverty. This methodology is aligned to the global approach of the multiple overlapping deprivations analysis and has, notably, for the first time been done at same time with the monetary poverty analysis.

The data shows that 65% of Zambian children experience monetary poverty and 70.6% of Zambian children are deprived in 2 or more dimensions of wellbeing simultaneously (up from 60.3% and 66.6%, respectively in 2015). Regular reporting on poverty is required to achieve the Eighth National Development Plan's Development Outcome 4 on poverty and vulnerability reduction. This data will, therefore, help provide key indicators for targeting and monitoring progress towards attainment of this critical development outcome.

This analysis is the fruit of the successful collaboration of our institutions with other partners. We extend our sincere appreciation to Dr Sebastian Leander da Silva as lead author of the report and to the World Bank, SIDA and the UN in Zambia for their technical and financial support in conducting the LCMS. Gratitude also goes to ZamStats technical and field staff for their commitment to this work. We also thank sector ministries for providing inputs and contextual knowledge that has enriched this report.

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LIST OF ABBREVIATIONS

EMIS Education Management Information System
LCMS Living Conditions Monitoring Survey
MODA Multiple Overlapping Deprivations Analysis
CRC Convention on the Rights of the Child

1 INTRODUCTION

This study examines the situation of Zambian children across seven dimensions of wellbeing, that are essential to ensure the survival and development of children: a) nutrition; b) health; c) education; d) information; e) housing; f) sanitation; and g) water. The analysis uses the Multiple Overlapping Deprivations Analysis (MODA) methodology, based on a Z-MODA index that is tailored to the Zambian context. The report looks at the interaction and overlap between different deprivations to identify the most vulnerable children, as well as the risk factors contributing to increasing children's vulnerability.

The MODA index is designed to capture key issues affecting children's wellbeing and development across 7 crucial dimensions of wellbeing. Different indicators are used for different age groups, to capture children's evolving needs across their childhood. Unlike conventional measures of monetary poverty, the MODA index focuses on each single child, therefore allowing identification of for instance, issues related to intra-household discrimination based on gender or disability. By focusing on wellbeing outcomes, rather than income or consumption, it also allows identification of cases in which non-financial constraints (cultural, environmental, or social) impede the full realisation of children's rights.

This study uses data from the 2022 Living Conditions Monitoring Survey (LCMS). It is the second in the child poverty series being conducted in Zambia. Due to changes in the LCMS questionnaire, it has not been possible to replicate the 2015 Z-MODA index. However, new comparable indicators have been identified to enable a comparability analysis for the period 2015-2022.

Firstly, the report provides an overview of the number, location, and characteristics of poor children in Zambia. Secondly, the report looks at changes in child poverty since 2015. Thirdly, the reports look at deprivations one by one, the single deprivation analysis, to identify the issues driving child poverty in Zambia. Fourthly, the report looks at the overlap and interaction between deprivations, the multiple deprivation analysis. Finally, the report contrasts MODA poverty with monetary poverty to better understand nature and drivers of child poverty.

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2 METHODOLOGY

This study uses the Multiple Overlapping Deprivations Analysis (MODA) methodology, which was developed by UNICEF's Innocenti Research Centre (de Neubourg et al. 2012; de Neubourg et al. 2014). The MODA methodology uses child-specific indicators of wellbeing and makes it possible to see how different deprivations overlap for a given child.

The first step of the MODA approach consists of identifying the dimensions of wellbeing defined by the Convention on the Rights of the Child (CRC) (see Table 1 below). Secondly, specific indicators need to be selected to measure relevant deprivations in each dimension of wellbeing. A child is considered deprived in a dimension of wellbeing if s/he has one or more deprivations in that dimension.

The MODA uses a counting approach, counting the number of dimensions in which a child has deprivations. Each dimension of wellbeing has equal weight, reflecting the fact that all dimensions are considered equally important (see de Neubourg et al. 2014).

This study uses the updated guidelines for measuring child poverty (UNICEF 2020). The main feature of the updated guidelines is that it centres on material deprivations and, therefore, excludes deprivations that are related to behavioural issues (e.g. breastfeeding) or juridical constraints (e.g. birth registration). The new MODA index therefore excludes the child protection dimension, which had been included in the previous child poverty report for Zambia.

This study looks at two different aspects of the MODA index. The first is the incidence of multiple deprivations (H), that is, the proportion of children who suffer from deprivations in 2 or more dimensions of wellbeing simultaneously. This is called the multidimensional poverty headcount. The second aspect considered is the intensity of deprivations (A), that is the average proportion of indicators or dimensions in which a child is deprived. This allows us to distinguish, for instance, between a case in which many children suffer from few deprivations, and another in which a small number of children experience many deprivations.

MODA methodology builds on existing approaches of multidimensional poverty measurement such as the UNICEF's Global Study on Child Poverty and Disparities (Gordon et al.,2003; UNICEF, 2007) and Oxford Poverty and Human Development Initiative's (OPHI) Multidimensional Poverty Index (Alkire and Santos, 2010; Alkire and Foster, 2011). However, some specific features distinguish MODA methodology in the measurement of child deprivation:

- It is child-centered, with the child as the unit of analysis, rather than the household, since children experience poverty differently from adults especially regarding developmental needs;
- It underlines the use of individual level data when possible so that any differences across gender, ages and/or within households may be observed;
- It adopts a life-cycle approach, including different dimensions and indicators for each age group to age-specific needs at different life stages: early childhood, primary childhood, and adolescence.
- It applies a whole-child oriented approach by measuring the prevalence and the depth of deprivations each child experiences simultaneously, revealing the most vulnerable children;
- It broadens the scope of sector-based approaches through overlapping deprivation analyses and generating profiles in terms of the geographical and socio-economic characteristics of the (multiple) deprived children, thereby highlighting areas of concern for effective and better targeted policy design; and
- It combines multidimensional deprivations and monetary poverty analysis simultaneously for each child whenever the data used has information on both.

LCMS Survey

This study uses data from the most recent Living Conditions Monitoring Survey (LCMS). Data collection took place in June and July 2022. The survey covers 8,500 households, across 420 enumerations areas. The survey is stratified to be statistically representative across 3 urban and 4 rural areas: Urban – Low, Medium, High cost; Rural – Small, Medium, Large scale farms and non-agricultural areas.

The survey includes information on individual household members, making it especially relevant to assess the wellbeing of individual children. 21,073 children are contained in the LCMS 2022 sample. The survey covers all relevant dimensions of wellbeing included in the MODA index, including anthropometric measurements of child nutrition. Importantly, the LCMS also measures monetary poverty, and can therefore be used to analyse the differences between monetary and multidimensional poverty.

The LCMS 2022 survey is, in most aspects, identical to the LCMS 2015 survey. It is therefore suitable for analysing trends in child poverty and monetary poverty. However, changes in the questionnaire, as well as survey implementation issues, meant that the 2015 index could not be exactly replicated in 2022. The index has been updated as described in the next section to estimate a new child poverty level, using the updated UNICEF guidelines, as well as a consistent 2015-2022 trend.

The 2022 LCMS had some limitations that may affect the results presented in this report. The monetary poverty figures were affected by changes in the food consumption questionnaire. For the present analysis, we used a single imputed vector that most closely approximates the official monetary poverty and inequality estimates published in the official LCMS report. The monetary poverty figures reported in this document may therefore differ slightly (first decimal place) from those published in the official LCMS report.

Secondly, the nutrition data from the LCMS survey had limitations. The quality review conducted by UNICEF showed issues related to age-heaping, as well as a number of outliers in the nutrition data. It is important to note that nutrition data is generally prone to data quality issues and therefore surveys like the Demographic and Health Surveys train dedicated biomarker technicians to collect anthropometry data to try and reduce the measurement errors. Following consultation with ZamStats and UNICEF, the decision was taken to include nutrition indicators (stunting and wasting) with appropriate caveats, as (a) the nutrition estimates are still within a plausible range, and (b) the main objective of this analysis is not to produce official nutrition statistics, but to highlight overlaps between deprivations in different dimensions of wellbeing. Underweight was not included due to overlap with the aforementioned statistics.

Z-MODA Index

The general MODA methodology is meant to be adapted to specific national contexts, to ensure that the index is relevant to the specific context of children in each country. The so-called Z-MODA index is the Zambia-specific declination of the global MODA index. It includes the same 7 dimensions of wellbeing as the global MODA index: nutrition, health, education, and housing as well as access to water, sanitation, and information.

Annex B below summarises the specific indicators that were used to measure child wellbeing across these 7 dimensions, as well as the thresholds used to distinguish deprived from non-deprived children in each dimension. The table in the annex details the changes that have been made compared to the 2015 index, as well as the motivation for the changes.

Table 1 summarises the age coverage of the different indicators included in the MODA index. Some indicators, like insufficient dietary diversity, had to be modified from the global standard definition due to (a) missing information in the LCMS, and (b) the need to consider the distribution and interaction between indicators to get a usable MODA index.

Table 1: Coverage of MODA indicators by age group

DIMENSION/ Indicator	Unit of measurement	0-3 months	4-12m	13-59m	5-6 years	7-13y	14-17y
NUTRITION							
Weight for Height (Wasting)	child		X	X			
Stunting	child		X	X			
Insufficient Dietary diversity	household			X	X	X	X
HEALTH							
Did not consult while sick/injured	child	X	X	X	X	X	X
No medical facility	household						
EDUCATION							
Compulsory School Attendance	child					X	
Grade-for-Age	child					X	X
Primary School Attainment	child						X
WATER							
Drinking water source	household						
Water treatment	household						

Distance to water	household
SANITATION	
Access to improved sanitation	household
Garbage disposal	household
Shared toilet	household
HOUSING	
Overcrowding	household
Housing Material (Floor and roof)	household
INFORMATION	
Availability of Information Devices	household

The analysis of multiple and overlapping deprivations requires the definition of dimensions and indicators of child well-being, deprivations thresholds and age groups which were chosen to reflect and understand the specific context of Zambia. Children's rights enshrined in the Convention on the Rights of the Child (CRC) (1989), in conjunction with the World Summit on Social Development (1995) and the Millennium Development Goals (MDG) (2000), have guided the construction of a core set of dimensions that are critical to contribute to child's development irrespective of the country of residence, socio-economic status, or culture.

In pursuit of contextualising the MODA, a workshop was conducted in Kabwe, Zambia in March 2023 with participants from ZamStats to validate and adapt the indicators to the local context.

Following the life-cycle approach, the dimensions, indicators and thresholds used to assess deprivations of children in Zambia have therefore been defined for different age groups to reflect the different needs of early childhood, primary childhood, and adolescence (see Appendix B for details of these parameters).

In the analysis, for each dimension, a child is identified as deprived in a dimension if he/she is deprived in at least one of the indicators of the dimension. Thus, following the union approach, all the indicators included in a dimension are equally weighted as they are selected based on the assumption that they are equally important for child well-being. Each of the 7 dimensions of wellbeing included in the index are considered equally important and therefore weight 1/7 of the final index.

3

CHILD POVERTY OVERVIEW

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3 CHILD POVERTY OVERVIEW

Key findings: Child poverty overview

1. **70.6% of Zambian children are deprived in 2 or more dimensions of wellbeing simultaneously.**
2. **Rural children tend to have significantly more deprivations than urban children.**
3. **Muchinga and Western provinces have the highest incidence of multidimensional child poverty.**
4. **Children of uneducated or female-headed households are more likely to have multiple deprivations than other children, especially if they live in large rural households. Children who cumulate these 4 risk factors have 3 times more deprivations than children who do not present any of these risk factors.**

This section presents the main findings of the multidimensional child deprivation analysis for Zambia. The chapter first looks at the number of multi-dimensionally poor children in different age groups. Secondly, the chapter looks at the geographic distribution of deprivations across the country. Thirdly, we look at different subgroups of the population, to identify the most vulnerable children, who cumulate many simultaneous deprivations.

How many poor children?

Figure 1 below shows the distribution of deprivations across children in Zambia. The graph shows the percentage of children experiencing exactly 0 to 6 deprivations simultaneously. **The graph shows that only a small minority of Zambian children (11.1%) are deprivation free,** meaning that they do not suffer from any of the deprivations included in the MODA index.

At the other extreme, 2.8% of children suffer from deprivations in 6 dimensions of wellbeing simultaneously. While any one deprivation constitutes a violation of children's rights, the accumulation of simultaneous deprivations has an increasingly detrimental effect on the child's wellbeing and vulnerability.

In absolute terms, this represents **6.6 million children, out of a total population of 9.4 million children, who suffer from deprivations in 2 or more dimensions of wellbeing** at the same time. 2.7 million children suffer from deprivations in 4 or more dimensions simultaneously. On average, Zambian children suffer from deprivations in 2.5 dimensions of wellbeing simultaneously.

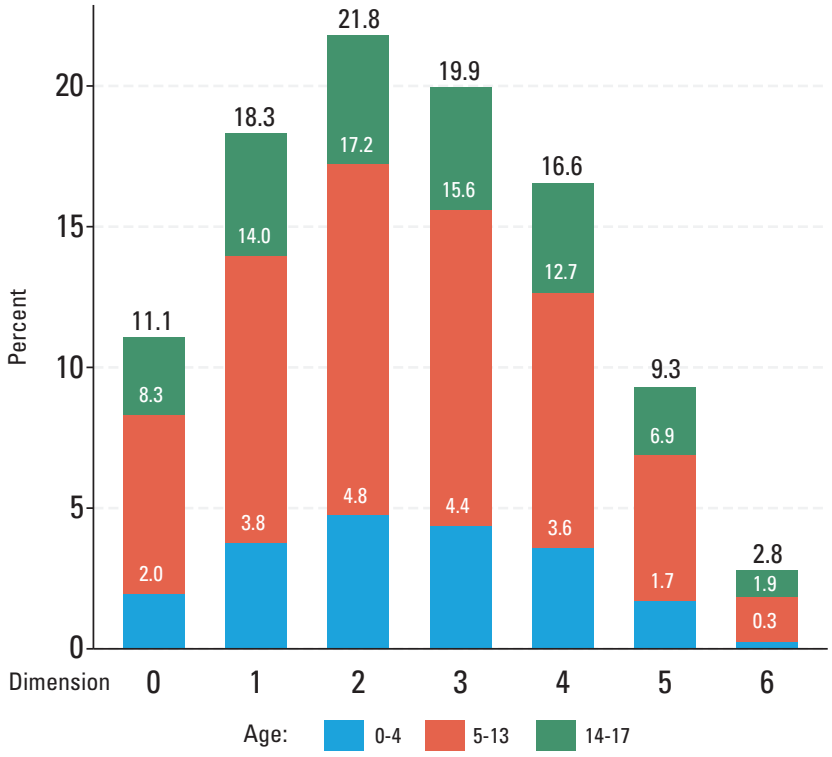

Figure 1: Distribution of the number of deprivations for all children aged 0-17, by age group

Source: Authors' calculations using Zambia LCMS 2022

Where are the poor children?

This subsection looks at where in the country the poor children can be found. Figure 2 below shows the distribution of deprivations in urban and rural areas[1]. At the bottom of the graph, are children experiencing no deprivations, whereas the top shows children experiencing deprivations in 6 dimensions of wellbeing simultaneously.

The graph clearly shows that **the distribution of deprivations is very unequal across urban and rural areas**. More than half of urban children do not experience multiple overlapping deprivations, meaning that they have no deprivations or deprivations in only one single dimension of wellbeing. By contrast, almost two thirds of rural children suffer from deprivations in 3 or more dimensions of wellbeing simultaneously. Only a small minority of rural children (13.2%) do not experience multiple overlapping deprivations (0 or 1 dimensions).

[1] To ensure comparability, the confidence intervals take into account the demographic composition of the samples, to account for the fact that urban children tend to be younger, and therefore have fewer indicators across which they can experience deprivations.

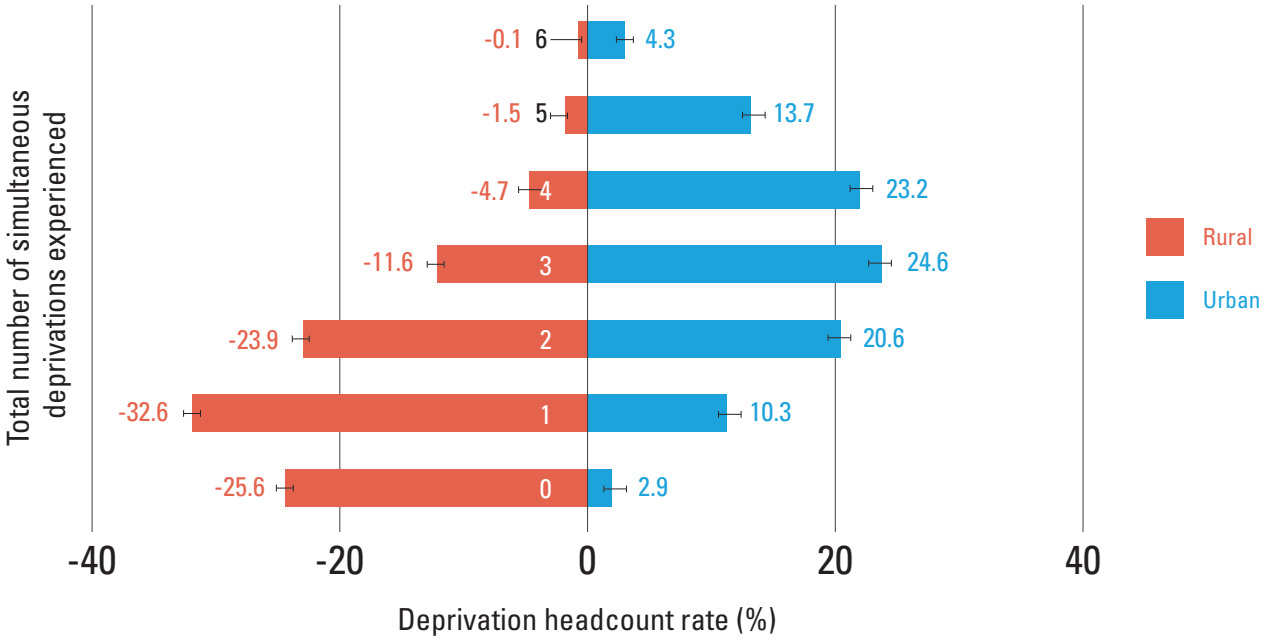

Figure 2: Deprivation distribution for children aged 0-17, by area of residence

Source: Authors' calculations using Zambia LCMS 2022

On average, rural children experience deprivations in 3.2 dimensions of wellbeing simultaneously, compared to 1.4 dimensions for urban children.

65% of Zambian children experience monetary poverty, meaning that they live in households whose total consumption is not sufficient to meet the minimum age-adjusted caloric requirements plus essential non-food needs of the household (see section 2 for more details on the difference between monetary and MODA poverty indices)[2]. A similar number of children (70.6%) experience multiple overlapping deprivations, meaning that they suffer from deprivations in 2 or more dimensions of wellbeing simultaneously.

Despite the overall similarities between monetary and MODA poverty rates, the map below shows that the geographic distribution of poverty is quite different, depending on the index used. While both measures agree in identifying Lusaka and Copperbelt as the two regions with the lowest incidence of child poverty, they disagree as to which regions have the highest incidence of child poverty. According to the MODA index, the worst-off region is the Western region, where 9 out of 10 children suffer from deprivations in 2 or more dimensions of wellbeing. The Western region stands out particularly in terms of sanitation and housing deprivations (see Table 4 below). The Western province does not stand out as much, however, in terms of monetary child poverty, being ranked third out of 10 provinces.

Only Luapula and Northern provinces have fewer children suffering from multidimensional poverty than children living in money-poor households. In the former province, this is due to comparatively good performance on child health indicators, whereas the latter province has lower-than-average deprivations in nutrition (see Table 2 below). Both provinces perform well on housing. These differences show that monetary poverty does not automatically translate into multidimensional poverty and that it is possible to mitigate the impact of adverse economic circumstances on children's wellbeing, by implementing targeted social policies. Subsequent sections will help us to understand the nature and possible causes of these differences.

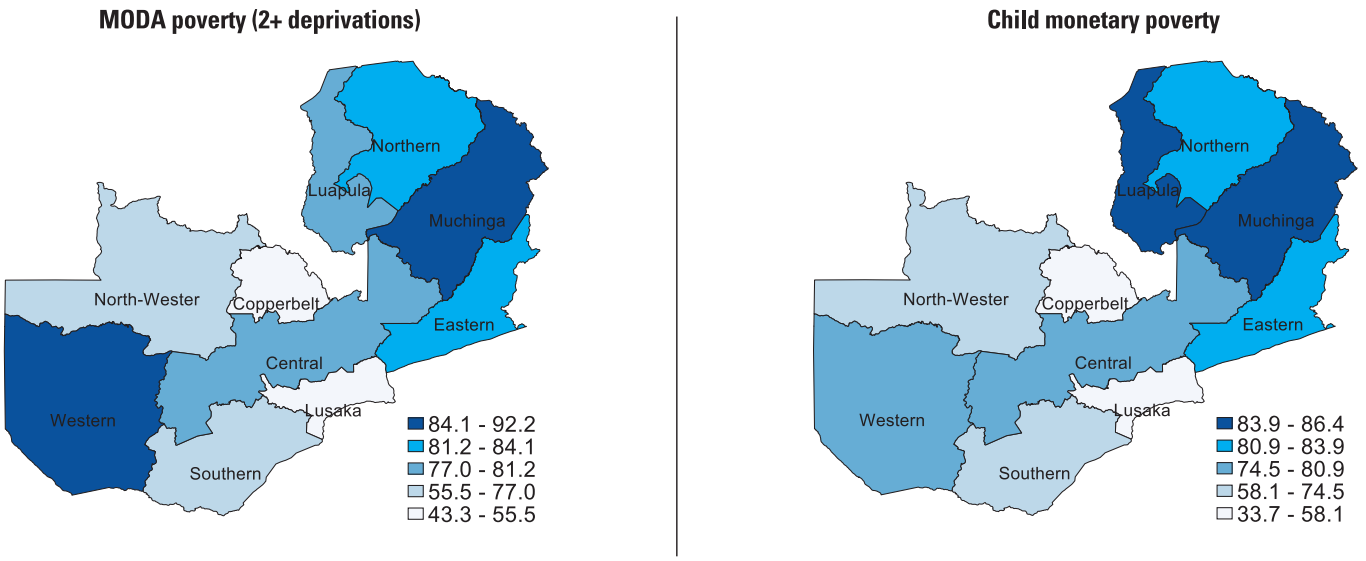

Figure 3: Incidence of child monetary and MODA poverty (%), by province

Table 2: Proportion of children with 1+ deprivation in each dimension, by province

	Water	Sanitation	Housing	Information	Education	Health	Nutrition
Central	34.2	68.0	14.9	30.8	35.4	81.8	18.2
Copperbelt	12.5	34.7	6.4	17.1	21.3	46.9	15.1
Eastern	15.0	71.2	26.4	46.0	57.3	69.4	26.5
Luapula	34.2	74.8	5.1	55.3	47.2	59.1	17.7
Lusaka	9.1	33.1	6.3	20.1	19.5	53.4	12.7
Muchinga	47.5	79.4	23.5	47.5	45.8	67.4	34.0
Northern	51.9	72.9	9.0	46.7	44.4	72.4	15.5
North Western	29.2	71.4	11.8	34.2	27.6	61.2	9.8
Southern	29.0	66.9	20.7	36.6	35.1	80.3	12.9
Western	43.3	92.2	75.9	55.9	32.5	74.0	14.8
TOTAL	**27.5**	**62.8**	**18.3**	**36.6**	**35.7**	**66.4**	**17.1**

Source: Authors' calculations using Zambia LCMS 2022.

[2] The national child monetary poverty rate is higher than the total national poverty rate because poor households tend to have more children.Note also that the number presented here has not been adjusted for differences in survey design since 2015. Therefore, it is not directly comparable to the 2015 monetary poverty rate.

Who are the poor children?

This subsection looks at the characteristics of children with multiple deprivations, and their parents, to identify the most vulnerable children. Table 3 shows that **there are no statistically significant differences overall between the proportion of girls and boys suffering from multiple deprivations.** Girls may be slightly more likely to suffer from multiple deprivations in early childhood (0-4 years), whereas boys seem to be slightly worse off in adolescence (14-17 years). None of these differences are statistically significant, however.

Table 3: Incidence of multiple deprivations (2+ dimensions), by age and sex

	Male	Female	Total
0-4 years	71.0	72.8	71.9
5-13 years	71.0	70.1	70.6
14-17 years	70.7	68.6	69.6
Total	71.0	70.3	70.6

*Source: Authors' calculations using Zambia LCMS 2022. Statistical significance: *=10%, **=5%,***=1%*

Figure 4 looks at the incidence of multiple deprivations depending on the characteristics of the household head and the child's mother (mothers could only be matched to children aged 0-4 years). The dashed horizontal line shows the average share of children with deprivations in 2 or more dimensions for the whole age-specific sample, whereas the dots indicate the incidence for the specific subgroup. The figures are adjusted for differences in index composition across population subgroup, to ensure comparability across population subgroups with different age structures.

The analysis shows that parents' education is highly correlated with child deprivations. The incidence of multiple deprivations (2+ dimensions) is almost 30 percentage points higher among children whose mother has primary or no education, compared to those with secondary or more. The same thing goes for the education of the head of household (usually the father).

Children in female headed households and households headed by persons with disabilities are also more likely to experience multiple deprivations (75.4% and 79.5%, respectively), as are children whose mothers were themselves children at birth (79.9%). The more detailed analysis below, however, reveals that the disadvantage of the latter group is largely attributable to the fact that child-mothers tend to be poorer and less well educated than older mothers, and that young mothers partly offset their initial disadvantage by adopting mitigation strategies (see section below).

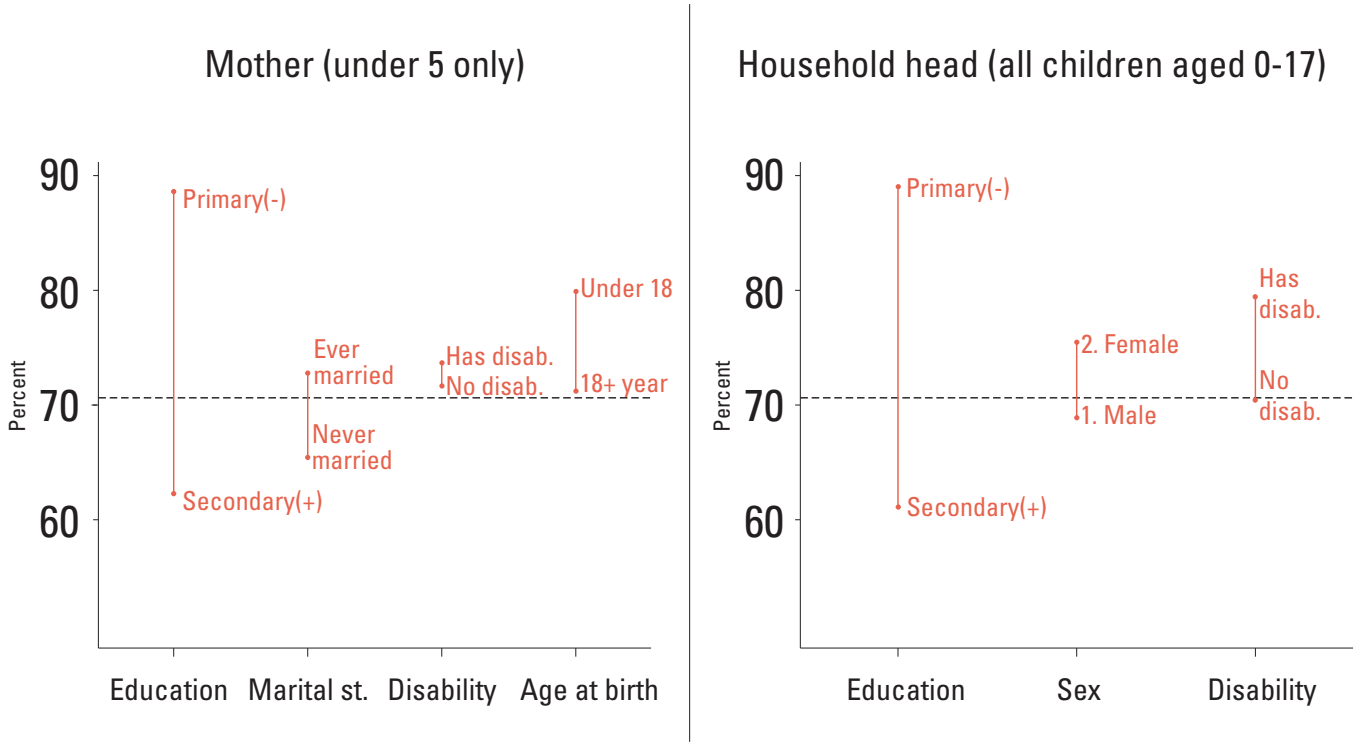

Figure 4: Incidence of children with deprivations in 2+ dimensions (%), by characteristics of the mother and household head

Figure 5 shows that children who cumulate several of the above risk factors are particularly vulnerable. The risk plot shows the average number of dimensions in which children have deprivations for each of the combinations of risk factors. The black lines represent urban households, households with 1-3 children, households headed by males and households headed by persons with secondary or more education. Green lines represent rural, female-headed, primary/no education, and 4+ children.

For instance, it shows that **a child living in a large (4+ children) rural household headed by an uneducated (primary/no education) female, has, on average, deprivations in 3.8 dimensions.** That is more than 3 times as many as a child living in a small urban household headed by an educated male (1.1 dimensions). Even though the samples for these specific subgroups are small, the differences are statistically significant.

The graph also shows that **the urban advantage tends to trump other risk factors**. An urban child who cumulates all the other risk factors is still better off, on average, than a rural child without any of the other risk factors (2.5 dimensions vs. 2.9 dimensions).

The analysis also shows that **the risk factors tend to be mutually reinforcing**. The gap between female and male headed households, for instance, is larger in rural than in urban areas, and larger for uneducated than educated females.

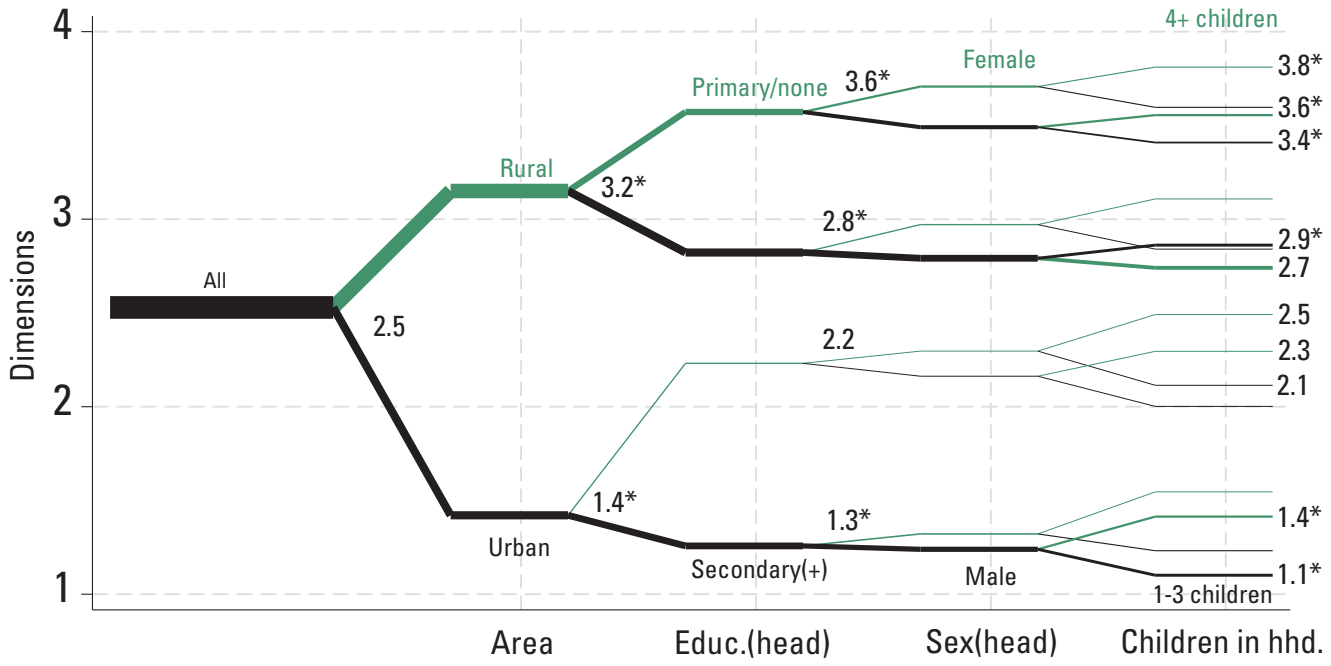

Figure 5: Average number of deprivations, by cumulated risk factors

*Source: Authors' calculations using Zambia LCMS 2022; *=5% statistical significance (base=All)*

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4

CHANGES IN CHILD POVERTY SINCE 2015

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4 CHANGES IN CHILD POVERTY SINCE 2015

Key findings: Trend analysis

1. **There was a statistically significant increase in the proportion of urban children with deprivations in 2 or more dimensions between 2015 and 2022.**
2. **The proportion of multidimensionally poor children remains stable in rural areas.**
3. **The increase in multidimensional poverty was driven primarily by children aged 5-13, and more specifically by a deterioration in health, nutrition and information indicators.**
4. **The economic crisis has been gendered in that it has affected girls worse than boys and female-headed households worse than male-headed ones.**

This section looks at the changes in child poverty since 2015, based on the MODA index. The index that was published in the previous MODA report (Unicef 2018) could not be reproduced identically, due to (1) changes in the LCMS survey, which meant that not all required indicators are available or comparable in the LCMS 2022, and (2) changes in the MODA guidelines, which meant that not all indicators should be used according to the new guidelines. In order to compute a comparable trend, we had to first construct the new index in LCMS 2022 based on 2022 guidelines and available indicators, and then reproduce that index in the LCMS 2015 data to obtain a new comparable baseline. This explains why the 2015 MODA figures presented in this section differ from those published in the official 2018 MODA report.

Based on this comparable index, Figure 6 shows that **child poverty has gone up in urban areas since 2015.** The difference is statistically significant at the 5% level for children suffering from deprivations in 2 or more dimensions simultaneously. In rural areas, the changes in multidimensional child poverty are not statistically significant.

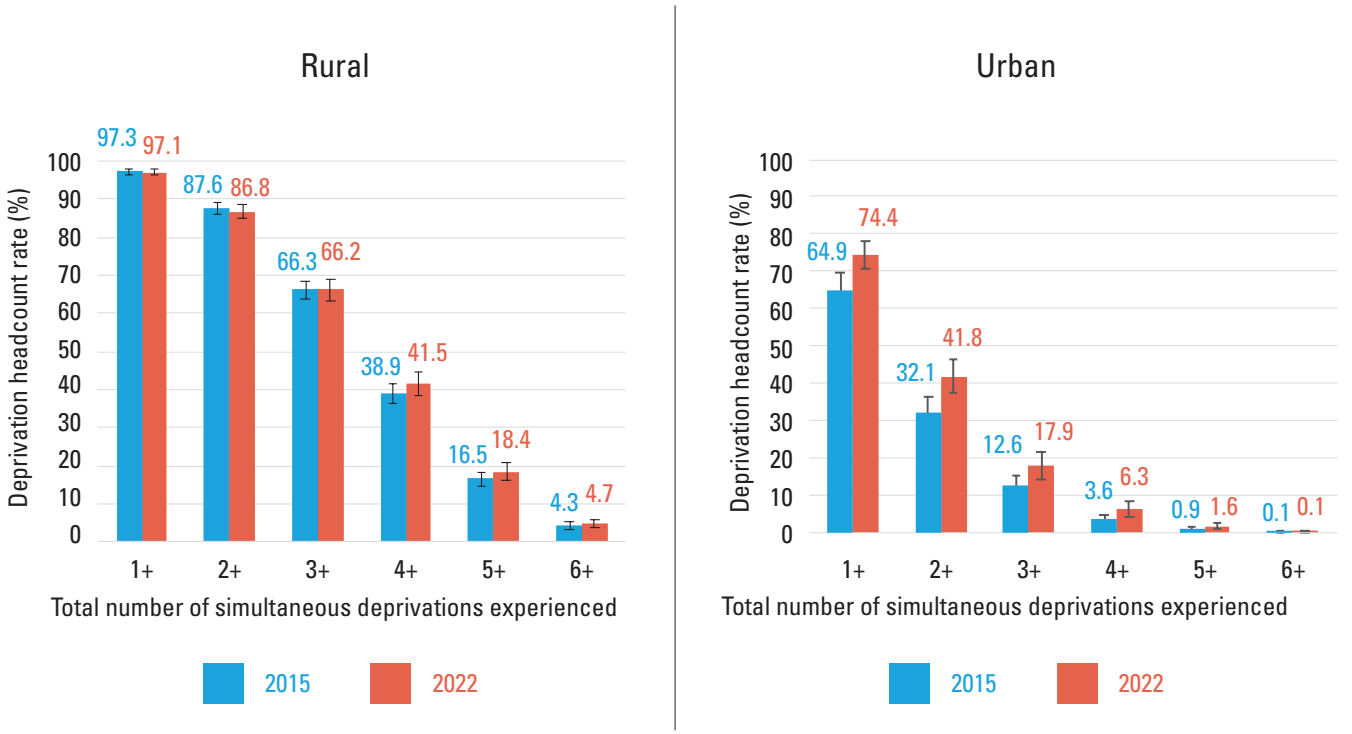

Figure 6: Proportion of children with deprivations in 1+ to 6+ dimensions, by area

Figure 7 below suggests that **the increase in poverty has been driven primarily by older children**, although the changes are not statistically significant for any age group. This may be partly due to the type of indicators used to measure poverty at each age. Indeed, Figure 8 below shows that there were large increases in information and education deprivations, particularly in rural areas. These are dimensions that are not included for smaller children.

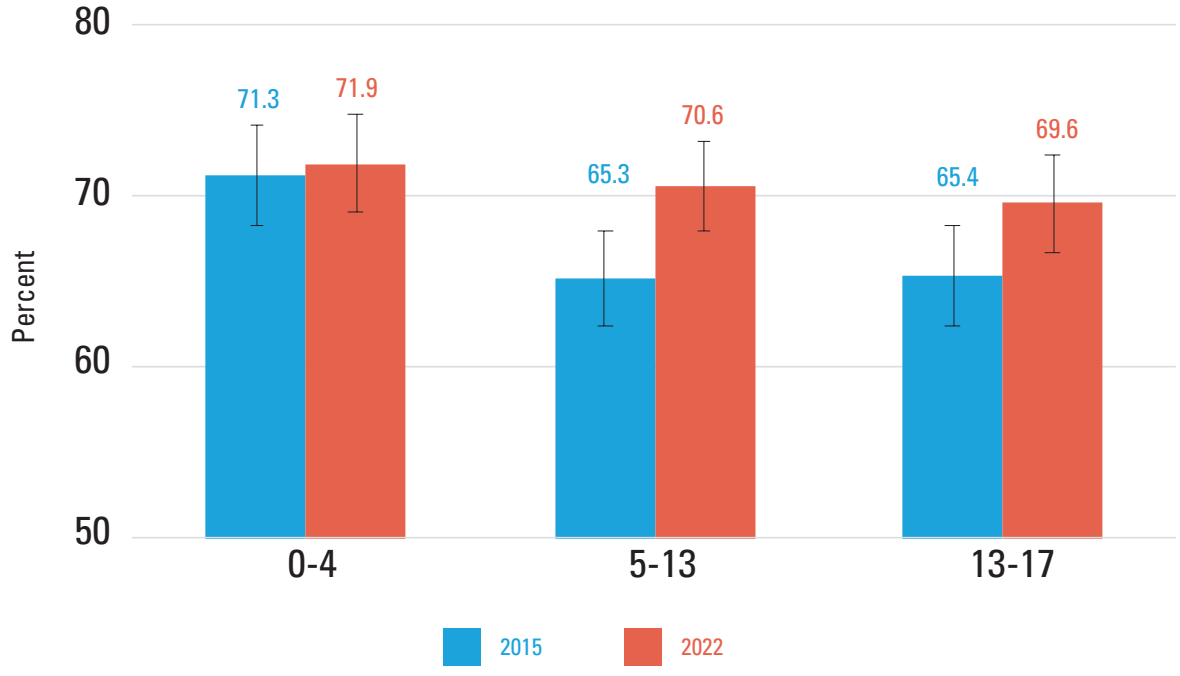

Figure 7: Percent of children with deprivations in 2 or more dimensions, by area

The breakdown by dimension shows that access to **water and sanitation improved slightly between the two surveys, particularly in rural areas**. In rural areas, water and sanitation deprivations decreased by 4 and 7 percentage points, respectively. In urban areas, the corresponding decrease was of 4 and 1 percentage points. Housing deprivations decreased by 3.4 percentage points in rural areas, but did not improve in urban areas. All other dimensions worsened or remained unchanged in both urban and rural areas.

Health indicators saw a particularly sharp deterioration in urban areas, whereas information and education worsened more in rural areas. In 2015, 31.5% of urban children had at least one health deprivation, whereas in 2022, that proportion had increased to 49.9%. In rural areas, the proportion of health deprived children did not change in a statistically significant manner.

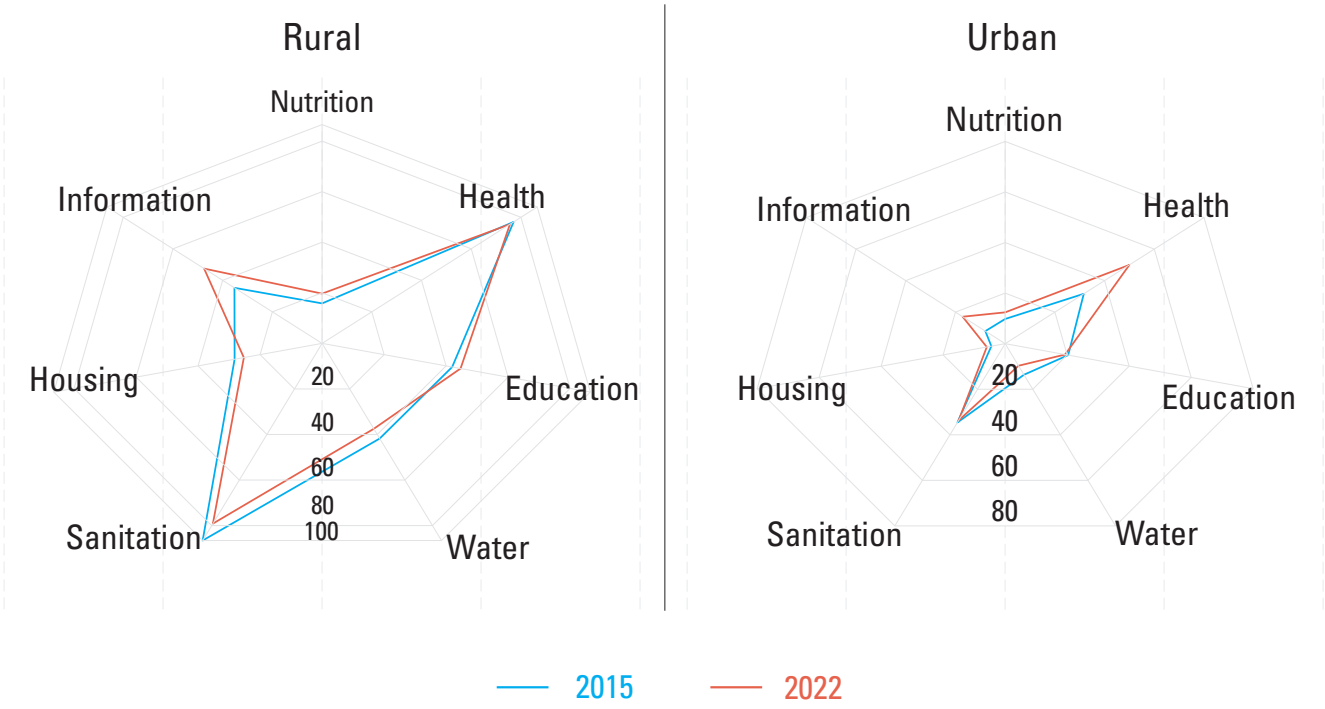

Figure 8: Proportion of children with 1+ deprivation in each dimension, by area

Figure 9 below shows that **the changes in multi-dimensional child poverty were not statistically significant at the province level between 2015 and 2022.** The largest absolute increase in poverty was observed in Central province (+12 percentage points), whereas North-western province saw the largest drop in poverty (-14 percentage points). Neither change was statistically significant at the 5% level, however.

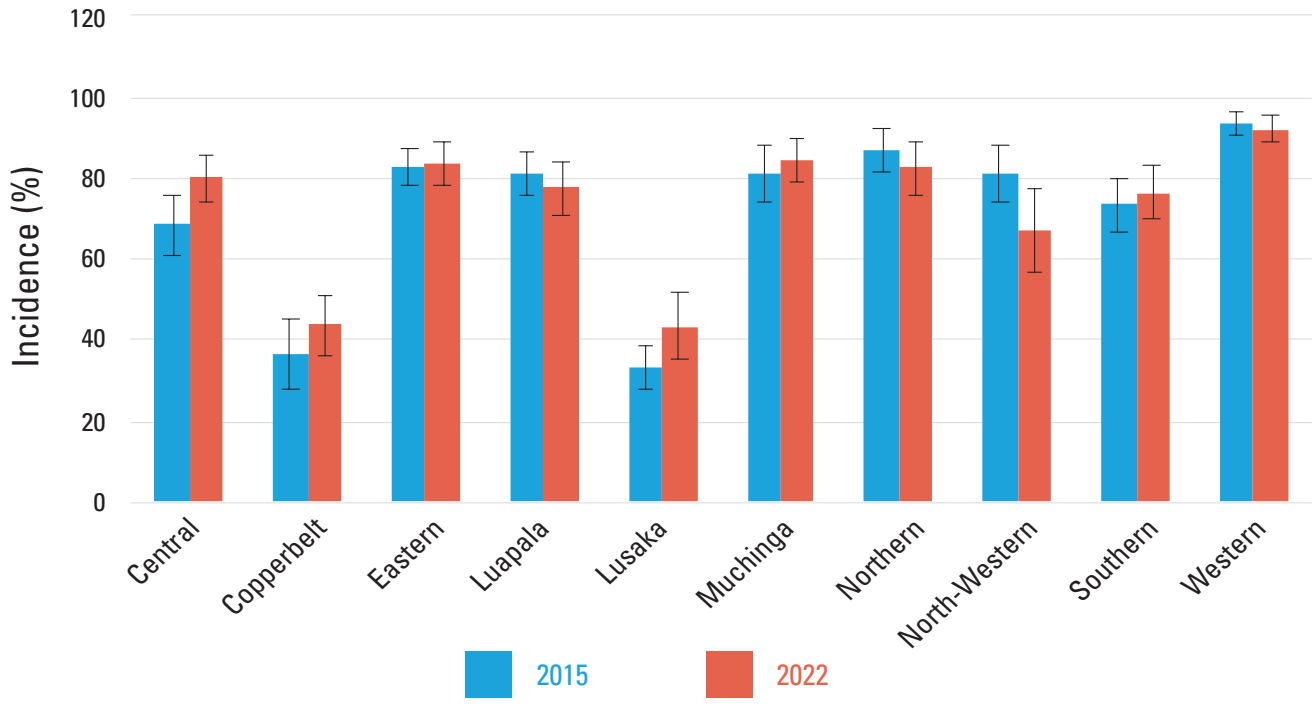

Figure 9: Children with deprivations in 2+ dimensions, by province

The disaggregation in Table 4 shows that **multidimensional poverty increased for almost every group considered**, except children living in rural areas. Deprivations in rural areas stagnated on a very high level. Furthermore, the proportion of children with deprivations in 4 or more dimensions of wellbeing increased by 2.7 percentage points between 2015 and 2022. Multidimensionally poverty rates (2+ dimensions) were also lower in 2022 for children with disabilities and children of disabled parents. But this is likely due to changes in the LCMS questionnaire, which mean that the indicators for these groups are not comparable over time. **The increase in multidimensional child poverty was statistically significant in urban areas (+9.5 points).** This trend is consistent with the trends for monetary poverty. Multidimensional poverty also increased significantly for orphans, and children of mothers with secondary education (4+ dimensions).

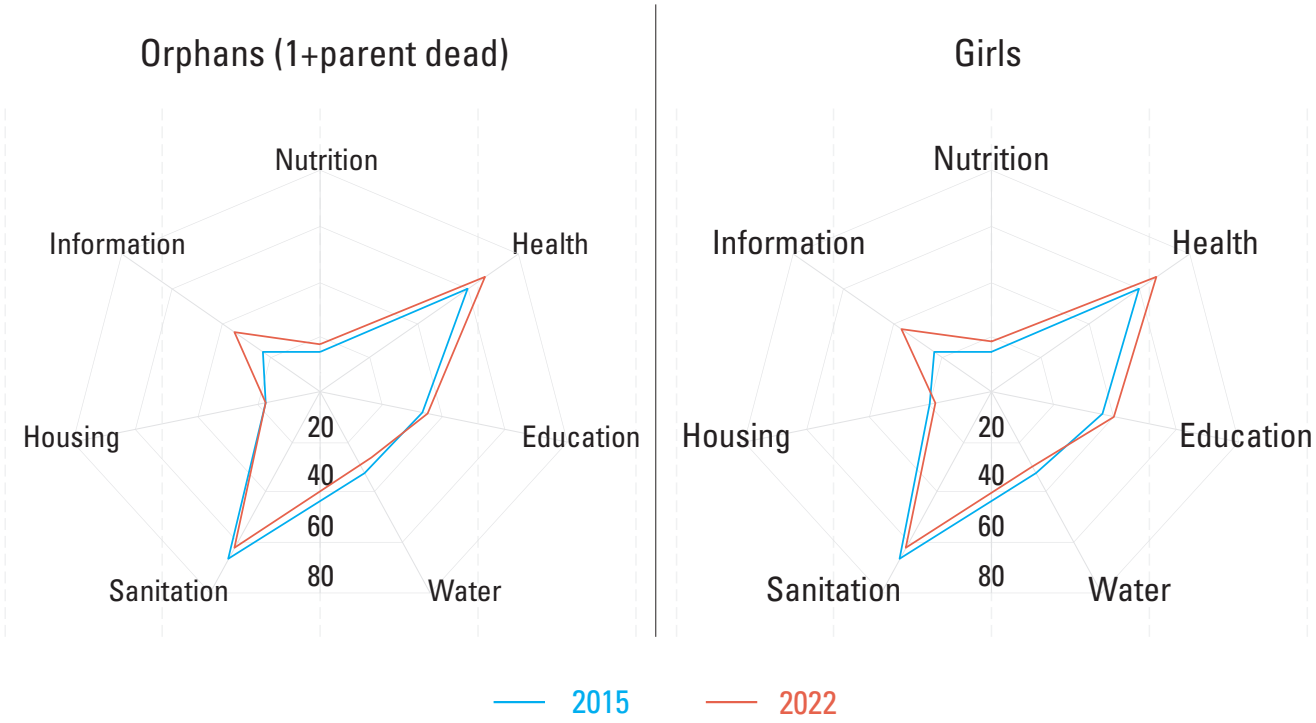

Figure 10: Proportion of children with 1+ deprivation in each dimension, orphans and girls

The disaggregation by dimension in Annex A below shows that **the increase in child poverty amongst orphans is driven by child-specific deprivations, such as health, nutrition, and education**, as well as information. Water, sanitation and housing deprivations, on the other hand, which are measured at the household level, remained stable for this group.

The disaggregation by gender shows that the economic crisis has affected girls and women worse than boys and men. Indeed, multidimensional poverty (2+dimensions) increased more for girls than for boys (+4.8 vs. +3.3), and it increased more for female-headed than male-headed households (+5.2 vs. +3.2) (see Table 4).

The disaggregation by dimension shows that rising girls' poverty is driven by child-specific deprivations, such as health, nutrition and, to a lesser extent, education, whereas household-related dimensions, such as water, sanitation and housing actually improved slightly between the two surveys (see Annex A).

Table 4: Children with deprivations in 2+ dimensions, by group

	Criteria	Group	2015 (2+dim.)	2022 (2+dim)	2015 (4+dim)	2022 (4+dim.)
		All	66.5	70.6	25.5	28.9
CHILD	Sex	Boy	67.7	71.0	26.5	30.0
		Girl	65.5	70.3	24.5	27.9
	Disability	Has disability	88.7	85.5	39.8	56.6
		No disability	66.4	70.6	25.4	28.8

	Orphanhood	1+ dead/ missing	65.1	74.9	25.7	33.9
		2 parents alive	66.7	70.0	25.5	28.2
HOUSEHOLD	Area	Rural	87.5	86.8	38.8	41.6
		Urban	32.3	41.8	3.6	6.3
	Size	1-5	64.8	69.0	26.4	29.8
		6+	67.4	71.6	25.0	28.4
	Monetary poverty	Non-poor	35.1	40.3	4.9	6.9
		Money poor	87.2	86.5	39.1	40.4
HEAD	Education	Primary(-)	87.6	89.1	44.3	47.8
		Secondary(+)	57.2	61.1	17.1	19.1
	Sex	Male	65.7	68.9	23.7	26.5
		Female	70.2	75.4	32.7	35.4
	Disability	Has disability	81.6	79.5	34.4	35.8
		No disability	66.3	70.4	25.3	28.7
MOTHER	Education	Primary(-)	84.1	88.5	39.2	42.4
		Secondary(+)	54.8	62.2	16.9	22.7
	Marital st.	Never married	58.5	65.4	18.5	26.6
		Ever married	67.7	72.6	26.8	30.3
	Disability	Has disability	79.7	73.7	40.6	29.1
		No disability	67.0	71.7	26.1	29.8
	Age at birth	<18	74.9	79.9	30.7	38.5
		18+	66.2	71.2	25.7	29.3

Source: LCMS 2022 (author's calculations). Difference is statistically significant at 5% level (base=2015).

5

SINGLE DEPRIVATION ANALYSIS

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5 SINGLE DEPRIVATION ANALYSIS

Key findings: Single deprivation analysis

1. **Rural children are more likely than urban children to be deprived in all areas of wellbeing considered in the MODA index.**
2. **Boys are more likely than girls to be deprived in education.**
3. **Children with disabilities are significantly more likely to be deprived in education. They are also more likely to be deprived in other dimensions, including household-level deprivations, which cannot be directly linked to the disability of the child.**
4. **The risk of being victim of child protection violations (child labour and child marriage) increases with the level of multidimensional child poverty.**

This section looks at each deprivations one by one to understand what issues are driving the child poverty patterns identified in the previous section. Indeed, the MODA index measures child poverty across 7 dimensions of wellbeing (nutrition, health, education, water, sanitation, housing, information). In each dimension, several indicators are used to identify a range of deprivations that are relevant across population groups and ages. Ultimately, eliminating child poverty will require addressing each of the specific issues affecting children, even if the causes and solutions often are systemic and multi-sectoral.

MODA deprivations

This sub-section looks at deprivations across each of the 7 dimensions included in the MODA index, namely: (1) Nutrition, (2) Health, (3) Education, (4) Water, (5) Sanitation, (6) Housing, and (7) Information. We start by providing an overview of the indicators considered in each dimension, before moving on to look at deprivations across dimensions.

Nutrition

The nutrition dimension looks at 3 different indicators: (1) Wasting: children aged 3-59 months whose weight-for-height z-score is more than 2 standard deviations below the WHO reference population median; (2) Stunting: children aged 3-59 months, whose height-for-age z-score is more than 2 standard deviations below the WHO reference population median; (3) Dietary diversity: Children aged 1-17 living in households that ate neither meat/fish/fruit in the past 7 days, or had no vegetables.

Differences in malnutrition rates between boys and girls are largely down to biological factors, while dietary diversity is measured at the household level, with differences between groups falling within the statistical error margins. Table 5 show that more than 1 in 10 children live in household with insufficient dietary diversity, and around 4 in 10 are stunted.

Table 5: Nutrition deprivations (%) by age and sex

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
Wasting (3-59 months)	5.9			4.3		
Stunting (3-59 months)	43.5			39.7		
Low dietary diversity (1-17 years)	12.5	11.6	10.6	9.3	10.3	10.7

Health

The health dimension looks at 2 different indicators: (1) Untreated illness: children aged 0-17 years who have been ill or injured in the past 2 weeks, but did not consult a medical facility, or consulted only a traditional healer/ faith leader; (2) Children living in households that have no known facility nearby or where the nearest facility is more than 10km or 30 minutes away. Up to 2% of children report having been ill or injured in the past 2 weeks without consulting a medical facility. Girls aged 5-17 appear slightly more likely to fall into this group than boys of the same age. Two thirds of children do not have access to a medical facility within walking distance.

Table 6: Health deprivations (%) by age and sex

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
Untreated illness (0-17 yrs)	1.8	1.0	1.3	1.7	1.7	1.9
No medical facility nearby (household)	63.1	66.7	67.0	63.8	66.0	67.1

Education

The education dimension looks at school attendance for children aged 7-13 and grade-for-age for children aged 7 to 17. Children more than 2 years behind their expected grade for age are considered deprived in this indicator. Children aged 14-17 years are considered deprived if they have not completed primary education.

Boys of all ages are worse off than girls in all three education indicators.

Table 7: Education deprivations (%) by age and sex

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
Out of school (7-13 yrs)		25.4			22.0	
2 yrs> grade for age (7-17 years)		23.2	25.0		20.4	19.3
Incomplete primary (14-17 yrs)			39.8			31.8

Water

The water dimension contains 2 indicators: (1) Unimproved water source: child lives in a household that does not use a safe water source for drinking water, unless the water is appropriately treated (see definitions in annex); (2) Distance to water: child lives in a household located more than 2 km from the nearest water source.

Close to 1 in 4 children use unimproved and untreated water sources, which increase the risk of diarrheal illness and other waterborne diseases, whereas 1 in 20 live more than 2 km from the nearest water source.

Table 8: Water deprivations (%) by age and sex

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
Unimproved source (household)	21.5	25.6	25.6	23.3	25.6	22.7
Distance>1km (household)	5.3	4.7	6.9	4.4	5.2	5.1

Sanitation

The sanitation dimensions is measured on 2 indicators: (1) Unimproved sanitation: children living in households that usually use an unimproved sanitation facility (see definition in annex); (2) Children living in households that do not dump garbage in a pit or other designated places and do not use refuse collection.

Over half of children live in households that do not use improved sanitation facilities, and 1 in 4 live in households that do not dispose of household waste in safe ways. These factors are known to increase the risk of disease transmission.

Table 9: Sanitation deprivations (%) by age and sex

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
Unimproved sanitation (household)	53.6	56.6	53.9	54.2	56.8	52.2
Unsafe waste disposal (household)	26.9	25.8	25.2	26.4	25.7	24.1

Housing

The housing dimension looks at two indicators: (1) Over-crowding: children living in households that have more than four people per occupied room (excluding bathrooms and toilets); (2) Construction: children live in household where both the floor and roof are made of natural materials (see definitions in annex).

Around 1 in 10 children live in over-crowded houses, and slightly more live in precarious constructions. This exposes the vulnerability to weather-related shocks, as well as disease transmission and exposure to domestic and sexual violence.

Table 10: Housing deprivations (%) by age and sex

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
Over-crowding (household)	10.0	9.9	10.9	9.4	10.4	8.2
Construction (household)	13.8	11.7	11.6	13.3	12.3	10.7

Information

The information dimension uses one indicator, measuring whether the child lives in a household that does not own any of the following devices: TV, radio, PC, landline, mobile phone.

Around 36% of children lack access to such communication devices, which restricts their ability to access information about their rights, as well as important communication related to health and education. This indicator is strongly correlated with monetary poverty, which is known to have increased in recent years. It is important to note that this indicator measures access and not quality of access.

Table 11: Information deprivations

	Boys			Girls		
	0-4 yrs	5-13 yrs	14-17 yrs	0-4 yrs	5-13 yrs	14-17 yrs
No communication assets (household)	36.6	36.7	36.9	37.5	37.8	32.1

Looking across dimensions

Figure 11 shows the proportion of children in relevant age groups that have at least one deprivation in each of the 7 dimensions included in the MODA. The results show that **rural children are worse off than urban children in all considered dimensions of wellbeing.**

Table 12 shows the disaggregated deprivations rate for all 7 dimensions by selected characteristics. In general, there appears to be a strong correlation between deprivations in different dimensions, meaning that children who are disadvantaged in one dimension also tend to be disadvantaged in other dimensions. For instance, **children with disabilities are more**

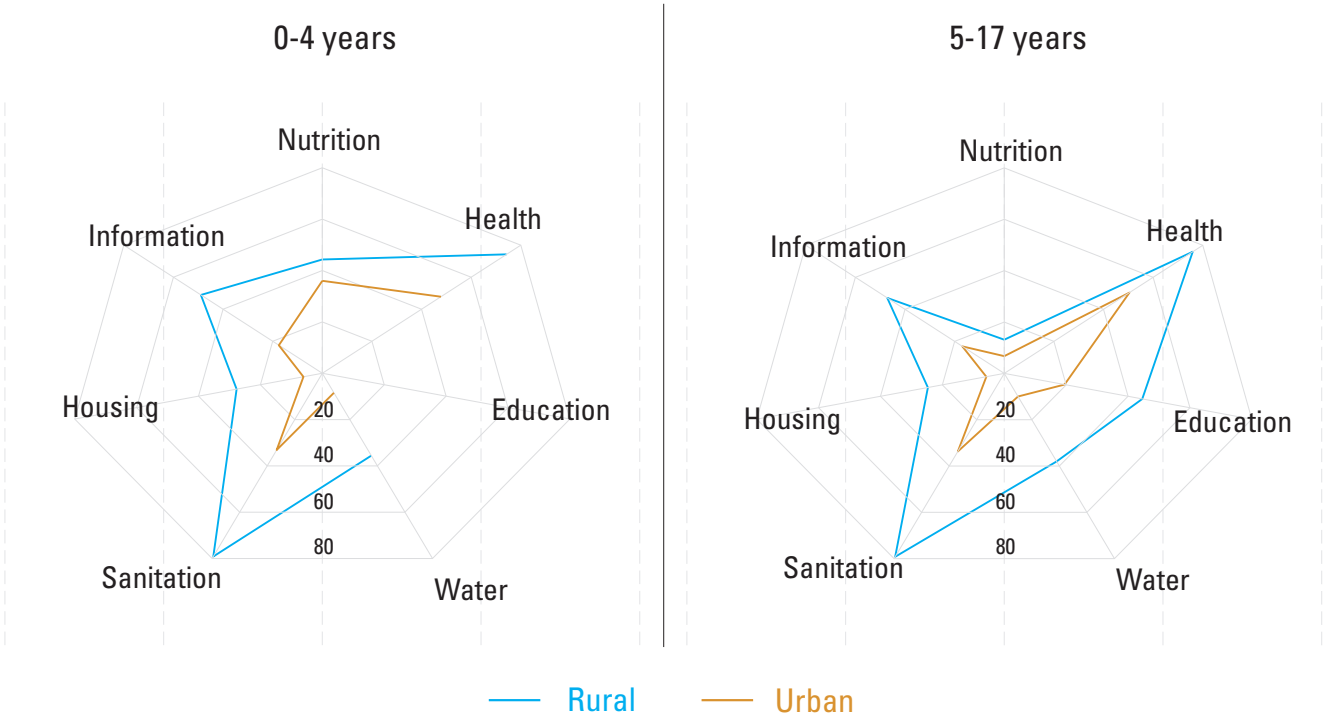

Figure 11: Proportion of children with 1+ deprivation in each dimension, by area

likely to have deprivations in all dimensions of wellbeing compared to children without disabilities. The National Disability Prevalence Survey 2015 showed that this phenomenon was more pronounced in rural areas, particularly in Luapula and Wastern provinces (ZamStats 2015, p.34). Interestingly, this also applies to dimensions that are not child specific, such as housing conditions or access to sanitation. This suggests that there is a link between child disability and

household living standards – either that disability contributes to impoverishing the household, or that household poverty increases the risk of disability (see Elwan, 1999).

For other groups, deprivations are not correlated across dimensions, pointing to more complex causal mechanisms. For instance, **children of unmarried mothers are more likely to be deprived in housing, but less likely to be deprived in health and nutrition.** This points to the possibility that single mothers are able to partially compensate for their economic disadvantage (housing deprivations are strongly correlated with income) by deploying mitigation strategies and other behavioural responses. Dedicated studies would be required to understand the precise nature and magnitude of the various mechanisms at play.

Table 12: Children with 1+ deprivation in each dimension, by group

	Criteria	Group	Nutrition	Health	Education	Housing	Sanitation	Water	Information
	Total		17.1	66.4	35.7	18.3	62.8	27.5	36.6
CHILD	**Sex**	Boy	18.0	66.6	38.9	18.5	62.9	27.9	36.7
		Girl	16.1	66.2	32.5	18.1	62.7	27.2	36.4
	Disability	Has disab.	23.9	80.7	61.5	33.4	71.0	40.5	60.5
		No disab.	17.0	66.3	35.6	18.2	62.8	27.5	36.4
	Orphanhood	1+ dead/ missing	20.0	68.1	38.6	19.3	65.5	29.7	44.9
		2 parents alive	16.6	66.1	35.2	18.2	62.4	27.2	35.3
HOUSEHOLD	**Area**	Rural	19.7	75.6	44.7	25.2	79.1	37.5	47.5
		Urban	12.4	50.0	19.3	5.9	33.7	9.7	17.1
	Size	1-5	17.5	65.4	34.9	17.4	61.2	25.2	41.1
		6+	16.8	66.9	36.1	18.8	63.8	28.9	33.9
	Money	Non-poor	9.7	51.4	16.3	4.9	35.5	11.8	14.7
		Poor	20.9	74.0	45.2	25.4	77.4	35.7	47.8
HEAD	**Education**	Primary(-)	22.1	74.4	52.5	28.0	80.1	37.6	55.0
		Secondary(+)	14.5	62.2	26.4	13.3	53.9	22.3	27.0
	Sex	Male	16.4	66.0	34.9	16.8	61.7	27.1	32.5
		Female	19.0	67.5	37.8	22.6	66.0	28.6	48.0
	Disability	Has disab.	22.6	69.1	42.3	23.4	67.7	35.0	45.6
		No disab.	16.9	66.3	35.5	18.2	62.7	27.3	36.3

MOTHER	Education	Primary(-)	24.2	73.0	0.0	27.4	81.2	34.2	55.4
		Secondary(+)	14.9	63.3	0.0	14.6	53.2	24.1	27.9
	Marital st.	Never married	16.8	62.3	0.0	23.5	61.1	23.8	32.8
		Ever married	18.5	67.5	0.0	18.6	63.7	28.4	38.6
	Disability	Has disab.	17.4	78.8	0.0	12.5	62.3	26.8	32.3
		No disab.	18.3	66.7	0.0	19.3	63.3	27.8	37.9
	Age at birth	<18	20.6	75.5	0.0	25.6	72.0	34.8	37.8
		18+	18.1	66.3	0.0	18.8	62.8	27.3	37.8

Source: Author's calculations based on LCMS 2022 data.

Figure 12 disaggregates results further to show the prevalence of each single deprivation amongst the relevant age groups. The results are disaggregated by disability status and by sex. Starting with the gender disaggregation, almost none of the indicators show statistically significant differences between boys and girls. The only indicators for which the difference is statistically different are primary school completion and grade-for-age. **Boys are significantly more likely not to complete primary school, compared to girls** (39.8% vs. 31.8%).

Boys are also more likely to be delayed in their schooling than girls: 23.8% (vs. 20.0% for girls) are more than 2 years behind their appropriate grade-for-age. This is consistent with findings from the Education Management Information System (EMIS) database, which showed that nearly half of grade 1 children were already behind the intended grade-for-age when they start school (Education Statistics Bulletin, 2020).

Due to the small number of disabled children, sample sizes are not large enough to detect statistically significant differences in most cases. A few indicators stand out, however. **Children with disabilities are significantly more likely to be out-of-school** compared to children without disabilities (45.0% vs. 23.6%). Children with disabilities are also significantly more likely to live far from a medical facility and to not have access to information devices or to improved water sources. As discussed above, the latter indicators are strongly correlated with monetary poverty, pointing to a link between monetary poverty and child disability, that would require further investigation.

Figure 12: Prevalence of deprivations (%), by disability status and sex

Non-MODA deprivations

This subsection looks at deprivations that are not included in the MODA index. The updated MODA guidelines recommend excluding indicators that describe behavioural issues, such as breastfeeding, as well as issues related to juridical protection of the child. Here we focus specifically on breastfeeding and child protection issues, as these were included in the previous MODA index and are available in the LCMS 2022. However, there are many invisible dimensions, which are important to child wellbeing, but could not be included in this analysis due to lack of data. This includes things like shame and discrimination, which are often raised by children themselves as important elements of the experience of child poverty.

Figure 13 shows the relation between the number of MODA deprivations suffered by the child (x-axis) and the prevalence (in %) of non-MODA deprivations (y-axis). Breastfeeding is measured directly for children aged 0-6 months (is the child currently being exclusively breastfed?), as well as through a recall question asked for children aged 6-59 months (was the child exclusively breastfed for the first 6 months of life?). **The analysis shows that the likelihood of being deprived in breast-feeding is constant across MODA-deprivations**, meaning that children with many MODA deprivations are at least equally as likely to be breastfed as those with fewer MODA deprivations. This could reflect the fact that richer mothers are more able to afford milk formula and may be more likely to work and/or use childcare. Whatever the reason, this is a clear example of an issue in which the households' wealth does not automatically translate into improved wellbeing for the child.

For child marriage and child labour, the situation is the reverse: the **more MODA deprivations the child has, the higher the likelihood that s/he will also be deprived in child marriage and child labour**. However, here too, the relation between wealth and child wellbeing is far from straightforward. For instance, children who work will typically earn a salary, which will contribute to raise the household income. However, the child's wellbeing will be negatively affected by the labour, which reduces the child's long term developmental and employment prospects, as well as potentially exposing him/her to safety hazards.

These two examples show the importance of looking beyond narrow indicators of child wellbeing, to understand the full complexity of the experience of child poverty. As these examples show, household wealth does not always translate into improved wellbeing for the child, and the child needs much more than satisfaction of material needs to develop into a fully functioning and flourished adult.

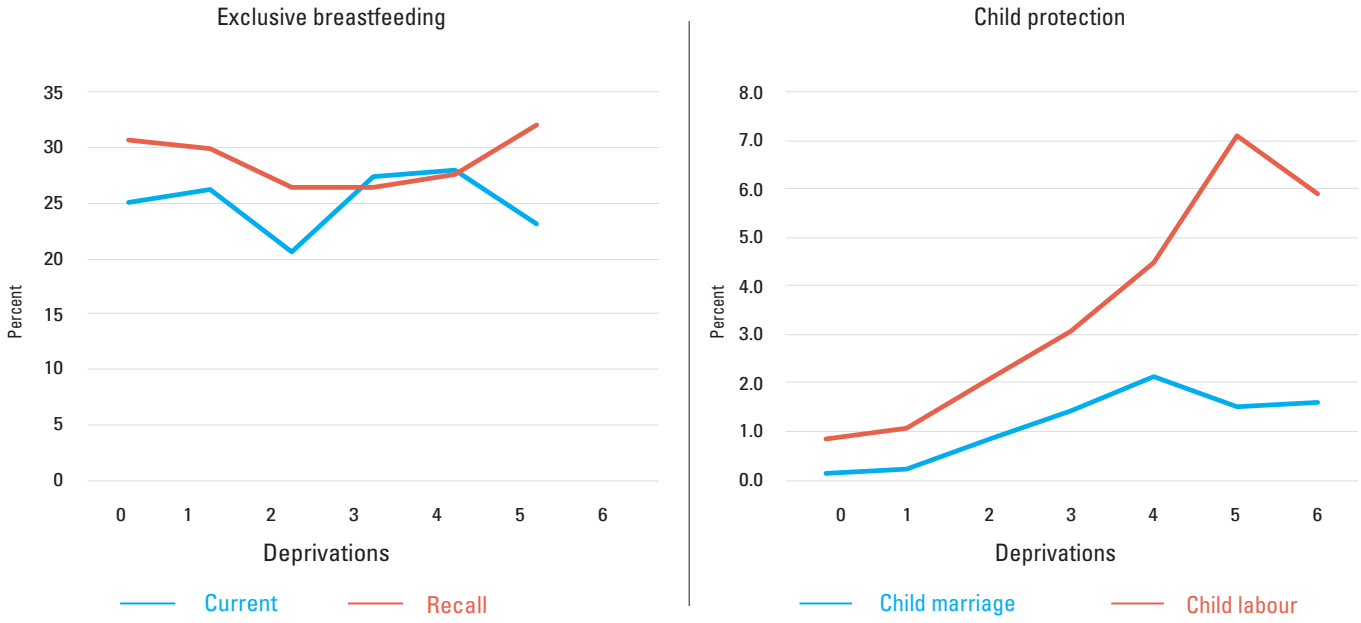

Figure 13: Prevalence of selected non-MODA deprivations, by MODA score


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6

MULTIPLE DEPRIVATION ANALYSIS

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6 MULTIPLE DEPRIVATION ANALYSIS

Key findings: Multiple deprivation analysis

1. **Deprivation patterns differ across provinces. Central and Northern provinces have many multidimensionally poor children, who tend to have relatively few deprivations each. Muchinga, by contrast, has both a high incidence (many poor children) and intensity (many deprivations per child).**

2. **Territorial factor (province and area of residence) are dominant when it comes to explaining differences in deprivation across children. This largely reflects differences in physical access to services across the country.**

3. **Parents' education is a key determinant of children's deprivation, even after controlling for differences in income and age.**

4. **Disabled children have significantly more deprivations than other children with comparable income and age.**

This section looks at the overlap and interaction between different deprivations in each child. One of the important benefits of the MODA analysis is that it takes the individual child as the primary unit of analysis. This allows us to see not only how many children are out-of-school and undernourished, for instance, but also whether it is the same children suffering from different deprivations.

This is relevant for how policy solutions are designed. If the same children are suffering from many different deprivations simultaneously, it may be necessary to look at the characteristics of the child to lift the barriers preventing him/her from accessing services (e.g. discrimination, disability, etc.). If, on the other hand, deprivations are evenly spread across children, it may be more appropriate to focus on conventional service delivery responses (e.g. build schools or train doctors).

Intensity vs. Incidence of deprivations

Figure 14 shows both the incidence of children with multiple overlapping deprivations (2+ dimensions), and the intensity of deprivations experienced by those children – that is, the proportion of indicators in which the child is deprived. Naturally, the two issues are closely related, as higher prevalence rates for deprivations automatically increases the likelihood that different deprivations will overlap. This explains, for instance, why Copperbelt and Lusaka provinces, which tend to have few deprived children (low incidence), also have fewer simultaneous deprivations per child (low intensity). However, the relation is not perfect.

For instance, the graph shows that **Muchinga has significantly higher intensity of deprivations than Northern and Central provinces, even though the incidence of multimensional poverty is similar in all three provinces**. This means that, even though Muchinga doesn't have proportionally more poor children than other provinces, those who are poor in Muchinga tend to be worse off (i.e. have more deprivations) than poor children in other provinces.

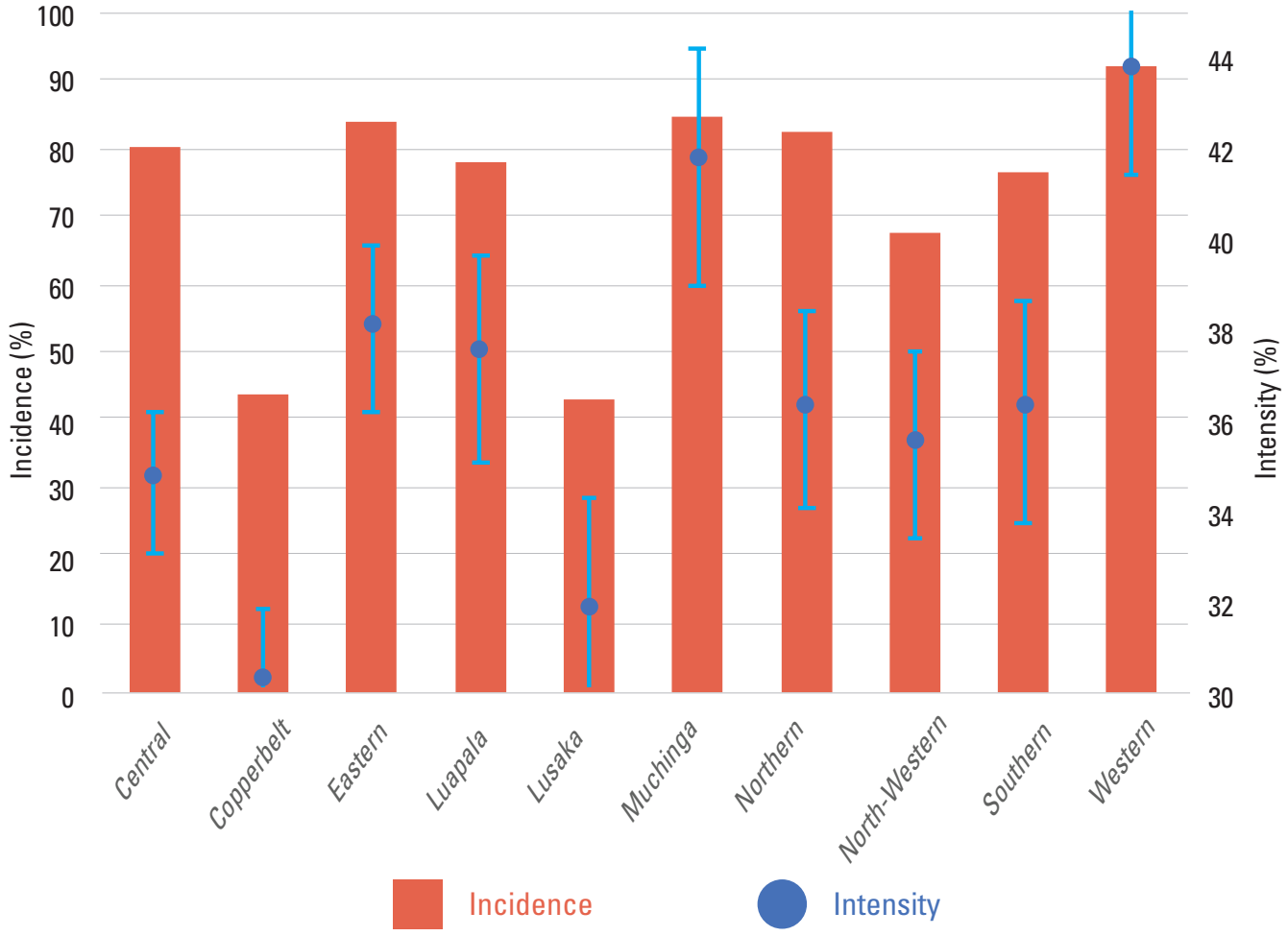

Figure 14: Incidence and intensity of deprivations (2+ dimensions), by province

Source: LCMS 2022 (author's calculations).

Figure 15 illustrates the issue of intensity and incidence of multidimensional poverty by comparing water, health and nutrition deprivations in Central and Muchinga provinces. The graph shows that the total proportion of children affected by one of these deprivations is higher in Central province (13% affected by none) than in Muchinga (18%). Yet, the concentration of deprivations tends to be higher in Muchinga, meaning that those children who are affected tend be affected by more than one deprivation. In fact, **the proportion of children who have deprivations in all three dimensions simultaneously is thrice as high in Muchinga (15%) as in Central province (5%),** even though fewer children overall are affected by the deprivations.

Put in simplified terms, we could say that Central Province has three separate problems, whereas Muchinga has one central problem, and three smaller ones. Indeed, Central Province has children who lack access to water, and it also has, a largely different group of children who suffer from nutritional

deprivations (mostly stunting and wasting). Finally, it has an issue with access to health services that affects the two previously mentioned groups, as well as many other children.

Muchinga, on the other hand, has a core group of left-behind children (15%) who lack access to all three services simultaneously, and probably to many more services as well. On top of that, it also has, like Central Province, a group of children who lack access to water, as well as other groups who lack access to health care, and nutrition. One possible explanation for the higher overlap of deprivations in Muchinga is the exceptionally high prevalence of insufficient dietary diversity (28.7%), compared to Central province (11.1%). This is the highest rate in the country and almost three times higher than the national average (10.9%).

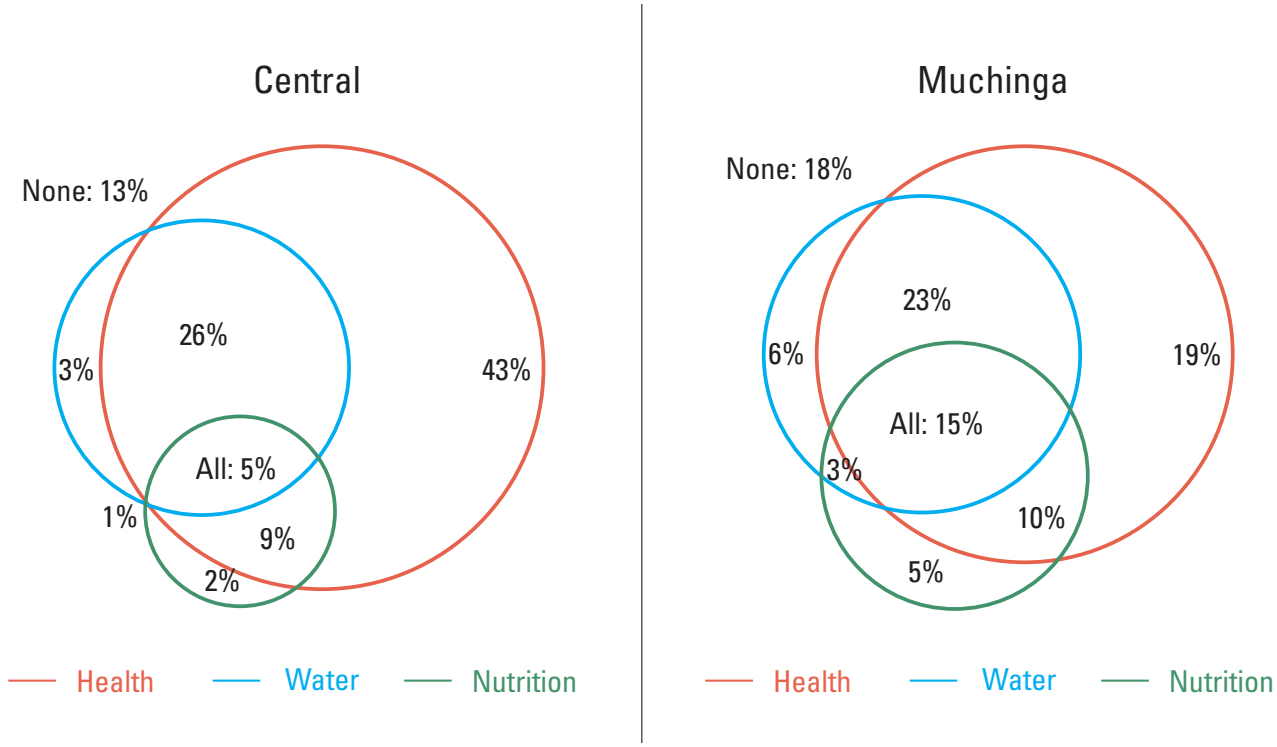

Figure 15: Overlap between children deprived in Water, Health, and Nutrition Central and Muchinga Provinces

Source: LCMS 2022 (author's calculations).

Multivariate analysis of vulnerability factors

Until now, the analysis has looked at vulnerability factors separately. This led us to conclude, for instance, that parents' education was a key predictor of child poverty. However, vulnerability factors interact, which can lead to spurious conclusions. Education, for instance, is strongly correlated with household income and wealth. It is therefore possible that it is the greater financial resources of educated households that enable them to avoid child deprivations, rather than the education per se.

It will not be possible to conduct thorough analysis of causality within the scope of this report, as this would require dedicated research frameworks and surveys for each vulnerability factor. However, we can move one step beyond simple descriptive statistics, by carrying out a multivariate analysis of correlation, which allows us to look at the relation between deprivations and various vulnerability factors simultaneously.

The results presented in Figure 16 show the results of the multivariate OLS regression analysis on the child's MODA score indicating the number of dimensions in which the child has deprivations. A negative coefficient (to the left of the vertical red line) indicates that the factor is associated with the number of MODA deprivations and vice versa. Importantly, the regression controls for differences in per capita household consumption, as well as child age and index composition, meaning that the results are not due to differences in income or age. The horizontal bars show the 95% confidence intervals on the coefficients. If the bar crosses the red line, we cannot say with confidence that there is a positive or negative relation with child poverty. Two different models were constructed for children 0 to 4 and 5 to 17, as mothers' characteristics only are available for children under 5.

The first thing that is clear from the graph is that territorial factors (area of residence and province) tend to dominate for both age groups, meaning that the **household location is one of the key determinants of what basic services children can access**. Children living in rural areas tend to have significantly more deprivations than urban children. Similarly, children in the Western province are shown in the graph have significantly more deprivations (positive coefficients) than the base province, Lusaka, which is not displayed in the graph. Other provinces are not significantly different from Lusaka after controlling for differences in income, education, etc.

The analysis confirms that **low education of both the mother and the head of household (usually the father) are associated with higher levels of deprivation among children.** Importantly, this is the effect over and above the financial benefits that education provides in the form of higher income since the regression controls for differences in income. The analysis shows that children under 5 (blue dots) in male-headed households tend to have significantly fewer deprivations than those in female-headed households. The same is not true for older children (red dots), who tend to have the same number of deprivations regardless of whether they live in a male- or female-headed household.

Even after controlling for differences in wealth and location, the analysis shows that **children with disabilities tend to have significantly more deprivations than other children**. This points to the existence of structural disadvantages affecting those children. This could be due, for instance, to discrimination or physical barriers to access. Further research, including qualitative data, would be required to understand the specific mechanisms underlying each of these findings.

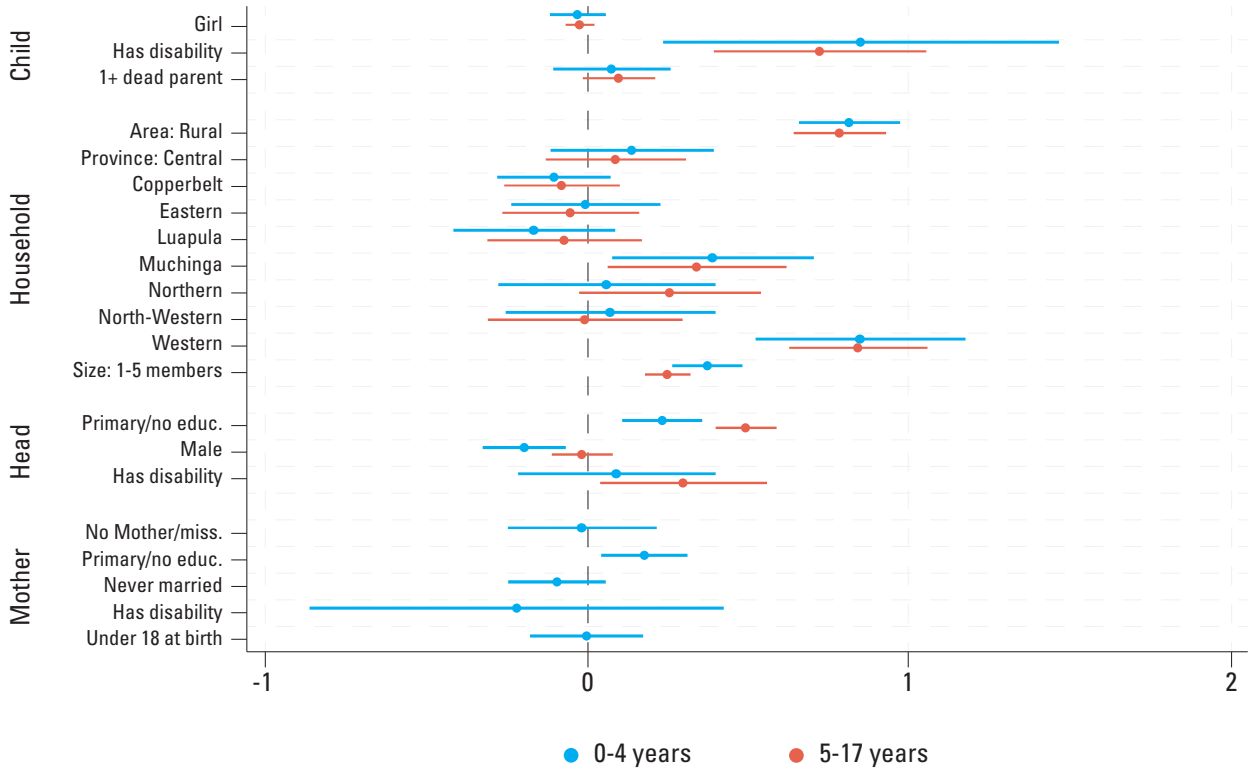

Figure 16: Multivariate analysis of correlation with MODA deprivations, controlling for differences in household consumption

Source: LCMS 2022 (author's calculations). N.B.: A negative coefficient (to the left of the dashed vertical line) indicates that the factor is negatively associated with the number of MODA deprivations, and vice versa. Horizontal bars show the 95% confidence intervals on estimated coefficients. vice versa. Horizontal bars show the 95% confidence intervals on estimated coefficients.

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7

MODA vs. MONETARY POVERTY

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7 MODA VS. MONETARY POVERTY

This section looks at the mismatch between MODA and monetary poverty. One of the key value-adds of the MODA approach is that it highlights aspects of child poverty that are not visible in conventional poverty measurements. It is, therefore, natural to find differences in their assessments of poverty. By looking at the discrepancies between the different measures, we can identify important aspects of the nature of child poverty, and the mechanisms leading children to fall into poverty.

The monetary poverty rates shown in this section differ slightly from the official 2022 monetary poverty rates published in the LCMS 2022 report. This is due to two factors: (1) the monetary poverty rate used here focuses only on children aged 0-17 whereas the official poverty rate concerns citizens of all ages; and (2) the official national poverty rate was estimated using regression analysis to ensure full comparability with 2015 despite changes in the LCMS questionnaire. Since this section does not look at poverty trends, we do not need to use regression estimates.

Figure 17 shows the overlap between children who are classified as multidimensionally poor according to the MODA index (2+ dimensions), and those considered poor according to the monetary poverty indicator. The overall proportion of poor children is roughly similar in both cases (70.6% of MODA poor children vs. 65% of money poor). However, as the graph shows, it is not always the same children who are considered poor.

The discrepancy is particularly large **in urban areas, where one third of urban children who live in money-poor households are not considered poor according to the MODA index** (12% out of 36%), meaning that they have deprivations in fewer than 2 dimensions of wellbeing. In other words, these are children who have been able to achieve satisfactory levels of wellbeing despite limited financial resources.

At the same time, the analysis allows us to see that well **over a third of MODA poor children in urban areas (17% out of 41%) live in households that are considered non-poor in monetary terms**. These may, for instance, be domestic helpers or children who are discriminated against within the household due to disability or gender, for instance. Another case might be that the household spends money on things that do not directly contribute to the dimensions of child wellbeing considered in the MODA (e.g. gadgets or clothes instead of education and health). In both cases, this shows the importance of going beyond conventional measures of poverty, which focus on household expenditures, in order to identify the dimensions and issues that are relevant to children.

In rural areas, the vast majority of children are poor both in monetary and multidimensional terms, leading to a greater overlap between the two measures. Yet, we still find that 7% of children who manage to avoid multidimensional poverty despite living in money-poor households. We also find 12% of rural children who live in non-poor household but suffer from multiple MODA deprivations due to intra-household discrimination or other non-monetary constraints.

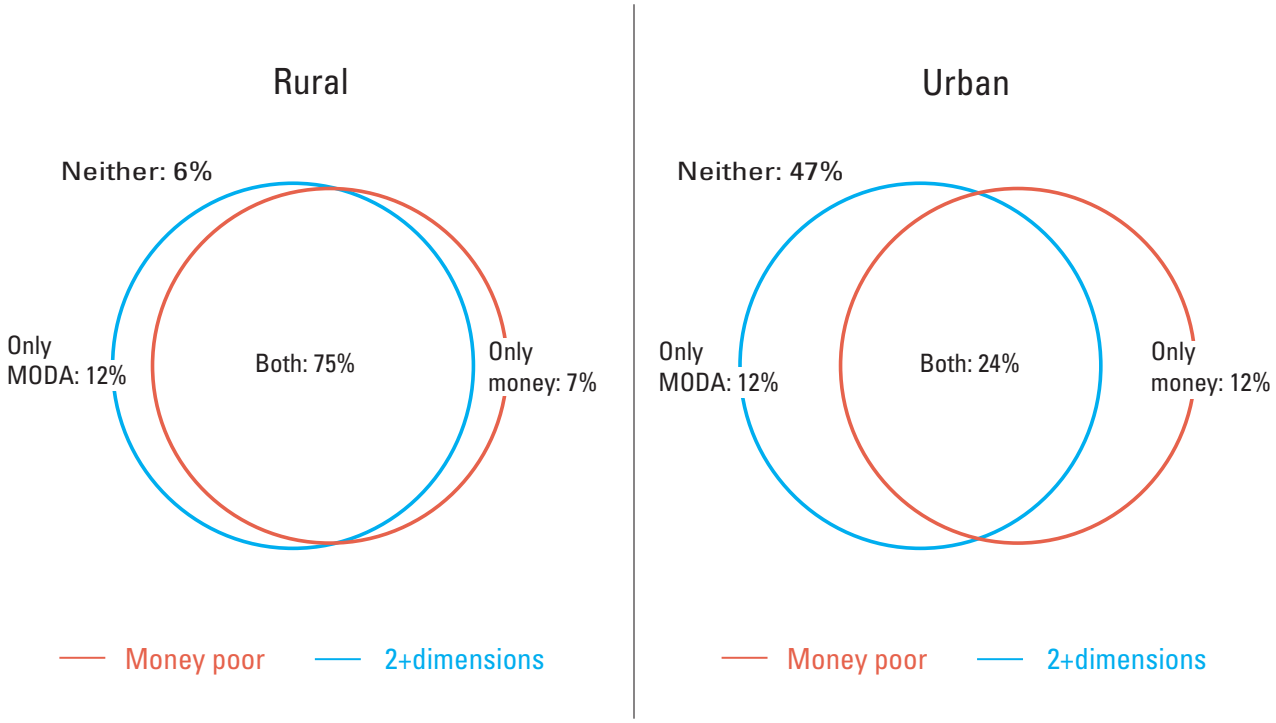

Figure 17: Overlap between MODA and monetary poverty, by area of residence

Figure 18 compares the size of different population groups amongst children who are classified as poor according to only one of the measures of poverty. The analysis shows that three groups are particularly over-represented amongst children who are only considered money poor, meaning that they achieve comparatively adequate levels of wellbeing despite having limited financial resources.

The first group are **children living in large households (6+ member), who are significantly over-represented amongst money poor households, compared to their MODA poverty status**. A possible explanation for this is that monetary poverty is being over-estimated for this group. This is due to the fact that the current monetary poverty measure used in Zambia does not consider economies of scale that occur in large households. Indeed, larger households can reduce some costs by sharing resources, such as bathrooms, for instance. This problem has already been identified and is part of the methodological review of the monetary poverty measure that is being carried out by ZamStats. Another possibility is that there may be non-financial beneficial spill-over effects in large households, such as older siblings being able to look after and help younger siblings with, say, homework.

Secondly, children of uneducated (primary or no education) and unmarried mothers are also significantly over-represented amongst money-poor households, compared to their MODA poverty status (significant at 10% level only in for the former group). Both these groups have a raised likelihood to be money poor and are therefore also worse off than other children in terms of their MODA indicators. However, these findings suggest that these mothers are partly able to compensate for their lack of income and mitigate the impact of monetary poverty on their children's wellbeing. In other words, they are not as badly off in MODA terms as they could have been, given their low level of income. Further research would be required to understand how these mothers are able to mitigate the effects of monetary poverty on their children.

Figure 18: Size of selected population groups, by monetary/MODA poverty status

Figure 19 shows the share of alcohol and tobacco (left) and education (right) in total household expenditures, by poverty status and number of deprivations. In money-poor households, the correlation between spending on alcohol/tobacco and deprivations is fairly weak, as many factors, including hard financial constraints, contribute to generating the observed deprivations in children.

In non-poor households, on the other hand, financial constraints are eased and wellbeing outcomes are, to a greater extent, determined by the choices that adults make. For instance, the graph shows that **non-poor households where children have 5 or more deprivations spend almost 7 times more proportionally on alcohol and tobacco and 5 times less on education, compared to children who have no deprivations.**

This clearly illustrates the shortcomings of a purely monetary conception of wellbeing, that does not distinguish between a dollar spent on, say, arms or drugs, that actively harm children, and a dollar spent on health or education, which are necessary for to ensure the child's wellbeing and development.

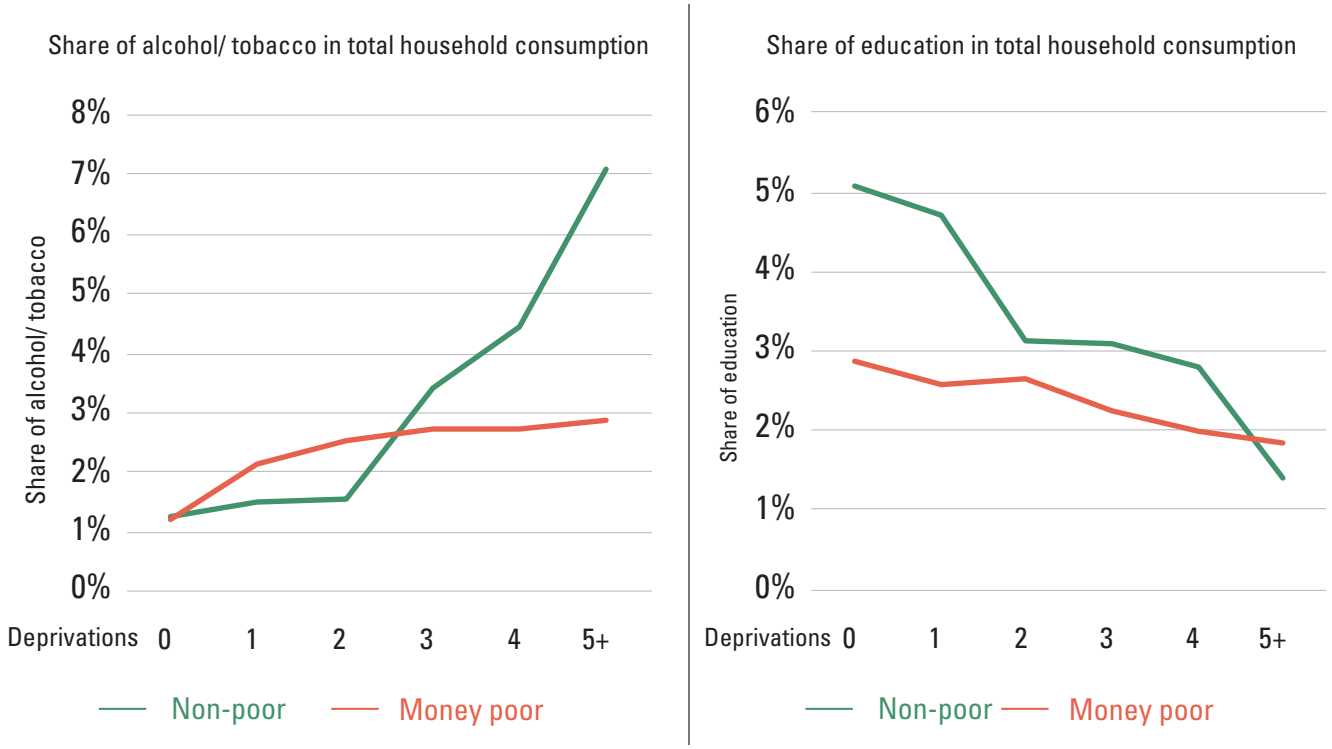

Figure 19: Shares of total household consumption (%), by poverty status and deprivations
Source: LCMS 2022 (author's calculations), Difference is statistically significant at 5% level (base=neither poor)

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CONCLUSION

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8 CONCLUSION

This report has analysed the wellbeing of children across 7 key dimensions of wellbeing: nutrition, health, education, housing, water, sanitation, and access to information. The analysis shows that **70.6% of Zambian children experience deprivations in two or more dimensions of wellbeing simultaneously.**

The **increase in child poverty since 2015 has been driven mostly by urban areas**, where the proportion of children with deprivations in 2 or more dimensions rose by nearly 10 percentage points from 32.3% to 41.8%. The increase in urban child poverty is due mainly to a deterioration in health and nutrition indicators, as well as access to information. This finding is consistent with the large increase in urban monetary poverty in recent years.

While **the overall rate of multidimensional child poverty is similar to the proportion of children who live in households that experience monetary poverty (65%),** it is not always the same households nor the same children who are affected by both conditions. This discrepancy is due mainly to two factors. First, while important, financial barriers are but one of the constraints preventing children from achieving their full potential. Equally important are behavioural issues and lack of knowledge about adequate feeding practices, for instance.

Secondly, monetary poverty measures access to resources at the household level. It does not tell us how resources are distributed within the household. Even if the household has the means to provide for the needs of the children, adults may decide to spend the money on other things or on household members. The analysis has shown, for instance, that non-poor households with deprived children tend to spend more on alcohol and tobacco, than other households.

The results presented in this report have highlighted a number of interesting patterns regarding child poverty that would merit further investigation. For instance, the analysis has shown that children with disabilities are disadvantaged in all dimensions of wellbeing, including – surprisingly – dimensions that are not child-specific, such as housing. This suggests that **there is a link between household poverty and childhood disability**. This is consistent with global evidence on the inter-connectedness between poverty and disability that both contribute negatively and reinforce each other.

Similarly, the findings suggest that **uneducated and unmarried women are able to partially compensate for their significant financial disadvantage by deploying mitigation strategies**. Further studies, including qualitative analysis, would be required to understand what those strategies are and how they can be supported.

REFERENCES

Alkire, S. and J. Foster (2011). "Counting and Multidimensional Poverty Measurements."Journal of Public Economics 95: 476-487.

Alkire, S. and M. E. Santos (2010). "Acute Multidimensional Poverty: A New Index for Developing Countries."OPHI Working Paper38, University of Oxford.

Atkinson, A. B. (1999). The Contributions of Amartya Sen to Welfare Economics. The Scandinavian Journal of Economics , 101 (2), 173-190.

Bradshaw, J., Hoelscher, P. and Richardson, D. (2006) An index of child well-being in the European Union, Social Indicators Research.

Brown, C., Ravallion, M., & Van De Walle, D. (2017). Are Poor Individuals Mainly Found in Poor Households?.

Child Poverty in the Developing World." Bristol: Centre for International Poverty Research, University of Bristol.

Claeson, M. and R. Waldman (2000). "The Evolution of Child Health Programmes in Developing Countries: from Targeting Diseases to Targeting People." Bulletin of the World Health Organization 78: 1234-1245.

De Milliano, Marlous, and Ilze Plavgo. 2014a. The basics of the Cross-Country Multiple Overlapping Deprivation Analysis (MODA). MODA In Brief 1: Innocenti Working Paper No. 2014-19. Florence: UNICEF Office of Research.

De Neubourg C., M. De Milliano and I. Plavgo (2014). "Lost (in) Dimensions: Consolidating progress in multidimensional poverty research", UNICEF, Office of research Working Paper, WP 2014 – 4. Florence: UNICEF Office of Research-Innocenti.

De Neubourg, C., J. Chai, M. de Milliano, I. Plavgo and Z. Wei (2012). "Step-By-Step Guidelines to the

De Neubourg, Chris, Jonathan Bradshaw, Yekaterina Chzhen, Gill Main, Bruno Martorano and Leonardo Menchini (2012) Child deprivation, multidimensional poverty and monetary poverty in Europe. Innocenti Working Paper No. 2012-02. Florence: UNICEF Office of Research.

De Neubourg, Chris, Marlous de Milliano, and Ilze Plavgo. 2014. Lost (in) dimensions: Consolidating progress in multidimensional poverty research. Innocenti Working Paper No. 2014-04. Florence: UNICEF Office of Research.

Deaton and Zaidi (2002), Haughton and Khandker (2009) and Hentschel and Lanjouw (1996). Development 6-12 March 1995, New York: United Nations Department of Publications.

Elwan, A. (1999). Poverty and disability: A survey of the literature (Vol. 9932, pp. 1-48). Washington, DC: Social Protection Advisory Service.

Gordon, D., S. Nandy, C. Pantazis, S. Pemberton, and P. Townsend (2003). "The Distribution ofChild poverty in the developing world. Policy Press, 2003.

Multiple Overlapping Deprivation Analysis (MODA)."Office of Research Working Paper, WP 2012-10. Florence: UNICEF Office of Research-Innocenti.

UN (1995). "The Copenhagen Declaration and Programme of Action." World Summit for Social

UN (2000). "United Nations Millennium Declaration 55/2", Resolution adopted by the General Assembly, United Nations.

UN CRC (1989). "Convention on the Rights of the Child." The General Assembly Resolution 44/25.

UNGA (United Nations General Assembly) (2006) Promotion and protection of the rights of children, Report of the Third Committee, New York: United Nations.

UNICEF (2007). "Global Study on Child Poverty and Disparities 2007-2008."New York: Guide, Division of Policy and Planning.

UNICEF (2018) "Zambia Multidimensional child poverty report based on LCMS 2015", Lusaka Zambia.

United Nations (UN). 1989. Convention on the Rights of the Child: Adopted and opened for signature, ratifi cation and accession by General Assembly resolution 44/25 of 20, November 1989, entry into force 2 September 1990, in accordance with article 49.

Wordsworth, Daniel; Mark McPeak and Thomas Feeny (2005), Understanding Children's Experience of Poverty: An Introduction to the DEV Framework, Working Paper 1, Christian Children's Fund, Richmond: VA, US.

ZamStat (2015). Zambia National Disability Prevalence Survey 2015. Survey Report. https://www.unicef.org/zambia/media/1141/file/Zambia-disability-survey-2015.pdf

Annex A - Statistical Annex

UNIT	Criteria	Group	Nutrition		Health		
			Wasting	Stunting	Dietary diversity	Untreated illness	No facility
CHILD	Age	0-4 years	5.1	41.5	10.8	1.7	63.5
		5-13 years	.	.	11.0	1.4	66.4
		14-17 years	.	.	10.7	1.6	67.0
	Sex	Boys	5.9	43.5	11.5	1.3	66.1
		Girls	4.3	39.7	10.2	1.7	65.8
	Disability	Has disability	0.0	58.9	14.7	3.8	79.4
		No disability	5.1	41.4	10.8	1.5	65.9
	Orphan	1+ parents dead	6.9	40.0	13.9	1.1	68.0
		Both parents alive	5.0	41.6	10.4	1.6	65.6
HOUSEHOLD	Area	Rural	4.3	46.2	13.2	1.3	75.4
		Urban	6.2	34.3	6.7	1.8	49.0
	Size	1-5 members	5.1	43.2	10.9	1.3	64.8
		6+ household members	5.0	40.1	10.8	1.6	66.6
HEAD	Education	Primary/none	4.4	46.1	15.8	1.5	74.2
		Secondary/higher	5.4	39.6	8.3	1.5	61.7
	Disability	Has disability	3.9	45.2	16.1	3.4	68.5
		No disability	5.1	41.4	10.7	1.5	65.9
MOTHER	Education	Primary/none	5.1	47.6	14.7	1.0	70.3
		Secondary/higher	5.2	38.4	8.3	2.2	59.7
	Marital status	Never married	4.4	43.1	5.4	1.6	59.2
		Married/divorced/ widowed/cohab	5.3	41.4	11.4	1.8	64.2
	Disability	Has disability	5.0	49.2	0.9	9.8	76.1
		No disability	5.2	41.6	10.7	1.7	63.5
	Age at birth	Under 18	5.3	45.3	12.0	3.1	73.2
		18+ years	5.2	41.4	10.5	1.7	62.9

UNIT	Criteria	Group	Education			Housing	
			Out-of-school	Grade -for-age	Incomplete primary	Crowded	Construction
CHILD	Age	0-4 years	.	.	.	9.7	13.6
		5-13 years	23.7	21.8	.	10.2	12.0
		14-17 years	.	22.0	35.7	9.5	11.1
	Sex	Boys	25.4	23.8	39.8	10.2	12.1
		Girls	22.0	20.0	31.8	9.7	12.1
	Disability	Has disability	45.0	37.4	53.5	18.8	22.1
		No disability	23.6	21.8	35.6	9.9	12.1
	Orphan	1+ parents dead	25.8	20.4	39.7	10.5	12.3
		Both parents alive	23.4	22.2	34.7	9.8	12.1
HOUSEHOLD	Area	Rural	28.9	27.3	46.7	13.2	17.8
		Urban	13.8	12.0	17.0	4.2	2.0
	Size	1-5 members	25.2	21.2	33.2	5.1	14.2
		6+ household members	23.0	22.2	36.9	12.8	10.9
HEAD	Education	Primary/none	35.4	29.1	55.9	14.4	19.4
		Secondary/higher	17.1	17.8	24.8	7.6	8.4
	Disability	Has disability	29.6	24.5	39.1	11.1	14.4
		No disability	23.6	21.8	35.6	9.9	12.1
MOTHER	Education	Primary/none	.	.	.	14.3	19.5
		Secondary/higher	.	.	.	7.0	10.3
	Marital status	Never married	.	.	.	14.0	15.1
		Married/divorced/ widowed/cohab	.	.	.	9.0	13.4
	Disability	Has disability	.	.	.	7.6	6.2
		No disability	.	.	.	9.6	13.7
	Age at birth	Under 18	.	.	.	10.2	19.9
		18+ years	.	.	.	9.6	13.2

UNIT	Criteria	Group	Water		Sanitation		Info.
			Unimproved	Distance>1km	Unimproved	Waste disposal	No devices
CHILD	Age	0-4 years	22.4	4.8	53.9	26.6	37.1
		5-13 years	25.6	4.9	56.7	25.7	37.3
		14-17 years	24.1	6.0	53.0	24.7	34.4
	Sex	Boys	24.8	5.3	55.4	25.9	36.7
		Girls	24.5	5.0	55.2	25.5	36.4
	Disability	Has disability	40.5	7.8	64.6	30.5	60.1
		No disability	24.5	5.1	55.2	25.6	36.4
	Orphan	1+ parents dead	27.6	5.7	59.1	24.8	44.7
		Both parents alive	24.2	5.1	54.7	25.8	35.4
HOUSEHOLD	Area	Rural	33.7	6.8	73.4	31.3	47.5
		Urban	8.4	2.1	23.0	15.7	17.0
	Size	1-5 members	22.4	4.2	53.5	25.0	41.1
		6+ household members	25.9	5.7	56.3	26.0	33.9
HEAD	Education	Primary/none	34.1	7.3	73.3	34.9	55.1
		Secondary/higher	19.7	4.1	46.0	20.9	27.0
	Disability	Has disability	29.2	6.6	63.5	20.8	45.6
		No disability	24.5	5.1	55.1	25.8	36.3
MOTHER	Education	Primary/none	30.2	4.5	72.1	35.8	54.9
		Secondary/higher	18.4	4.9	44.1	21.5	27.4
	Marital status	Never married	19.1	5.0	48.6	23.9	32.3
		Married/divorced/ widowed/cohab	23.2	4.8	55.1	27.1	38.0
	Disability	Has disability	16.6	12.0	54.3	21.3	31.8
		No disability	22.7	4.7	54.2	26.7	37.3
	Age at birth	Under 18	29.2	9.5	67.1	29.5	37.3
		18+ years	22.2	4.5	53.4	26.5	37.3

Annex B - Z-MODA index: indicators

DIMENSION/ Indicator	Definition
NUTRITION	
Infant and Young Child Feeding: Exclusive breastfeeding	Child not exclusively breastfed.
Infant and Young Child Feeding: Meal Frequency	Currently breastfeeding children: Child 6-8 months has not received a minimum of 2 complementary feedings a day; 9-23 months has not received at least 3 complementary feedings. Currently non-breastfeeding children: Child between 6-23 months has not received at least 4 feedings a day. 24-59 months: Child not having a minimum of four meals a day.
Weight for Height (Wasting)	Child's weight-for-height/length Zscore is below minus two standard deviations (-2 SD) from the median of the WHO reference population, considered thin (wasted) and acutely malnourished.
Stunting	**Child's height-for-age Zscore is below minus two standard deviations (-2 SD) from the median of the WHO reference population, considered stunted and chronically malnourished.**
Insufficient dietary diversity	**Ate neither meat/fish/fruit in the past 7 days or had no vegetables**
HEALTH	
Full Immunization (BCG, 3 Polio, 3 DPT, Measles)	Child has not received all basic vaccinations by the recommended date (Tuberculosis (BCG) by age of 12 months; child 12-59: has not received a vaccination against TB (BCG), and three doses of each of the following: Diphtheria; Pertussis; Tetanus / Hepatitis B/HaemophilusInfluenzae type b (DPT-HepB-Hib). Additionally, they must be vaccinated against Polio (3) and a Measles, within the first twelve months from birth.
Did not consult while sick/injured	**Has been ill or injured in past 2 weeks, but did not consult medical facility or consulted traditional healer/ faith leader.**
No medical facility	**No know facility, or nearest facility>10km away, or >30 minutes away.**
EDUCATION	
Compulsory School Attendance	Child of compulsory school age is not currently attending school.
Grade-for-Age	Child beyond primary school age with no or incomplete primary educationattending school but 2 or more years behind the corresponding grade for the age.
Primary School Attainment	Child beyond primary school age with no or incomplete primary education

Age group	Comments/change since 2015
0-5 months	This indicator has been removed based on new MODA guidelines.
6-59 months	Cannot be calculated, as there was a wrong skip on question 8 sect 13 (may also not be needed due to new MODA guidelines)
3-59 months	Participants highlighted that wasting may be due to temporary illness , and therefore need to be complemented with other indicators.
3-59 months	**Recommendation to add to address shortcomings of wasting indicator.**
1-17 years	**Recommendation to add as children aged 6-17 do not currently have any nutritional indicators.**
0-59 months	Could not be calculated as question 13 was missing from the dataset for section 13.
0-17 years	**Recommendation to add.**
household	**Recommendation to add.**
7-13 years	No change. Original 2015 rate could not be exactly replicated as syntax was not provided.
7-17 years	No change. Original 2015 rate could not be exactly replicated as syntax was not provided.
14-17 years	No change. Original 2015 rate could not be exactly replicated as syntax was not provided.

12-17 years	Has been removed from index based on new MODA guidelines. NOTE CHANGE IN AGE THRESHOLD IN LCMS 2022
5-15 years	Has been removed from index based on new MODA guidelines.
household	Suggesting to make those with bottled water improved
household	Indicator is redundant because it is included in unimproved water. Suggesting to make them interact: not deprived in access to water if they treat it.
household	**Recommended addition.**
household	OK. No change.
household	OK, No change.
household	**Should this be added as a deprivation? It is in some countries (ASK UNICEF)**
household	No change. Original 2015 rate could not be exactly replicated as syntax was not provided.
household	Walls should be added. Recommendation to drop roof question as (a) it is less important than floor, and (b) the questionnaire doesn't distinguish between high-end and makeshift thatched roofs.
household	Suggestion to add internet access to definition, as information can be accessed that way.

PROTECTION	
Child Marriage/Cohabitation	Child got married or is cohabiting with the partner, or ever married
Child labour	Child younger than 15 years of age is engaged in any income generating activity or farming.
WATER	
Drinking water source	Household main source of drinking water is unimproved. Unimproved water sources: unprotected well, unprotected spring, surface water (river, dam lake ponds, stream, stream, canal, irrigation channel), tanker truck, cart with small tank, other. Also, deprived if main source is bottled water and the source of main non-drinking water is unimproved.
Water treatment	Unimproved water source is not treated or is not appropriately treated. Appropriate treatment method: boiling, adding bleach or chlorine, using a water filter, using solar disinfection.
Distance to water	**More than 2km from water source**
SANITATION	
Access to improved sanitation	Household usually uses unimproved toilet facility: pit latrine without slab or open pit (Own, communal or from neighbor's/another household's), no facility, bush or field, bucket toilet, other. Improved toilet facility: Flush toilet inside/outside the household (if flushed to piped sewer system, to pit latrine, to septic tank.,), Pit latrine with slab (Own, Communal or from neighbor/another household), composting toilet, Aqua privy.
Garbage disposal	Household's garbage disposal is not refuse collected, or pit, or dumped in designated places.
Shared toilet	**Neighbour or communal (or we can use the question asking how many households share the toilet)**
HOUSING	
Overcrowding	Household has on average more than four people per occupied room (excluding bathrooms and toilets)
Housing Material (Floor and roof)	Both roof and floor are made of natural materials, which are not considered permanent. Floor: mud, soil, sand, no floor; Roof: no roof, thatch/palm leaf/grass, mud, plastics.
INFORMATION	
Availability of Information Devices	Household does not report having at least one of the following information devices: TV, Radio, PC, phone, mobile phone.

LEGEND:

No change
No change with comment.
New indicator
Indicator has been changed
Could not be computed: Information missing or not comparable in 2022
Indicator has been removed

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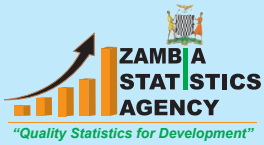

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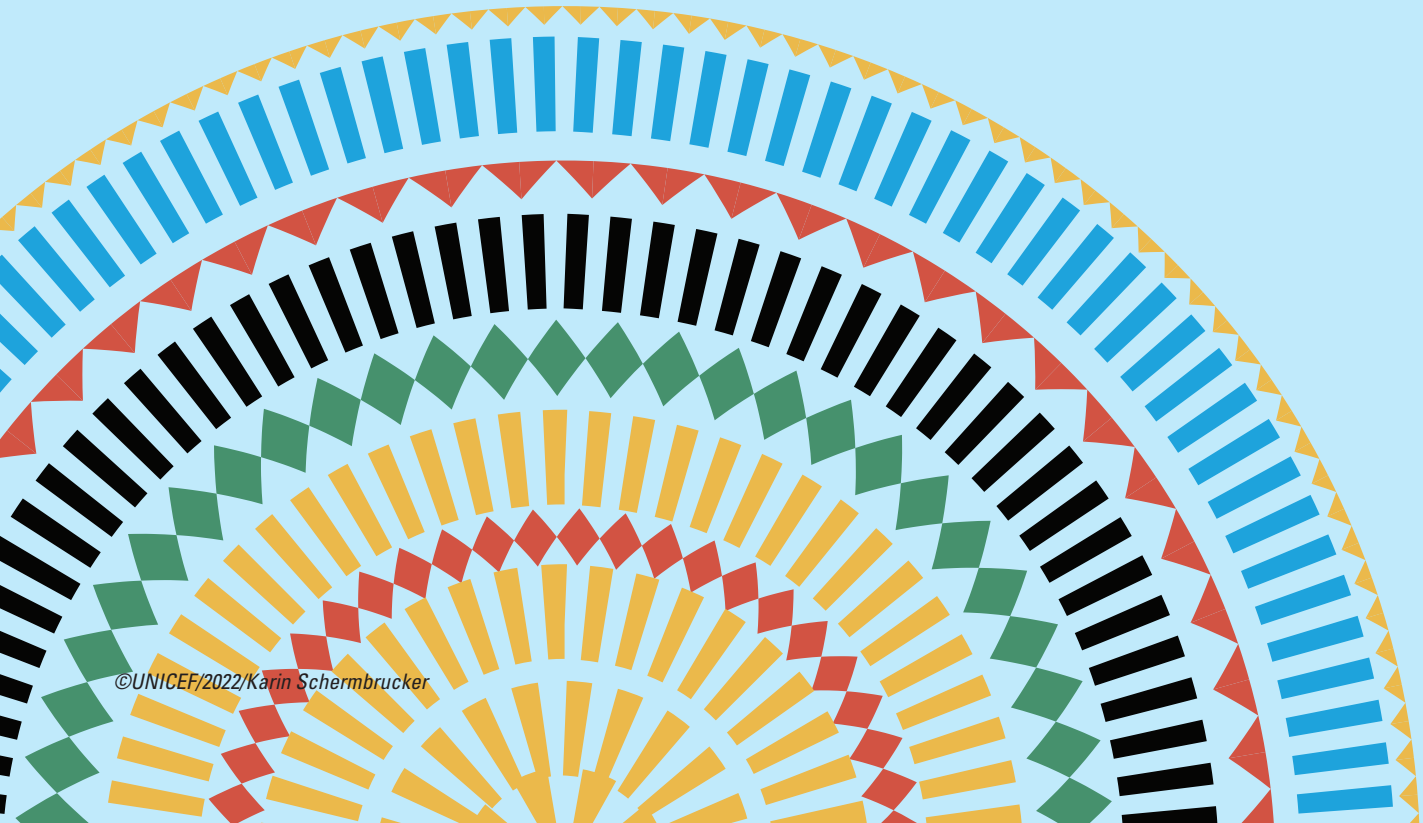

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