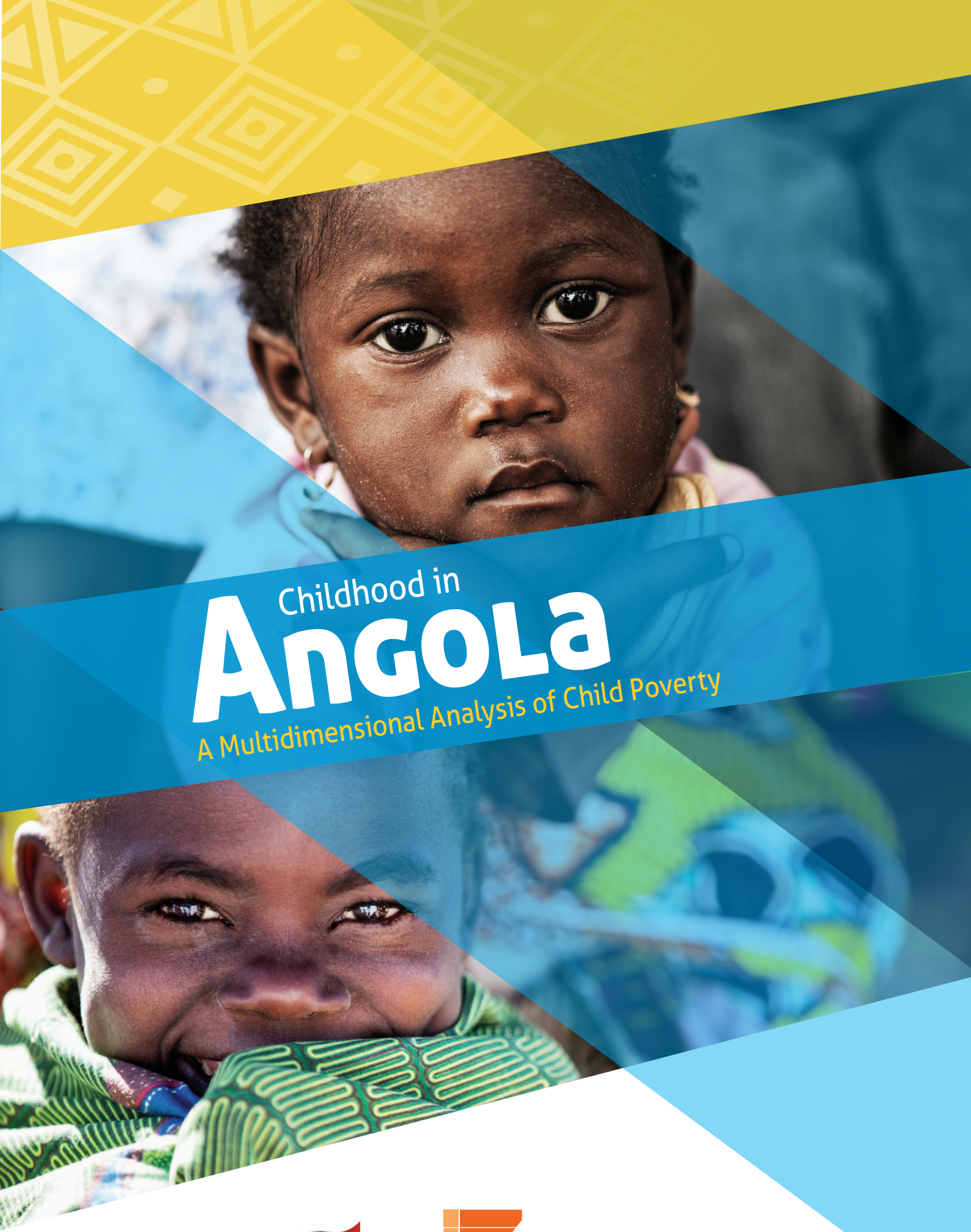

Childhood in Angola

A Multidimensional Analysis of Child Poverty

Governo de Angola

INE
Instituto Nacional de Estatística

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List of Abbreviations

A-MODA	Angola Multiple Overlapping Deprivation Analysis
CRC	Convention on the Rights of the Child
DPT	Diphtheria Pertussis Tetanus
ECD	Early Childhood Development
FGT	Foster-Greer-Thorbecke
IIMS	Multiple Indicators and Health Survey
INE	National Statistics Institute
ITN	Insecticide-Treated Mosquito Net
MAD	Minimum Acceptable Diet
MDD	Minimum Dietary Diversity
MDG	Millennium Development Goals
MMF	Minimum Meal Frequency
MODA	Multiple Overlapping Deprivation Analysis
OPHI	Oxford Poverty and Human Development Initiative
PAV	Programa Nacional de Vacinação
SDG	Sustainable Development Goals
SPRI	Social Policy Research Institute
WHO	World Health Organization

1. Introduction

This study aims at defining and measuring national multidimensional child poverty in Angola using the Multiple Overlapping Deprivation Analysis (MODA) methodology developed by UNICEF. The project consists of an in-depth analysis of child deprivation and vulnerability in that country using the Angola Multiple Indicators and Health Survey (IIMS) 2015-2016. This makes it possible to identify who the deprived children are, and the deprivations they face among the set of dimensions that were nationally identified as impeding their survival and development. The analysis identifies to what extent children in Angola are deprived in terms of adequate access to nutrition, health, child protection, malaria prevention, education, information, housing, water and sanitation.

Through an exhaustive examination of the above-mentioned wide range of dimensions regarding the main deprivations that children may face in Angola, the analysis provides timely and relevant evidence for advocacy and programmatic purposes. It also provides the Government with a baseline for the child-related Sustainable Development Goal (SDG) 1.2 indicator (United Nations (UN), 2015) which states:

> "By 2030 to reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions."

Thus, this study contributes to a better understanding of the child deprivation situation in Angola, and also provides a baseline for the implementation of child-related policies aimed at improving child well-being for their sustainable participation in society.

Children's deprivations are multifaceted and interrelated. It is fairly commonplace to observe children who are deprived in more than one basic need or essential service. Therefore, a multidimensional deprivation analysis, such as the Angola Multiple Overlapping Deprivation Analysis (A-MODA), provides a comprehensive understanding of child well-being that is coherent in relation to the above argument. This report focuses on ALL the children of Angola, i.e. the population aged 0 to 17 years. Given that the needs of children differ depending on their age, the analysis evaluates the variations in deprivations across four age groups: 0-23 months, 24-59 months, 5-11 years and 12-17 years, considering an age-group-specific set of indicators and the dimensions of well-being.

The report consists of three core parts and a conclusion: Section 2 gives an overview of the MODA methodology and describes the data, the decisions taken and choices made in terms of the dimensions, indicators and thresholds selected for the study. Section 3 provides a full picture of the proportion of children deprived across multiple dimensions in Angola. Section 4 shows the main findings in the analysis of child deprivation by age group, examining this phenomenon based on two conceptual and technical axes, with A-MODA consisting of single deprivations and multiple overlapping deprivations. These two analyses complement each other, and in this way provide a comprehensive picture of the situation of children in Angola. They also identify the principal areas and challenges to be addressed for improving child well-being. The last section contains the conclusion of the report.

Unless otherwise stated, all tables and figures in this publication are authors' calculations using the Angola IIMS 2015-2016 as source.

2. Methodology

2.1 MODA: An Overview of the Methodology

Child poverty and deprivation hinders the physical, psychological and social development of a child. A comprehensive analysis of the situation of children in a country provides concrete evidence that may serve as a basis to inform policies and interventions to enhance children's sustainable development and well-being.

The monetary approach to poverty has traditionally been used to identify poor children. According to this approach, a child is identified as poor if he/ she lives in a household whose income or expenditure is below a given poverty line. Although financial constraint is a very important determinant of child deprivation, monetary poverty and deprivation do not always fully overlap. A household with an adequate level of income may not necessarily redistribute the resources appropriately within the household according to the specific needs of each of its members. This fact has particular significance for children since they are not the decision-makers in the household, while they have specific needs for goods and services (see De Neubourg et al., 2014).

This study uses the **Multiple Overlapping Deprivation Analysis (MODA) methodology**, developed by the UNICEF Office of Research - Innocenti, which provides a comprehensive approach to the multiple aspects of child poverty and deprivation.[1] MODA adopts a holistic definition of child well-being, measuring individual access to various goods and services that are crucial for a child's survival and development. The child is at the centre of the MODA approach, whose multidimensional deprivation analysis complements monetary/consumption-based measures of poverty to provide a more comprehensive picture of child well-being. Thus, MODA distinguishes between these two main concepts of poverty and jointly analyses/compares them, whenever data allows for this exercise, and it identifies the overlap in these two forms of poverty among children.

MODA recognizes that a **child's experience of deprivation is multifaceted and interrelated**, therefore multiple, overlapping deprivations are more likely to occur, and with deeper adverse effects, in socioeconomically disadvantaged groups. The "holistic approach" to children's needs emphasizes that children's well-being cannot be compartmentalized into sectors, for example, health, nutrition and education, and that the multiple aspects of children's lives need to be placed simultaneously at the centre of any deprivation analysis. This ultimately contributes to the identification of the most vulnerable children, namely, those with the higher number of deprivations, and to understanding the relationship between different deprivations.

The MODA methodology builds on existing approaches of multidimensional poverty measurement, such as the UNICEF Global Study on Child Poverty and Disparities (see Gordon et al., 2003; UNICEF, 2007) and the Oxford Poverty and Human Development Initiative's (OPHI) Multidimensional Poverty Index (Alkire and Santos, 2010; Alkire and Foster, 2011). However, MODA has four main characteristics that distinguish it from existing studies in the field of child poverty and deprivation measurement:

[1] Detailed information on the MODA methodology can be found in the step-by-step guidelines to MODA (De Neubourg et al., 2012) and www.unicef-irc.org/MODA.

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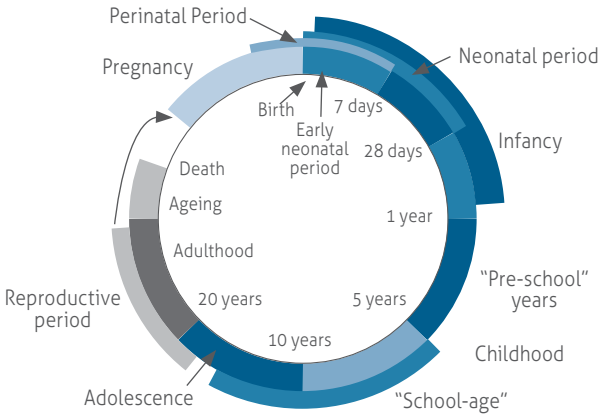
1. It is **child-centred**. The child is the unit of analysis rather than the household since children experience deprivations and poverty differently from adults, especially in regard to developmental needs.
2. It adopts a **life-cycle approach** (Figure 1) analysing separate age groups to reflect the fact that children's needs are not homogeneous across their childhood, as children have different needs during early childhood, primary childhood and adolescence, for example.

Figure 1. Life-Cycle Approach



Source: Claeson and Waldman (2000)

3. It enhances knowledge of sector-by-sector approaches with an **overlapping deprivation analysis**. This analysis indicates which of the multiple facets of child poverty are experienced simultaneously, and it also highlights the various severity levels of deprivation.
4. It applies a whole child-oriented approach by measuring the **prevalence and the depth of deprivations** each child experiences simultaneously, thereby identifying the most vulnerable children. Thus, the focus is on equity as highly deprived groups in society are the targets. To the same end, profiles are created that include children's geographical and socioeconomic data.

UNICEF's MODA is a **flexible methodology** that adapts to different input factors. In Angola, a N-MODA (National-MODA) was conducted. This is an application of the MODA methodology specific to the national context using recent and high-quality survey data with customized choices of age groups, dimensions and thresholds. N-MODA's aim is to: (i) capture national values concerning child development; (ii) explore the profiles of deprived children, to locate them both geographically and socially;[2] (iii) improve the understanding of how the different deprivations by sector overlap to inform which deprivations may need to be addressed simultaneously; (iv) inform equity-based public policy responses to child deprivation; and (v) indicate deprivation coincidences that need further theoretical and empirical elaboration.

[2] Profiling forms the basis for the equity analysis, and shows the differences between geographical regions, residential areas, parents' socioeconomic situation, wealth and other variables.

2.2 Measuring Child Deprivations in Angola

Measuring child deprivations for the N-MODA analysis requires the choice of the right data set and making decisions in terms of dimensions, indicators and thresholds of deprivations that better explain multiple deprivations among children in Angola. The next subsections provide details about these considerations.

2.2.1 Angola-MODA: Data

Multidimensional child poverty analysis in Angola is a country-specific application of the MODA methodology: the **Angola Multiple Overlapping Deprivation Analysis**. To more accurately capture the deprivations in basic goods and services experienced by children in Angola, the measures of child deprivation were customized to fit the national context within the framework offered by the N-MODA methodology.

This study uses the Angola Multiple Indicators and Health Survey (IIMS) 2015-2016 data set. Some of the reasons that led to the choice of this data set include the following points: (i) the fact that this was the most recent nationally representative survey available (2016);(ii) the immediate availability of the data set; and (iii) the wealth of indicators pertaining specifically to children and their vulnerabilities. These characteristics made this data set especially suitable for use in a child-specific national multidimensional poverty analysis.

The N-MODA analysis was performed for the total population of children under 18 years old. The Angola IIMS 2015-2016 data set covers a representative sample of about 16,109 households and 41,647 children under 18 years old residing in both rural and urban areas of the country (see Appendix A for more details about the sample characteristics). The survey design produced reliable estimates at the national, provincial and rural/urban levels, and was also a source of sound information on the population's sociodemographic characteristics, such as sex, age, schooling level, and socioeconomic quintiles. The IIMS 2015-2016 data covers various aspects of child well-being including health, nutrition, education, access to information, housing and sanitation, among others. This data provides very apposite statistics and multifaceted information for undertaking a child deprivation analysis for Angola.[3]

2.2.2 Dimensions, Indicators and Age Group

The analysis of multiple and overlapping deprivations requires the definition of dimensions of well-being, indicators and deprivation thresholds that reflect the specific context within which children in Angola evolve. The MODA methodology prefers the use of international standards as guiding principles for selecting the most relevant dimensions of child well-being, but adapted to the local context. Children's rights enshrined in the United Nations Convention on the Rights of the Child (CRC) (UN, 1989), in combination with the World Summit for Social Development (UN, 1995) and the Millennium Development Goals (MDGs) (UN, 2000; United Nations Development Programme (UNDP), 2003) and the more recent Sustainable Development Goals (UN, 2015), have served as a basis for the construction of a core set of dimensions that are essential to any child's development, irrespective of their country of residence, socioeconomic status or culture.

[3] See National Statistics Institute (INE) et al. (2017) for additional information about the Multiple Indicators and Health Survey for Angola.

2. Methodology

During workshops in Luanda, Angola, with attendees from the National Statistics Institute (INE) and members of the Ministry of Labour and Social Affairs and during meetings with key national stakeholders and sectoral experts of Angola, a set of dimensions, indicators and thresholds were chosen, in collaboration with the Social Policy Research Institute (SPRI), in order to provide evidence and serve as a guideline for the tracking of target 1.2 of SDG 1, specifically for children. Stakeholders played an active role in discussing and giving advice on the most relevant dimensions and indicators to measure non-monetary poverty in the country, thereby contributing to the contextualization of child poverty in in Angola.

The following elements were taken into account when defining the dimensions, indicators and thresholds of deprivations for the application of the N-MODA in this study: the opinions and interests of the national stakeholders combined with national norms and standards; theories written by scholars, researchers and academia; explicit or implicit assumptions about what people value or should value; the "public consensus"; empirical evidence regarding what children, or others, value most in what constitutes the elements of well-being; and data-driven feasibility assessments[4] (see Appendix B for details of these parameters).

Taking the **child as the unit of analysis**, the MODA methodology acknowledges the heterogeneity of children's needs and deprivations according to their ages. Therefore, following the life-cycle approach, the dimensions, indicators and thresholds used to assess the deprivations of children in Angola have been defined for different age groups to better capture the unique needs of children in relation to their developmental stage: early childhood, primary childhood and adolescence. Hence, to study child deprivation in Angola and the dimensions and indicators corresponding to each group, children have been divided into four groups according to the following age categories: **0-23 months, 24-59 months, 5-11 years, and 12-17 years** (Figure 2).

[4] Eight main criteria were used to select feasible indicators: relevance; attribution to dimensions; variance; coverage; absence of measurement error; scalability; parsimony; and internal consistency.

Figure 2. Selected Age Groups, Dimensions and Indicators

0-23 MONTHS	24-59 MONTHS	5-11 YEARS	12-17YEARS
NUTRITION • Infant and Young Child Feeding • Micronutrients Consumption (Vitamin A)			
HEALTH • Full Immunization • Skilled Attendants at Birth	**HEALTH** • Skilled Attendants at Birth		
MALARIA PREVENTION • Insecticide Treated Mosquito Net (ITN)	**MALARIA PREVENTION** • Insecticide Treated Mosquito Net (ITN)	**MALARIA PREVENTION** • Insecticide Treated Mosquito Net (ITN)	**MALARIA PREVENTION** • Insecticide-Treated Mosquito Net (ITN)
SANITATION • Improved Toilet Facility • Sharing of Toilet Facility	**SANITATION** • Improved Toilet Facility • Sharing of Toilet Facility	**SANITATION** • Improved Toilet Facility • Sharing of Toilet Facility	**SANITATION** • Improved Toilet Facility • Sharing of Toilet Facility
HOUSING • Housing Materials • Solid Cooking Fuel • Overcrowding	**HOUSING** • Housing Material • Solid Cooking Fuel • Overcrowding	**HOUSING** • Housing Material • Solid Cooking Fuel • Overcrowding	**HOUSING** • Housing Materials • Solid Cooking Fuel • Overcrowding
WATER • Drinking Water Source • Water Treatment • Water Distance	**WATER** • Drinking Water Source • Water Treatment • Water Distance	**WATER** • Drinking Water Source • Water Treatment • Water Distance	**WATER** • Drinking Water Source • Water Treatment • Distance to Water
	CHILD PROTECTION • Birth Certificate	**CHILD PROTECTION** • Birth Certificate	**CHILD PROTECTION** • Birth Certificate
EXPOSURE TO MEDIA • Access to Information Devices	**EXPOSURE TO MEDIA** • Access to Information Devices	**EXPOSURE TO MEDIA** • Access to Information Devices	**EXPOSURE TO MEDIA** • Access to Information Devices
		EDUCATION • School Attendance • Grade-for-Age	**EDUCATION** • School Attendance • Grade-for-Age • Primary School Attainment

Each of the age groups listed above includ**e child- and household-related indicators**. Household-related indicators have been used to inform the dimensions of *Sanitation, Housing, Water,* and *Exposure to the Media*. These indicators measure child deprivation in the immediate environment where the child grows up, therefore they apply to all age groups.

In contrast to household-related indicators, some dimensions may not apply to the entire child population. Even when the same dimension applies to different age groups, the deprivation indicators at the child level may be different across age groups. There are several reasons for this, including empirical consistency and data constraints. For example, *Nutrition* is one leading dimension for measuring deprivation among younger children, while *Education* is a dimension that better measures the development of school-aged children. Prioritizing dimensions for children of different ages is also necessary in the data analysis, in case indicators and dimensions are affected by missing data and would have to be omitted.

More precisely, for infants 0-11 months old and children in their early childhood aged 12-59 months, age-specific indicators on *Nutrition* and *Health* have been selected. Exclusive breastfeeding was used as the Infant and Young Child Feeding indicator for children younger than 6 months. However, for children 6 months or older, a variable combining Minimum Meal Frequency (MMF) and Minimum Dietary Diversity (MDD) aspects was used to assess the deprivation for

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this indicator. In the case of Health's indicator Full Immunization, it considers whether the child received all the basic vaccinations by the recommended age.[5]

The *Education* dimension only covers school-aged children, those aged 6 to 17 years, and includes indicators that are consistent with school requirements at different ages. For example, for secondary school-age children, involving 12-17 year olds, the analysis has included individual level indicators on child's education attendance. This includes those being behind in school, and not completing the primary cycle of education, while for children of primary school age (6-11 years) only the first two indicators have been considered. With regard to the indicator on *Child Protection*, Birth Certificate, having a birth certificate is deemed relevant to protect children, while being only registered is not enough to avoid deprivation. Moreover, this indicator has only been considered relevant in Angola for children aged 2 to 17 years, who may have limited access to specific goods and services due to not having this certificate.

According to the MODA methodology, **a child is identified as deprived in a dimension if he/she is deprived in at least one of the indicators constituting the dimension.** Following the union approach[6], all the indicators included in a dimension are equally weighted, as the choice of more than one indicator to inform one dimension is done in such a way that indicators complement each other in the identification of different equally important aspects of the child's deprivation in that respective dimension.

Thus, the selection of the indicators was made on the basis that they all partly explain the realization, or lack thereof, of the child's rights. For example, a child aged 6 to 23 months was considered deprived in the *Nutrition* dimension if he/she had not received a Minimum Acceptable Diet (MAD), or if he/she had not received Vitamin A doses by the recommended age. The child was non-deprived in Nutrition only if he/she had received both a MAD and the Vitamin A doses by the recommended age. Moreover, since each of the selected dimensions reflect a basic right and need of children in Angola, they have been assigned the same importance in the analysis.

At the multidimensional level, MODA uses the cut-off approach *($0 < K \leq d$)*. A cut-off point, or "deprivation threshold" *(k)* defines at what point a child is considered to face multidimensional deprivation. For example, k=3 would indicate a child is facing at least three simultaneous deprivations, which would categorize the child as multidimensionally poor. For analysing multidimensional poverty in Angola, a consensus was reached on using the deprivation threshold of k=3 for this study.

Numerous **profiling variables** have been selected to define child vulnerability across all dimensions. MODA uses profiling variables to describe the characteristics of the most vulnerable children in Angola. In this way, the analysis can more clearly map child deprivation and facilitate the design of the most suitable social protection responses to support those who need it the most. The selection of profiling variables has mostly been conditioned by data availability.

Based on the previous selection of dimensions, indicators and thresholds of deprivation, the study uses different complementary ways for analysing the deprivations that children of different age groups experience:

[5] Basic vaccinations are: BCG, Polio 0 to 4, DPT (DPT-HepB-Hib) 1 to 3, Measles and Yellow Fever.
[6] MODA uses the union approach when combining indicators into dimensions to identify children deprived in any of the selected indicators. This approach implies that every child who is deprived in at least one indicator in a given dimension will be considered deprived in the said dimension. At this stage, the approach is not sensitive to the severity of the deprivation because it implies the equal weight of indicators thereby making deprivation in a dimension independent of the number of indicators a child is deprived of (De Neubourg et al, 2012).

a) **Sector-specific (single deprivation):** the percentage of children deprived in each dimension and in each indicator has been calculated to provide first-hand insight into which deprivations are particularly important for children of the different age groups.

b) **Distribution of the number of dimensions children are deprived in:** the deprivations per child have been counted to give an overview of the distribution of all deprivations among the different age groups and according to different background characteristics (i.e. profiling variables). The deprivation count has also allowed the undertaking of an analysis of the depth of multidimensional deprivation.

c) **Multidimensional deprivation indices:** several multidimensional deprivation indices have been calculated to provide different summary statistics:

   i. The headcount ratio (H), to look at the incidence of simultaneous deprivation in the various dimensions; [7]

   ii. The average intensity (A), to look at the number of deprivations a deprived child experiences as a percentage of all possible deprivations; and

   iii. The adjusted deprivation headcount (M_0), to capture both the incidence and intensity of deprivation.

d) **Multidimensional deprivation overlaps:** the analysis has looked at the different combinations of deprivations that are experienced simultaneously, and it has calculated the number of children suffering from these deprivations concurrently.

This report summarizes the most salient results of the Multiple Overlapping Deprivation Analysis among children in Angola, thereby providing a deprivation profile.

[7] The indices have been calculated using the Alkire and Foster (2011) methodology.

3. Multidimensional Child Deprivation in Angola

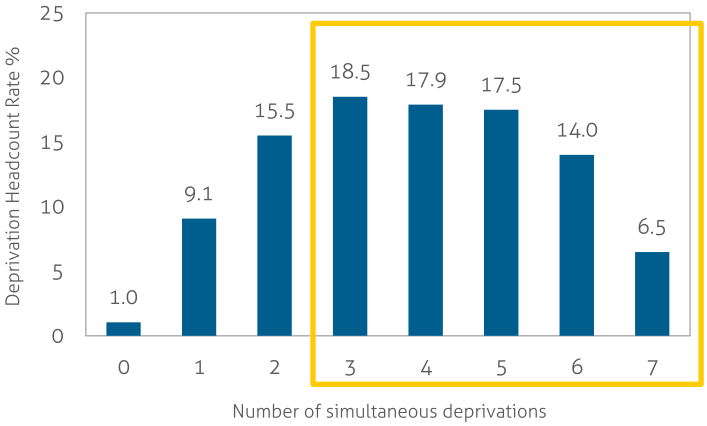
This section aims at providing a baseline figure of the children of Angola who are deprived in multiple areas by taking into account all children from 0 to 17 years old. These results can serve as the first measure of evaluating progress towards the achievement of target 1.2 of SDG 1 for children in Angola, and to understand the main deprivations and the characteristics of the most vulnerable children.

3.1 How Many Children are Deprived and What are They Deprived Of?

An understanding of the severity of deprivations faced by children requires an in-depth examination of whether the deprivations are experienced simultaneously or not. This leads to the identification of the most vulnerable children, that is, children who experience several deprivations at the same time. The results presented in this section can serve as a baseline measure of target 1.2 of the Sustainable Development Goal national agenda on measuring levels of deprivation and multidimensional poverty in Angola, which will in turn contribute to the monitoring of national progress in reducing child poverty.

Figure 3 shows the distribution of the number of simultaneous deprivations experienced by each child in Angola. According to this figure, only one per cent of the children in Angola are not deprived. If children are deprived, they are mostly deprived in three, four or five dimensions simultaneously, while **three out of four children under 18 years old suffer from three to seven deprivations at a time.** This shows the depth of multidimensional deprivation among children in Angola.

Figure 3. Distribution of the Number of Deprivations for All Children 0-17 Years Old



3. Child Deprivation

To further explain this situation and capture the multiple deprivations that children face in a unique measure, we provide information on the depth and severity of deprivations considering all possible deprivation thresholds using multidimensional deprivation indices. These indices facilitate the monitoring of and communication around multidimensional child poverty and its evolution in Angola. The multidimensional deprivation indices in Table 1 show the overall incidence of poverty, both the percentage of multidimensional child poverty and the intensity of poverty suffered by these children and the percentage of deprivations experienced by each child on average.

Table 1. Multidimensional Deprivation Indices for Children 0-17 Years Old

NUMBER OF DEPRIVATIONS	MULTIDIMENSIONAL DEPRIVATION HEADCOUNT (H), %	AVERAGE NO. OF DEPRIVATIONS AMONG THE DEPRIVED (A)	AVERAGE INTENSITY AMONG THE DEPRIVED (A), %	ADJUSTED DEPRIVATION HEADCOUNT RATIO (M_0)
1-7 deprivations	99.0	3.9	55.4	0.55
2-7 deprivations	89.9	4.2	59.6	0.54
3-7 deprivations	74.4	4.6	66.1	0.49
4-7 deprivations	55.8	5.2	73.8	0.41
5-7 deprivations	38.0	5.7	81.6	0.31
6-7 deprivations	20.5	6.3	90.2	0.19
7 deprivations	6.5	7.0	100.0	0.07

The deprivation headcount *(H)* provides the percentage of deprived children for each of the possible multidimensional deprivation cut-offs. As with the poverty gap in monetary poverty analyses, the average intensity among the deprived children *(A)* gives an indicator of the depth of deprivation. M_0 is a summarized index aggregating the deprivation headcount and intensity such that it captures increases in the poverty index if an already poor child becomes deprived in an additional dimension. The deprivation threshold, *k*, refers to the number of deprivations used as a cut-off point for defining a child as being "multidimensionally poor or deprived".

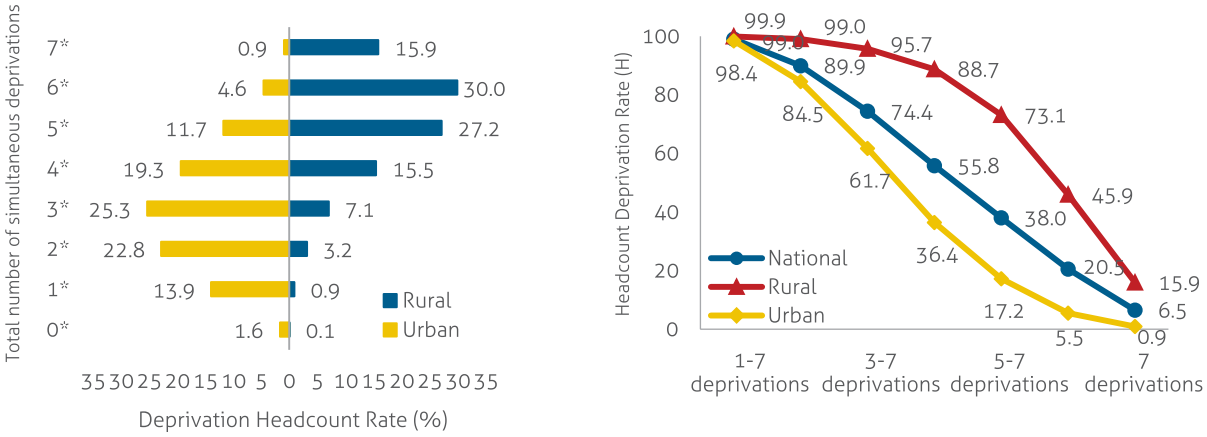
Considering a threshold of three dimensions (k=3), **74.4 per cent of children in Angola are considered multidimensionally deprived in at least three dimensions out of a total of seven possible deprivations.** These children experience between four and five deprivations on average, which represents 66 per cent *(A%)* of the total number of possible deprivations used for this study (i.e. seven dimensions). Accordingly, the deprivation headcount adjusted for intensity *(Mo)* is 0.49, which corresponds to the headcount ratio multiplied by the average intensity of deprivation (i.e. *H*A*). Deprivation and poverty among children are high in Angola, but comparable to large African countries like Ethiopia and the Democratic Republic of the Congo.[8]

[8] For the results for Ethiopia and the Democratic Republic of the Congo see the SPRI's web portal: http://nmoda.spriglobal.org/countries/2?locale=en

3.2 Where Do the Deprived Children Live?

Some characteristics of a child or of his/her household are highly correlated with the number of simultaneous deprivations faced. It is important to look at the geographical distribution of the deprived children to better understand the factors that may be limiting the access of children to basic needs and services, and to better inform policies aiming at reducing child poverty. Figure 4 presents deprivation distribution among children aged 0-17 years according to their area of residence and the deprivation headcount (H) for all possible deprivation thresholds.

Figure 4. Deprivation Distribution by Area of Residence for Children 0-17 Years Old



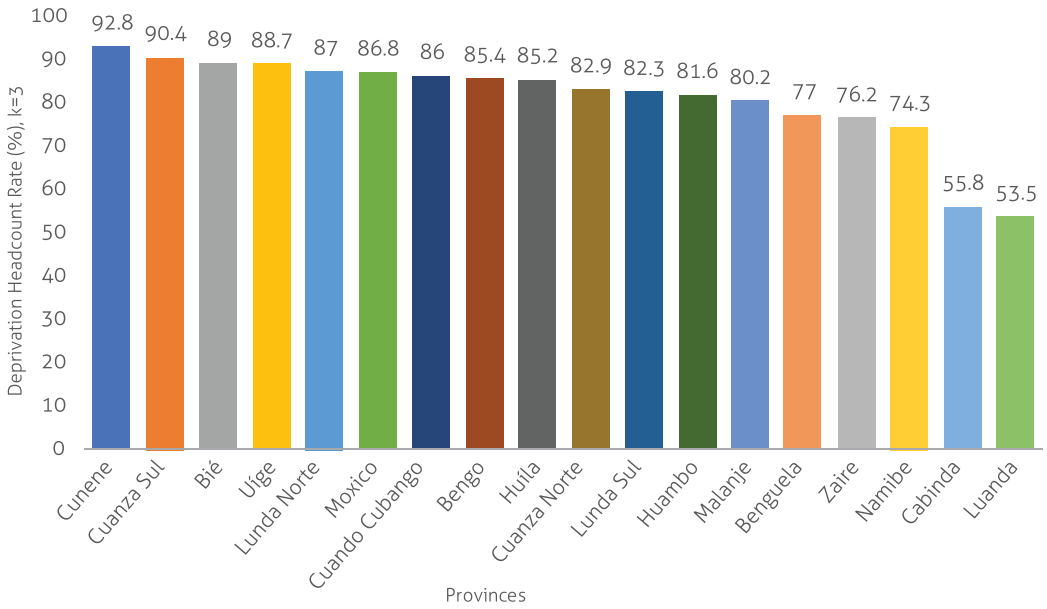
Note: * p<0.05 in Chi-squared test of independence.

There are highly significant differences in terms of the distribution of the total number of simultaneous deprivations experienced by children depending on where they reside. **While most children living in urban areas experience two or three deprivations simultaneously, in rural areas most children are deprived in five or six dimensions concurrently.** The graph on the right in Figure 4 shows the cumulative distribution of the deprivation headcount across the different possible thresholds of deprivation. It highlights the significant differences in the incidence of multidimensional deprivations according to the area of residence. If we consider a threshold of three deprivations, we observe that 61.7 per cent of children living in urban areas are deprived in three or more dimensions simultaneously, while this percentage is more than 50 per cent higher in rural areas, where the deprivation headcount rate reaches 95.7 per cent.

In order to further explore the location of these simultaneously deprived children, we examine the intensity of the multiple deprivations by provinces through multidimensional child deprivation headcounts that consider a deprivation threshold of three dimensions (Figure 5).

3. Child Deprivation

Figure 5. Multidimensional Deprivation Headcount (H) by Province of Children 0-17 Years Old



The differences in the intensity of multidimensional child deprivation among provinces are also very important. **Luanda and Cabinda provinces have the lowest percentage of children deprived in at least three dimensions**, with a deprivation rate of 53.5 per cent and 55.8 per cent respectively. These values contrast in a significant way with the other provinces, where in **13 out of 18 provinces in Angola, more than 80 per cent of the children are simultaneously deprived in three or more dimensions.** Among these provinces, the highest deprivation rates are found in Cunene and Cuanza Sul provinces where more than 90 per cent of the children are deprived in at least three dimensions. However, one should point out that more than 50 per cent of children in Angola, irrespective of their province of residence, experience three or more deprivations. This finding calls for immediate and effective actions by the leadership of Angola as it lays out its future plans for national growth and development.

3.3 Summary: Main Points from the Multidimensional Overlapping Deprivation Analysis for all Children

This section studied the multidimensional deprivation faced by children under 18 years of age in Angola. This type of analysis highlights the severity of child deprivation, and stems from national efforts to define the national dimensions of child well-being. The results of the analysis can therefore be used for monitoring the SDG 1.2. In addition, subnational deprivation levels have also been calculated, enabling the profiling of the most deprived children according to their characteristics. The key results of this analysis are summarised below:

1. Almost all children in Angola face at least one deprivation (only 1 per cent of the population under 18 years of age have a zero deprivation).
2. Children tend to cumulate three, four or five deprivations at the same time.
3. Using a multidimensional deprivation threshold of k=3, 74.4 per cent of children were found to experience three or more deprivations. On average, these children cumulate 4.6 simultaneous deprivations.
4. The incidence rate of multidimensional deprivation for a threshold of k=3 (74.4 per cent), can be reported as the multidimensional poverty rate for children to be monitored under the SDG 1.2.
5. While most of the children living in urban areas experience two or three deprivations at a time, in rural areas most children are deprived in five or six dimensions simultaneously. For a threshold k=3, 61.7 per cent and 95.7 per cent of children from urban and rural areas, respectively experience multiple deprivations.
6. Children from Luanda and Cabinda tend to be the provinces with the least occurrence of multidimensional deprivation (53.5 per cent and 55.8 per cent respectively). In contrast, those from Cunene and Cuanza Sul are the most deprived as they face both child deprivation and multidimensional poverty accounting for more than 90 per cent of children in these two provinces).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4. Child Deprivation in Angola: An Analysis by Age Group

This section presents the analysis of multiple deprivation among children in Angola for each of the age groups separately. First, we analyse the results of the single deprivation analysis by dimension and indicator. Secondly, we present the results of the Multiple Overlapping Deprivation Analysis..

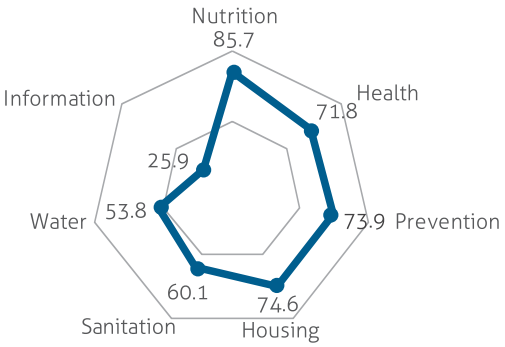
4.1 Sector-by-Sector Analysis of Child Deprivations

The single deprivation analysis aims at determining the sectors in Angola where children face the most deprivation. Separate results are presented for each of the dimensions and indicators deemed relevant for child well-being in Angola for each age group. An in-depth evaluation of the results and the identification of the characteristics of deprived children point to which sectors should receive specific attention.

4.1.1 Children 0 to 23 Months Old

The highest incidence of deprivation in Angola for children 0 to 23 months old is found in the Nutrition dimension with 85.7 per cent of these children deprived of adequate nutrition (Figure 6). Although around 10 percentage points lower, the *Housing*, *Malaria Prevention* and *Health* deprivations are also very high at 75 per cent, 74 per cent, and 72 per cent respectively for children aged 0-23 months.

Figure 6. Percentage of Children Aged 0-23 Months Deprived in a Given Dimension



4. Child Deprivation

In the case of *Nutrition*, the deprivation in this dimension is measured by considering the deprivation in child feeding and the consumption of micronutrients (i.e. not having received the recommended Vitamin A doses), but it is mainly explained by the absence of appropriate feeding patterns. According to Figure 7, 80 per cent of children under 24 months are deprived in terms of the Infant and Young Child Feeding indicator, which consists of exclusive breastfeeding for children younger than 6 months and a minimum acceptable diet for children aged 6 to 23 months. This incidence rate, with 63 per cent of children aged 0 to 5 months deprived, is to a great extent attributed to a child not being exclusively breastfed. With regard to children aged 6 to 23 months, the absence of a minimum diverse diet (a 62 per cent) and/or a minimum meal frequency (a 74 per cent) are key in determining that children are not being properly fed.

Figure 7. Percentage of Children Aged 0-23 Months Deprived in a Given Indicator

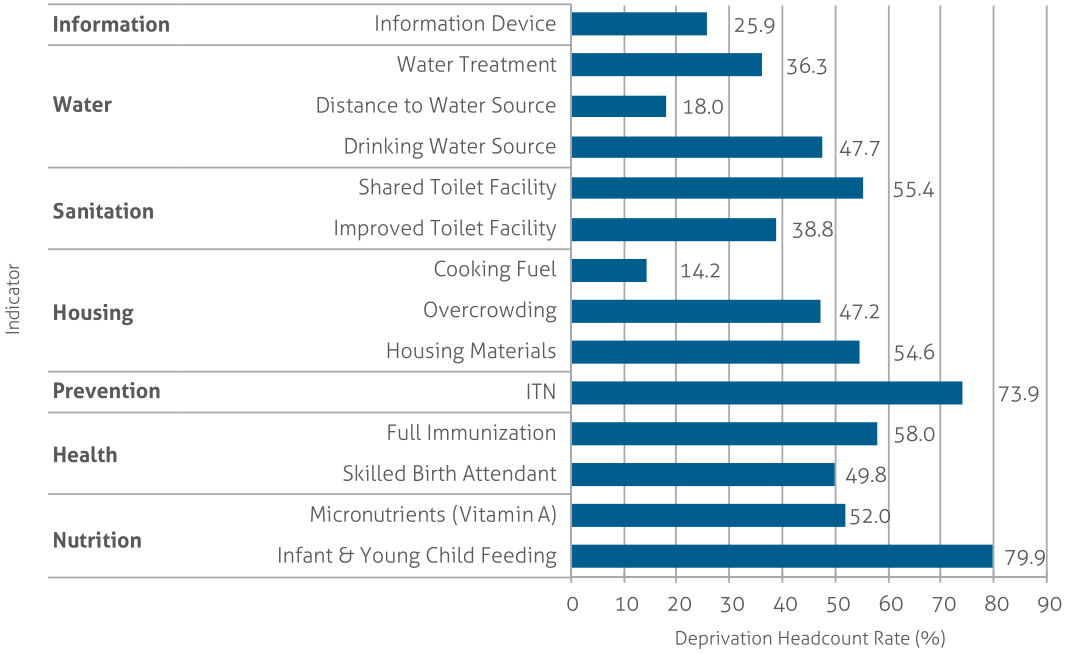


Figure 7 also shows that the *Housing* deprivation rate is mainly caused by the use of housing materials for the roof, floor and/or walls that are made from natural materials that are not durable. A total of 54.6 per cent of children were found to live in households where the dwelling was made of non-durable materials. A total of 47.2 per cent of children aged 0-23 months were found to be deprived in the overcrowding indicator.

One should note that deprivation in *Malaria Prevention* is informed by the indicator of Insecticide-Treated Net (ITN) to repel mosquitoes, which indicates that children 0-23 months old do not use the ITN on a regular basis.

The *Health* incidence of deprivation, which takes into account whether a skilled birth attendant helped to deliver a child, serves to measure the quality of child health care. Whether a child is fully immunized is also important according to the World Health Organization (WHO) and the National Programme of Vaccination (*Programa National de Vacinação*). Both indicators are shown to be relevant determinants of the high deprivation rates in the Health dimension — with more than 50 per cent of children 0-23 months old being deprived in each of these indicators. One should note that the high rates

of deprivation in the skilled birth attendant indicator may also contribute to the high infant and maternal mortality rates in Angola, notwithstanding efforts by the Ministry of Health to strengthen access to primary health care.[9]

In the case of the full immunization indicator, the immunization coverage of the recommended vaccines declines with the age group. Even though BCG and Polio 0 vaccination coverage is relatively high among children 0-23 months old (72 per cent and 67.5 per cent respectively), only 37 per cent of the children above 12 months have received four Polio doses and 40 per cent three DPT doses. Yellow fever vaccine coverage among this group is 49 per cent, while for Measles the coverage rate is 57 per cent. In the context of Angola, this is a particularly important issue considering that vaccination is one of the best strategies to prevent deadly childhood illnesses and to help improve infant mortality.

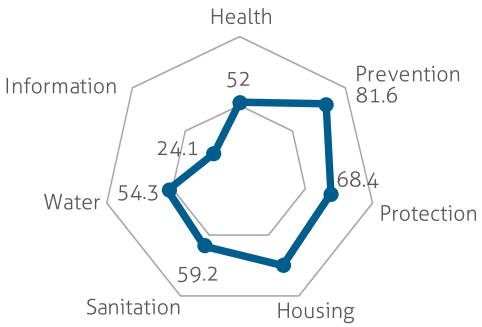
The differences in coverage may be associated with the fact that the BCG and Polio 0 vaccinations are administered in the hospitals before an infant leaves the health facility immediately after birth, while the others are not. Hence, this might be associated with a lack of accessible health infrastructures for households. If this is the case, the incidence of deprivation for the full immunization indicator might also signal other potential child deprivations, such as access to health facilities. In fact, parents wanting to immunize and seek treatment for their children have to pay higher commuting costs, especially if they live far from a health centre.

Lastly, it is important to note that, although the deprivation in the Water and Sanitation dimensions are below the median, the incidence of deprivation in the drinking water source and sharing of toilet facility indicators coincide with the aforementioned values for housing indicators (materials and overcrowding), which stand at 48 per cent and 55 per cent respectively.

4.1.2 Children 24-59 Months Old months

For 24-59 month-old children, the levels of deprivation in *Malaria Prevention* and *Housing* are the highest (81.6 per cent and 74.5 per cent, respectively), which is consistent with the percentages observed for the youngest age group (Figure 8). The incidence of deprivation in *Child Protection* is also the highest among children from this age group, with approximately two thirds of children found to be deprived in this dimension.

Figure 8. Percentage of Children Aged 24-59 Months Deprived in a Given Dimension



[9] According to the data of the Angola IIMS 2015-2016, the infant mortality rate is 44 deaths per 1,000 live births. Although a significant reduction of 45 per cent in the infant mortality rate was registered between 2001-2005 and 2011-2015, it remains a critical issue that requires special attention.

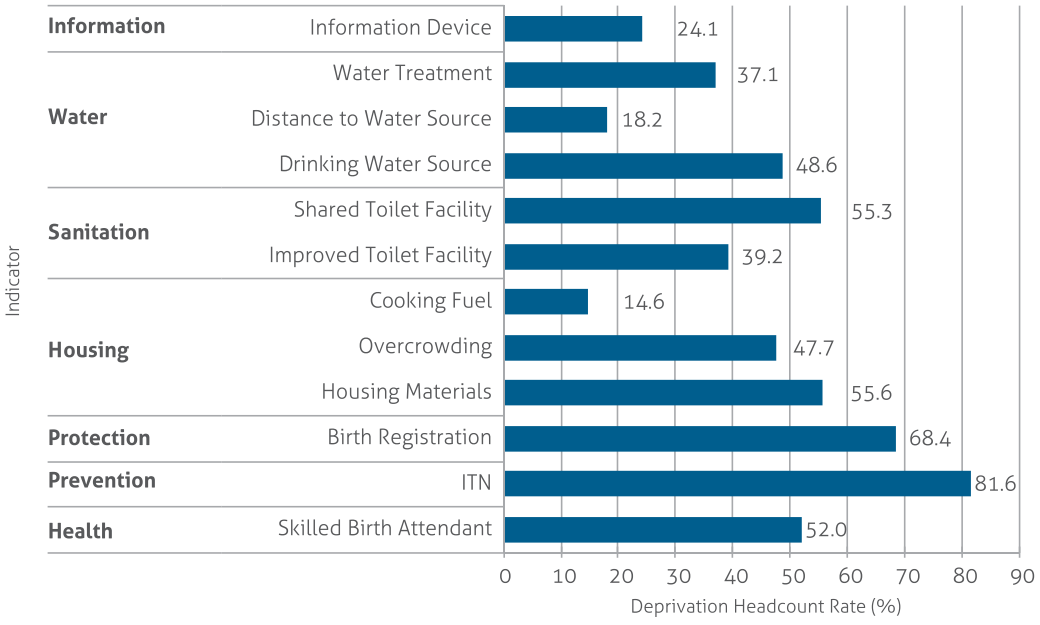
4. Child Deprivation

Although the percentage of children deprived in *Health* is 20 percentage points lower in the 0-23 months age group, the deprivation in the 24-59 months age group captures only deprivation in skilled birth attendance, which is actually a modicum higher (52 per cent versus 49.8 per cent).[10] In terms of *Malaria Prevention*, a lower percentage of children use ITNs for sleeping, with the finding that four out of five children 24-59 months old are deprived in this dimension.

Deprivation in the *Child Protection* dimension is measured by considering the birth certificate indicator. Birth registration is a fundamental right of a child that is enshrined in the United Nations Convention on the Rights of the Child and in Article 6 of the African Charter to ensure that all children have the right to citizenship through a birth certificate that gives access to all legal rights and the protection of the State. In Angola, being registered is not enough for accessing all the rights associated with being a citizen, such as having a legal identity, school enrolment, receiving immunization during childhood, or for accessing certain inherent legal rights, getting married or voting during adulthood.

A further examination of the deprivation rates by indicator in Figure 9 shows that the incidence in household-related indicators are similar to the ones observed for children aged 0-23 months. In that instance, the drinking water source and sharing of a toilet facility show high percentages of deprived children, followed by the deprivation rates in water treatment and improved toilet facility indicators, with two out of five children aged 24-59 months deprived. This may reflect the fact that both age groups share similar household profiles, which may help to explain deprivations faced by children in these cases. This point is analysed in more detail in subsection 4.1.5.

Figure 9. Percentage of Children Aged 24-59 Months Deprived in a Given Indicator

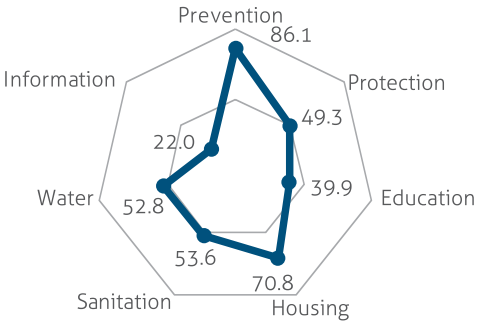


[10] Although the full immunization indicator may also be relevant in denoting the well-being of children in terms of health, missing observations for this indicator for the 24-59 months age group meant that it could not be included as an indicator of the deprivations that children face in health.

4.1.3 Children 5-11 Years Old

For children aged 5-11 years, Figure 10 shows the percentage of these children who are deprived by dimension. As in the previous age groups, **the level of deprivation for the *Prevention from Malaria* dimension is among the highest in this age group as well**, but the percentage of children deprived is 16.5 per cent higher for the youngest age group (86 per cent). The *Housing* deprivation rate is also similar to the one for younger children, with around three children out of four deprived in this dimension. Moreover, other dimensions associated with a household's characteristics, such as *Sanitation, Water* and *Information,* show similar deprivation rates, although a modicum lower compared to those observed for the younger age groups: 54 per cent, 53 per cent and 22 per cent respectively.

Figure 10. Percentage of Children Aged 5-11 Years Deprived in a Given Dimension



Deprivation in the *Child Protection* dimension shows a significant decline in the percentage of children without a birth certificate compared to the previous age group, from 68.4 per cent to 49.3 per cent. This may be associated with children attending school having to present their birth certificate to enrol from grade 4 upwards. A birth certificate is a formal requirement when enrolling in secondary school so that some families make every effort to obtain one.

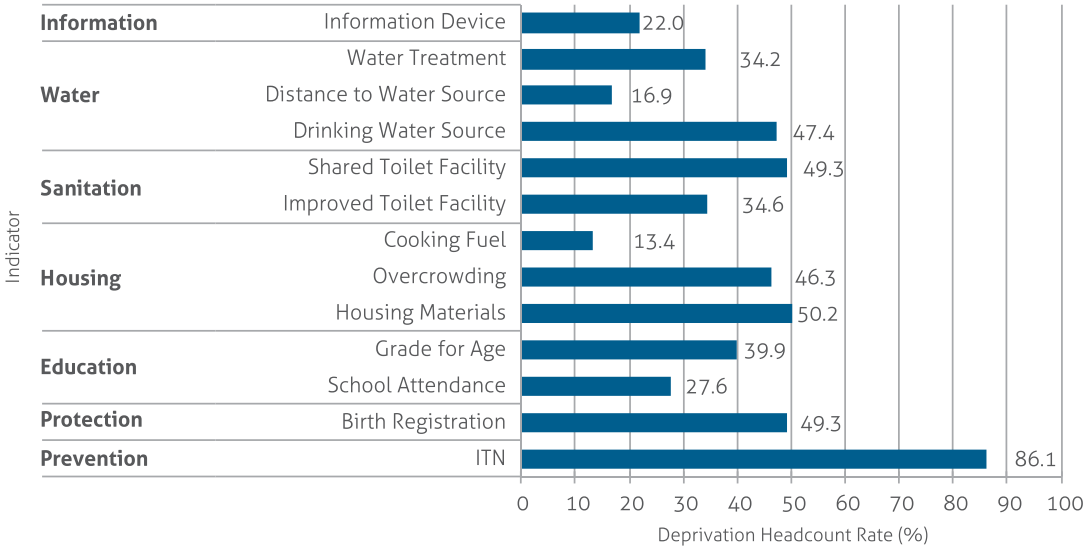
In Angola 5 year-old children are expected to start their formal education at that age and, therefore, the Education dimension is included as one of the most important sectors that determine well-being for school-age children.[11] In Figure 10, 40 per cent of children aged 6-11 years were found to be deprived in the *Education* dimension. This is a critical issue considering that in Angola primary school attendance is compulsory at these ages. This dimension captures the deprivation in two indicators of education: school attendance and a child attending school, although a child may lag two or more years behind the grade corresponding to his/her age.

If we look at the incidence of deprivation in these indicators in Figure 11, we find that although 72.4 per cent of primary school-age children are attending school in Angola, the grade-for-age indicator shows that 40 per cent of

[11] According to Angola's education system, children should attend pre-primary school from 5 years with primary school being for children aged 6 to 11 years old and secondary school for children aged 12 to 17 years. Early childhood education is very important since it forms the basis of intelligence, personality, social behavior and the capacity to learn and develop. However, it was not possible to include an indicator of education for children aged 3 to 5 years since pre-primary education is only compulsory at 5 years. Moreover, access to education for a 3 or 4 year-old child varies depending on the region. In addition, 5 year-old children have been excluded in the analysis to avoid overestimation of the deprivations associated with birth-year effects.

children aged 8-11 years are attending a grade that is at least two years behind the grade for their age. This may be caused both by the repetition of grades and may also be related to the high proportion of late enrolments in grade 1 in Angola (UNICEF, 2015).

Figure 11. Percentage of Children Aged 5-11 Years Deprived in a Given Indicator

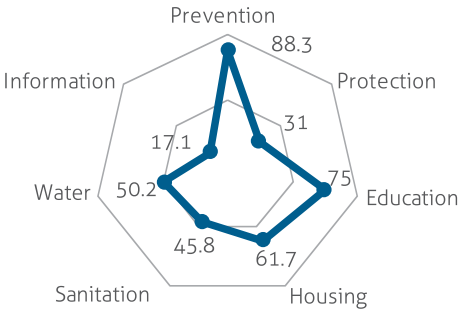


A further examination of the results of the child deprivation analysis by indicator in Figure 11 shows that the decrease in the incidence of deprivation in *Sanitation* for children 5-11 years old is associated with better access to both an improved toilet facility (65.4 per cent) and a lower percentage of children living in households that share the toilet facility (with a deprivation rate of 49 per cent). The deprivation rates of drinking water source and water treatment indicators are not so different from those observed in younger age groups, although a slightly lower percentage of children live in households that do not treat unimproved drinking water.

4.1.4 Children 12-17 Years Old

Analysing the deprivation by dimension for the oldest age group of 12 to 17 year-old children (Figure 12), deprivation in *Malaria Prevention* is pervasive and is also found within this age group. **One should note that the failure to use an insecticide-treated net for sleeping increases with children's age**, with almost nine out of ten children deprived in this indicator.

Figure 12. Percentage of Children Aged 12-17 Years Deprived in a Given Dimension

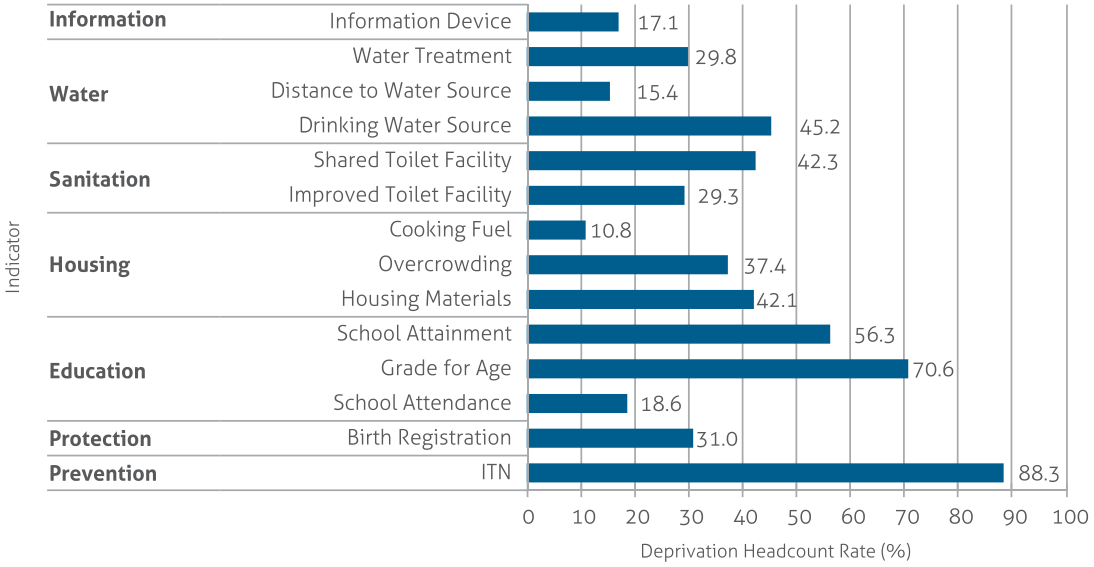


Similar to the lower deprivation rates in the 5-11 year age group compared to younger age groups, the deprivation levels in *Child Protection* for children aged 12 to 17 years declined even more. They stood at only 31 per cent for this age group. **Although older children are more likely to have a birth certificate, 70 per cent of children under 5 years are still deprived of this basic right and face consequences that may limit child well-being.** The deprivation levels for the *Housing, Sanitation, Water* and *Information* dimensions are lower in all cases compared to those for younger children even though they remain high.

The *Education* dimension deserves special attention considering that the deprivation levels for secondary school-aged children are much higher than for primary school-aged children (75 per cent versus 40 per cent respectively). Educated children participate in and contribute to the economic and social wealth of their societies. Nevertheless, if we look at primary school attainment as a proxy of basic human capital formation, for children 12-17 years (Figure 13) only 43.7 per cent of these children have graduated from primary school even though primary school attendance for children 6-11 years stands at 72.4 per cent.

The low primary-school completion rate may reflect the low quality and efficiency of the school system in Angola. This calls for the implementation of reforms in the school system with a focus on increasing the quality of the education and of support to children in the learning process. Moreover, the proportion of children deprived in the grade-for-age indicator almost doubled the observed values for 6-11 year-old children. This, linked to the fact that the school attendance rate for 12-17 year-old children is higher, may indicate that one of the key issues to be solved in Angola is the early enrolment of children in primary school.

Figure 13. Percentage of Children Aged 12-17 Years Deprived in a Given Indicator

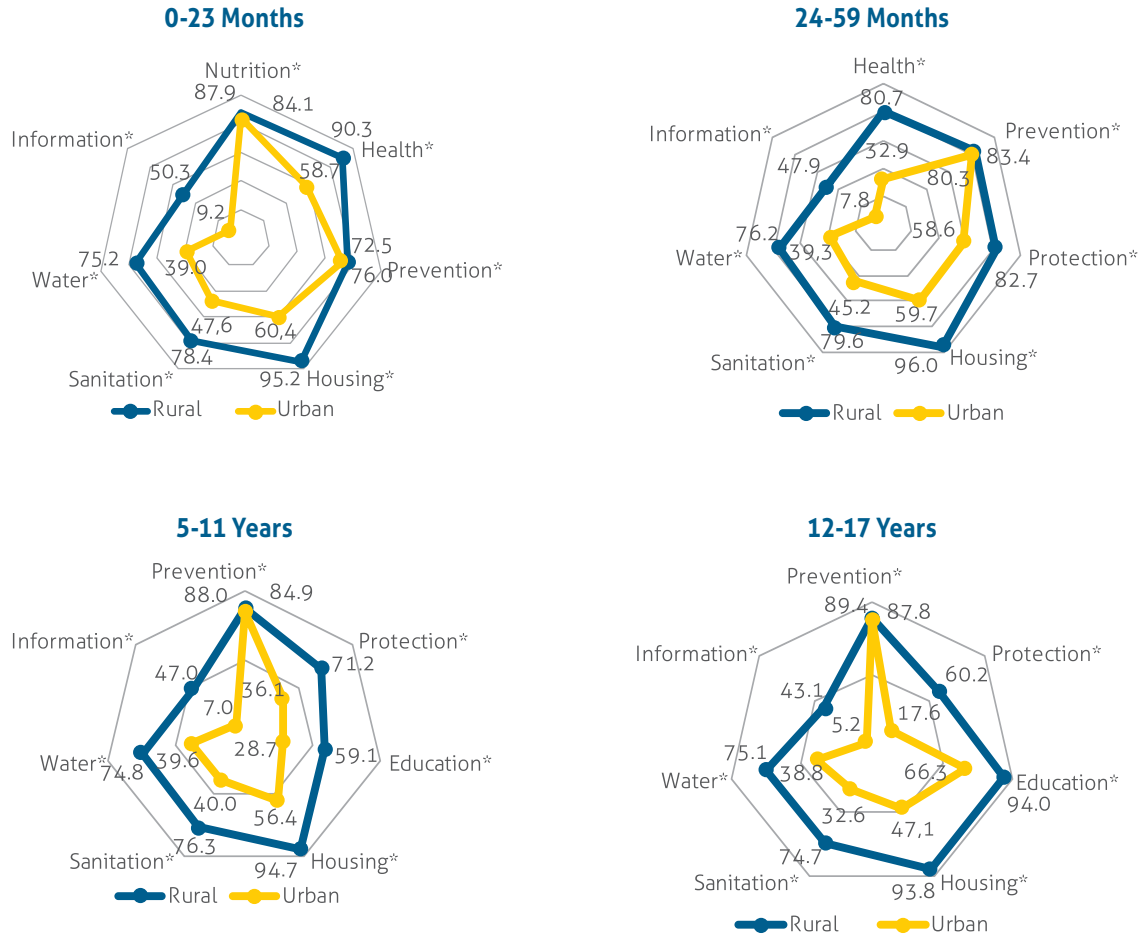


4.1.5 Who are the Deprived Children in Angola? Angola?

To better understand which children in Angola have a higher probability of being deprived in a specific dimension, we analysed the deprivation headcount ratios for each subgroup with a given profile. This child-centred equity analysis enabled one to identify whether deprivations were concentrated in specific geographic areas or in households with a certain socioeconomic background, or in children with certain characteristics, among other factors. This would help to determine the characteristics of the most vulnerable children in Angola for each age group.

Children living in rural areas have a significantly higher probability of being deprived in most of the dimensions compared with children residing in urban areas, regardless of child's age (Figure 14). The only exception is for the *Prevention from Malaria* dimension, which has recorded one of the highest deprivation headcounts for children residing both in urban and rural areas, with the differences being insignificant in statistical terms.

Figure 14. Percentage of Children Deprived in a Given Dimension by Area of Residence and Age Group



Note: * p<0.05 in Chi-squared test of independence.

An analysis of the deprivation headcounts by Angola's provinces in Figures 15 to 18 for the different age groups show that the percentage of children deprived varies greatly across different provinces. Furthermore, there is also a variation in the vulnerability of children within provinces that depends on the deprivation dimension.

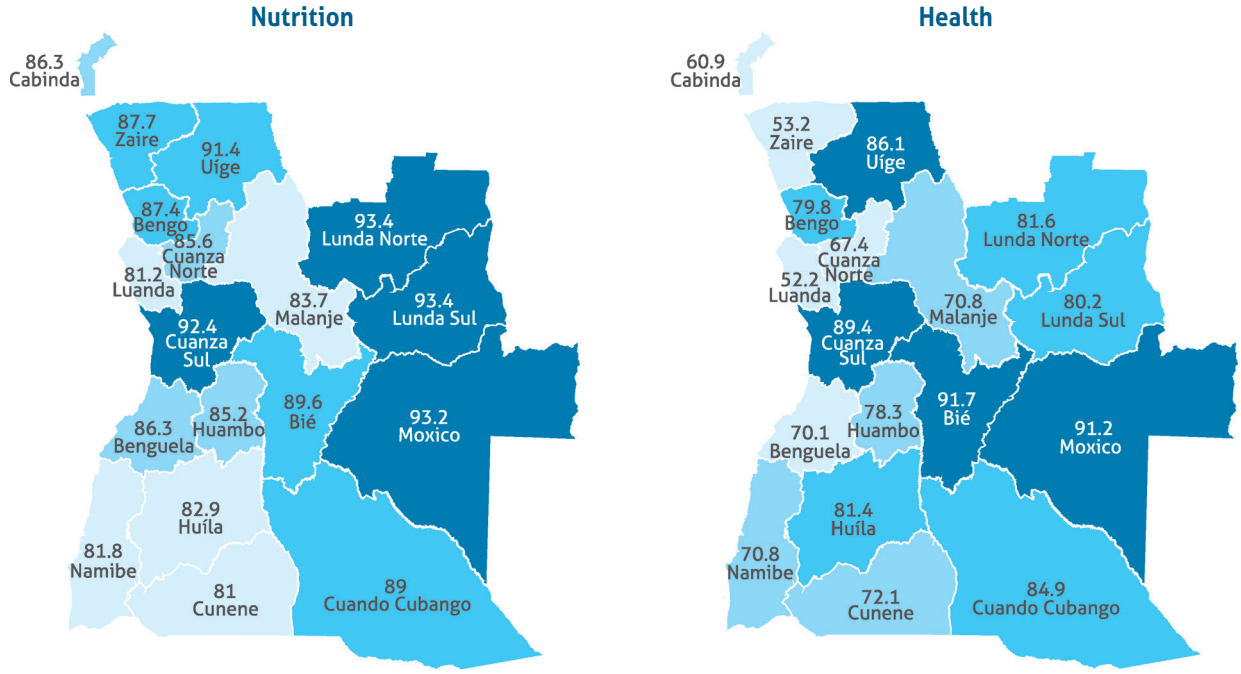
In Figure 15 we observed that for children 0-23 months old the provinces with the highest proportion of children deprived of appropriate nutrition were generally concentrated east of Angola (Lunda Norte, Lunda Sul and Moxico), with deprivation headcount rates of 93 per cent on average. In this case, the provinces of Luanda, Cunene and Namibe presented the lowest deprivation headcount rates (approximately 81 per cent on average).

Nevertheless, when looking at the distribution of the deprivation headcount rate in the *Health* dimension, the locations of the highest deprivation rates were completely different, with the highest percentages of deprived children in the central part of the country (Bié, Moxico and Cuanza Sul), the figure being approximately 91 per cent. In the case of the lowest deprivation headcounts, although Luanda is still the province with the lowest percentage of children

deprived in *Health* (52.2%), currently Zaire is the second province with the lowest deprivation headcount rate (53.2 per cent).

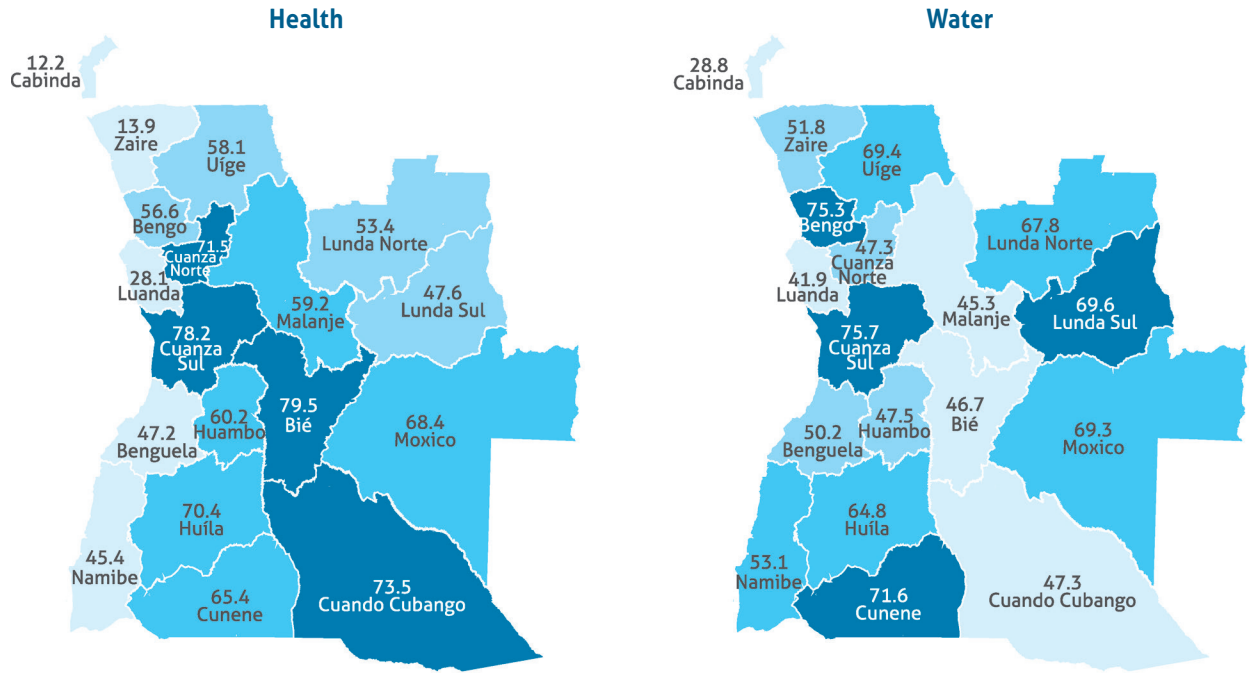
Despite the variation in the deprivation levels across the country, one finding was that over two thirds of children were always found to be deprived in *Nutrition* and *Health*, independent of the province where they reside. Since these two dimensions are central to child survival, the analysis outlines the serious threats posed in this regard.

Figure 15. Distribution of Deprivation Headcount Rates in Nutrition and Health by Province for Children Aged 0-23 Months



For children in the 24-59 months age group (Figure 16), apart from the lower deprivation rates in *Health* for all the provinces compared to the 0-23 months age group, the distribution of the highest deprivation rates by province differs slightly, with Cuando Cubango and Cuanza Norte among the provinces with the highest deprivation rates (73.5 per cent and 71.5 per cent respectively).

Figure 16. Distribution of Deprivation Headcount Rates in Health and Water by Province for Children Aged 24-59 Months



In contrast, the distribution of deprived children is different for the Water dimension. Bié and Cuando Cubango are among the provinces with the lowest percentages of deprived children (47 per cent), jointly with Luanda, Cabinda and Malanje. The highest deprivation rates are more widely spread across the country: Bengo (75.3 per cent), Cuanza Sul (75.7 per cent) and Cunene (71.6 per cent).

When considering the *Malaria Prevention* dimension for children of 5-11 years (Figure 17), the deprivation headcount rates are found to be extremely high throughout the country, exceeding 75 per cent in all cases except for Cabinda. On average, children from Moxico, Huila, Bengo and Cunene are 95 per cent likely to experience deprivation in this dimension and they are the most deprived children in Angola. Children from the provinces of Cabinda, Lunda Sul, Lunda Norte, Huambo and Namibe are the least deprived, although they are greatly deprived . Despite the high incidence of malaria-related deaths in Angola, prevention of this disease is inadequate throughout the country.

Figure 17. Distribution of Deprivation Headcount Rates in Malaria Prevention and Education by Province for Children Aged 5-11 Years

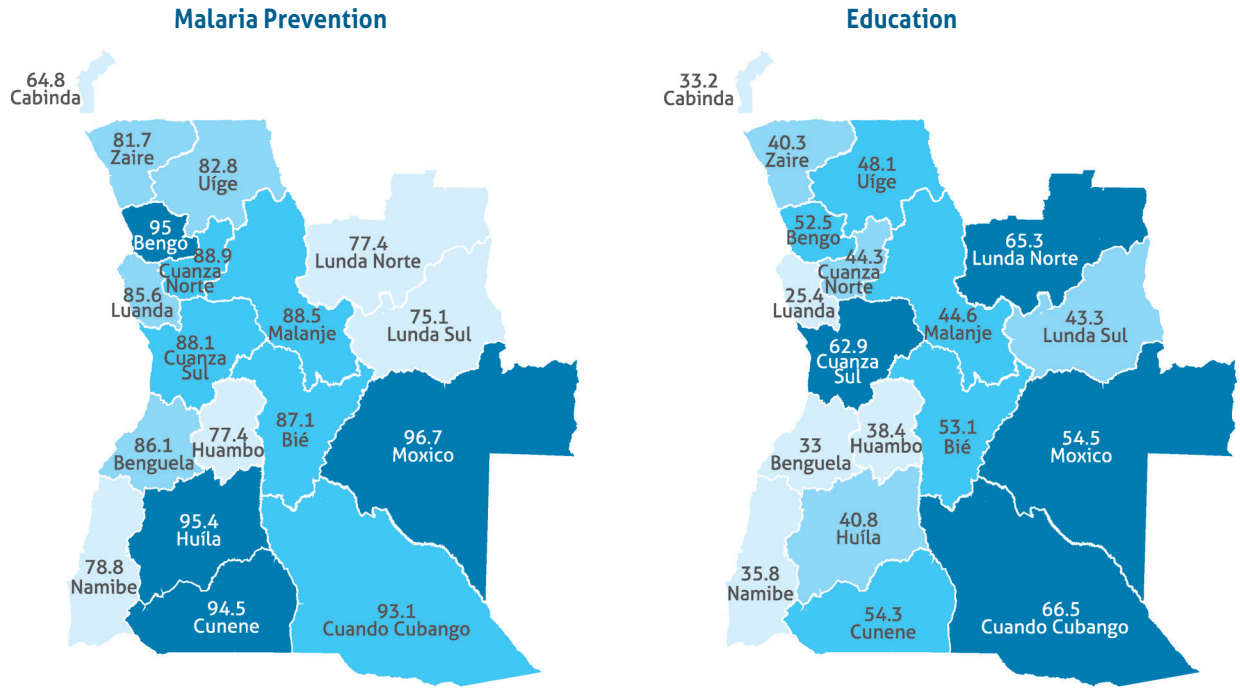
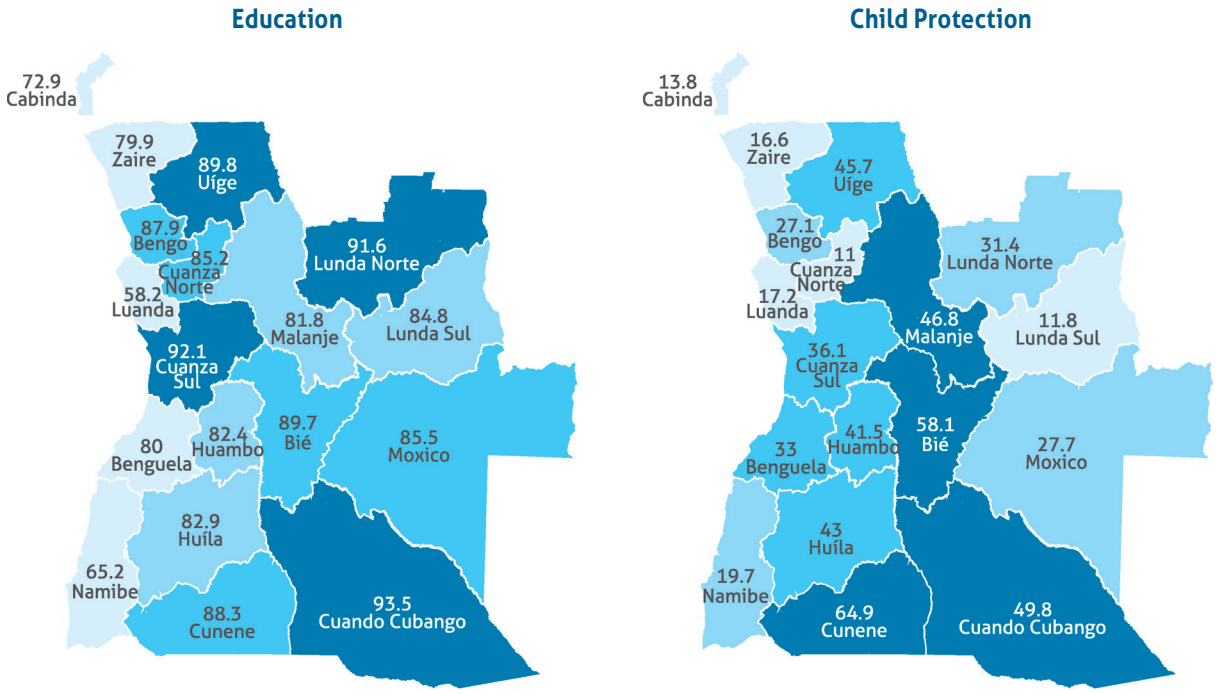


Figure 17 also illustrates the distribution of the deprivation headcounts by province for the *Education* dimension. Children aged 5-11 years from Luanda (25.4 per cent) and the South West provinces (35 per cent on average) are the least deprived, while those from Cuando Cubango are the most deprived (66.5 per cent). An average disparity of 21 percentage points is observed between Luanda and the other provinces pointing to the need to level up school attendance and make progress so that children throughout Angola attend the school grade corresponding to their age group.

Finally, in Figure 18 the distribution of the deprivation headcounts for children aged 12-17 years are studied in regard to the *Education* and *Child Protection* dimensions. The study of these two dimensions are essential. After securing the survival of the child, joint investments in developing their capabilities and talents and protecting them are essential to ensure the future adult population's ability to participate in the socioeconomic and cultural life of the country optimally.

Figure 18. Distribution of Deprivation Headcount Rates in Education and Child Protection by Province for Children Aged 12-17 Years



The deprivation rates for the *Education* dimension are similarly distributed across the country for children aged 12-17 years and those of the previous age group. Cuando Cubango is still the most deprived province, while children from Luanda are still the least deprived. Interestingly, when comparing deprivation rates for 5-11 year-old and 12-17 year-old children, we notice a systematic increase in deprivation with age, independently of the province. This increase is largely due to the increased deprivation rates for the grade-for-age indicator (40 per cent for the 5-11 year-olds to 71 per cent for the 12-17 year-olds at the national level) and the inclusion of the primary school attainment indicator, which shows that 56 per cent of 12-17 year-old children are deprived.

In terms of child protection, there is a high dispersion across provinces in the deprivation rates ranging from 11 per cent in Cuanza Norte to 64.9 per cent of children without a birth certificate in Cunene province. This highlights the need for targeting birth registration campaigns at the provincial level to ensure equity over a broad range of services and child interventions.

To complete the profiling of deprived children in Angola, an analysis of the most interesting child profiles in Angola was undertaken for each dimension of deprivation. Children from the different age groups were categorized according to their individual characteristics, or those of their household or household members.

4. Child Deprivation

An examination of children aged 0-23 months in Table 2 – those who are stunted, wasted, underweight or from the lower socioeconomic quintiles — and of mothers or households headed by a person with low education levels are significantly more likely to be deprived in all the dimensions of well-being that this study has covered. The study found that deprivation in the *Malaria Prevention* dimension seems to affect children irrespective of their profile, except for a significantly higher probability of deprivation for underweight children, for children from the lower socioeconomic quintiles and for a household with a poorly educated head.

Table 2. Percentage of Children Aged 0-23 Months Deprived in Given Dimensions for Different Profiles

Profile		Nutrition	Health	Malaria Prevention	Housing	Sanitation	Water	Information
National		***85.7***	***71.8***	***73.9***	***74.6***	***60.1***	***53.8***	***25.9***
Stunting	Yes	91.0*	81.2*	73.6	83.7*	68.8*	60.2*	31.3*
	No	82.4*	67.7*	71.9	71.3*	56.5*	49.9*	21.6*
Wasting	Yes	93.4*	76.8	78.8	84.4*	70.9*	55.3	29.6
	No	85.0*	72.0	72.3	74.9*	60.2*	53.3	25.0
Underweight	Yes	90.7*	85.3*	77.4*	87.3*	71.4*	61.6*	38.2*
	No	84.0*	69.1*	71.4*	72.8*	58.4*	51.4*	22.2*
Mother's level of education	Secondary or higher	78.9*	48.5*	70.5	51.0*	40.2*	36.5*	5.5*
	Lower than secondary	88.0*	84.0*	73.1	86.7*	69.8*	61.2*	34.4*
HH head's level of education	Secondary or higher	77.7*	43.0*	68.9*	40.0*	30.3*	42.2*	2.3*
	Lower than secondary	86.8*	76.8*	74.7*	80.4*	65.1*	55.9*	30.1*
Socio-economic quintile	Lowest 2	89.4*	90.8*	76.4*	98.6*	80.8*	73.0*	52.8*
	Highest 3	82.4*	54.7*	71.8*	53.5*	42.1*	37.0*	2.5*

Note: * $p<0.05$ in Chi-squared test of independence.

Table 3 shows the deprivation headcounts for children aged 24-59 months profiled according to certain characteristics that give rise to significant disparities. Thus, children who are stunted, underweight, from the lower socioeconomic quintiles, or children with a poorly educated mother or who live in a household headed by a poorly educated person are more deprived. These findings are consistent with those from the previous age group. As for the previous age group, a mother's educational level seems to be a strong predictor of deprivation in children aged 24-59 months in Angola. It is widely reported that educated mothers make better decisions when it comes to nutrition and caring for their children. They are also more likely to be employed so their households can afford to provide a safe environment, namely, good housing, access to water and sanitation, for example, for their children.

Table 3. Percentage of Children Aged 24-59 Months Deprived in Given Dimensions for Different Profiles

Profile		Health	Malaria prevention	Protection	Housing	Sanitation	Water	Information
National		***52.0***	***81.6***	***68.4***	***74.5***	***59.2***	***54.3***	***24.1***
Stunting	Yes	64.1*	82.2	78.1*	85.6*	67.4*	58.1*	30.6*
	No	43.9*	80.3	62.4*	68.2*	56.8*	51.9*	18.4*
Underweight	Yes	66.6*	82.9	78.5*	84.1*	69.5*	61.1*	34.4*
	No	49.0*	80.7	66.7*	73.3*	59.0*	53.0*	20.7*
Mother's level of education	Secondary or higher	18.3*	78.2*	46.0*	46.6*	39.6*	37.2*	2.6*
	Lower than secondary	66.2*	82.9*	77.9*	87.3*	68.9*	60.7*	31.6*
HH head's level of education	Secondary or higher	18.4*	80.0	37.8*	35.6*	29.0*	38.4*	2.6*
	Lower than secondary	57.7*	81.7	73.1*	81.1*	64.2*	57.1*	27.8*
Socio-economic quintile	Lowest 2	78.9*	82.9	83.6*	99.2*	80.3*	74.2*	49.7*
	Highest 3	29.1*	80.4	55.3*	53.2*	41.0*	37.2*	2.0*

Note: * p<0.05 in Chi-squared test of independence.

In the case of children aged 5-11 years, as for the previous two age groups, the head of household's education level and socioeconomic quintiles are strongly correlated to deprivation (see Table 4). Children from households headed by a person with a lower educational level than secondary school or from the lowest two quintiles are the most deprived. When the focus shifts to children engaged in labour activities and children who are not working, the figures show a clear correlation of 8 percentage points on average in favour of employed children.

Table 4. Percentage of Children Aged 5-11 Years Deprived in Given Dimensions for Different Profiles

Profile		Malaria prevention	Protection	Education	Housing	Sanitation	Water	Information
National		***86.1***	***49.3***	***39.9***	***70.8***	***53.6***	***52.8***	***22.0***
HH head's level of education	Secondary or higher	83.8	17.1*	13.1*	35.3*	20.8*	40.0*	1.3*
	Lower than secondary	86.6	55.0*	44.8*	77.6*	59.6*	55.5*	26.2*
Socio-economic quintiles	Lowest 2	88.4*	72.3*	60.3*	99.0*	78.9*	73.1*	49.6*
	Highest 3	84.4*	32.7*	25.6*	50.4*	35.3*	38.2*	2.1*
Child labour	Yes	86.4	55.5*	44.4*	79.4*	67.9*	61.5*	28.1*
	No	84.7	48.6*	39.5*	67.2*	53.9*	52.1*	23.1*

Note: * p<0.05 in Chi-squared test of independence.

Finally, Table 5 displays the deprivation headcounts for children aged 12-17 years in relation to child marriage, labour, knowledge on HIV, socioeconomic quintile, or head of household's educational level. The trends are akin to those observed for the previous age groups. In addition, the relationship between the deprivations, child marriage and having knowledge about HIV have been explored. Children who are married or do not have comprehensive knowledge on HIV are more likely to experience all dimensions of deprivation except *Malaria Prevention*.

Table 5. Percentage of Children Aged 12-17 Years Deprived in Given Dimensions for Different Profiles

Profile		Malaria prevention	Protection	Education	Housing	Sanitation	Water	Information
National		***88.3***	***31.0***	***75.0***	***61.7***	***45.8***	***50.2***	***17.1***
Child marriage	Married/ Ever married	76.0*	45.8*	95.2*	72.9*	60.5*	57.3	26.1*
	No	89.4*	25.1*	77.6*	57.7*	43.5*	49.5	14.6*
Child labour	Yes	84.3*	43.3*	86.1*	75.9*	65.8*	60.4*	29.1*
	No	89.0*	28.0*	70.1*	52.6*	40.9*	44.8*	16.0*
HIV knowledge	No	87.5	35.0*	86.8*	67.5*	52.7*	52.1*	21.2*
	Yes	85.4	17.6*	67.6*	43.1*	35.1*	45.2*	7.0*
HH head's level of education	Secondary or higher	86.8	9.3*	48.6*	27.2*	16.2*	40.6*	0.7*
	Lower than secondary	88.6	36.0*	81.1*	70.2*	52.8*	52.9*	21.2*
Socio-economic quintiles	Lowest 2	89.3	60.0*	95.1*	98.6*	77.9*	73.0*	46.2*
	Highest 3	87.7	15.6*	64.4*	42.3*	28.8*	38.1*	1.6*

Note: * p<0.05 in Chi-squared test of independence.

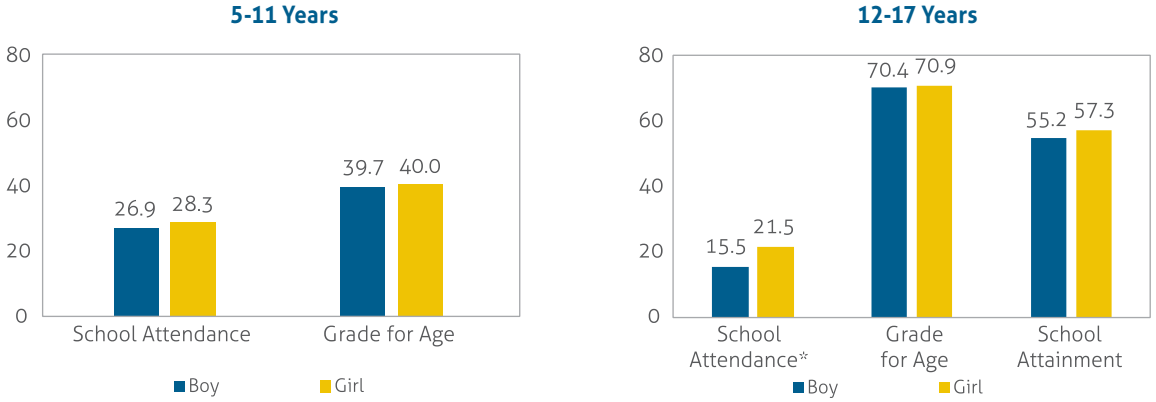
Does Gender Matter for Identifying Deprived Children?

The analysis sought to shed light on the disparities in deprivations suffered by boys and girls in Angola. However, as most of the dimensions were informed by household-level indicators related to conditions assumed to apply equally to all household members irrespective of age or gender, for example, this analysis yielded very limited results. On the other hand, education indicators, such as school attendance, grade-for-age and primary completion , were measured with the child as the unit thereby allowing comparisons between genders.

Figure 19 shows that in the sample used in this study, girls are more deprived in terms of education-related indicators. However, the observed disparities are statistically significant only for the school attendance indicator pertaining to children aged 12-17 years. We can therefore conclude that girls and boys suffer the same deprivations in education when aged 5-11 years after which girls are at greater risk of being out of school. Various factors may be at play, such as the absence of a school sanitation infrastructure that prevents girls from attending school, particularly pubescent-age girls, child marriage, among other factors. If one considers school attendance and the issue of grades corresponding to

a particular age, the high deprivation rates in both areas affect more than 50 per cent and 70 per cent of children aged 12-17 years respectively, regardless of their gender.

Figure 19. Percentage of Children Aged 5-17 Years Deprived in Education Indicators by Gender



Note: * p<0.05 in Chi-squared test of independence.

4.1.6 Summary: Main Points from the Sector-by-Sector Analysis

The single deprivation analysis aims at determining the sectors where children in Angola are most deprived. The analysis presents separate results for each of the dimensions and indicators that have been found relevant for child well-being in Angola and also for each age group. There are several key messages that emerge from the single deprivation analysis:

1. For children under 2 years-old, the highest deprivation rates are observed for the *Nutrition* dimension. These deprivations are mainly caused by a low incidence of exclusive breastfeeding for children under 6 months and an inadequate frequency and diversity of meals for children aged 6 to 23 months.
2. The highest deprivation levels observed in children of the three older age groups are for the *Malaria Prevention* dimension. Furthermore, an increase in the deprivation level for that dimension becomes more likely as the children progress up the age groups.
3. Deprivation in the *Education* dimension was found to be higher for older children despite an increase in school attendance by the previous age group. However, primary school attendance still needs to be realized for over 50 per cent of 12-17 year-old children in Angola.
4. Despite the general trend of increased school attendance for the older age group, a larger percentage of girls do not attend school (26.9 per cent of girls aged 12-17 years do not attend school compared to 15.5 per cent of boys).
5. The characteristics of an individual child, a mother or a household have a significant correlation to different deprivation levels among children in Angola.

4.2 Multiple and Overlapping Deprivation Analysis

The severity of the deprivations faced by children is better understood by analysing whether they are experienced simultaneously. Overlapping deprivations have higher adverse effects, therefore it is important to better identify the children who experience cumulative, multiple and overlapping deprivations. Moreover, this type of analysis also illustrates how deprivations are interrelated for different subgroups, and which policy responses can better reduce deprivations among children.

The Multiple Overlapping Deprivation Analysis takes a multidimensional lens, examining how many and what combination of deprivations children experience simultaneously. It shows: (i) the incidence and intensity of multiple deprivations; (ii) the profile of the children who are multidimensionally deprived; (iii) the contribution of various characteristics and dimensions to the incidence and intensity of deprivations; and (iv) the deprivation overlaps between dimensions.

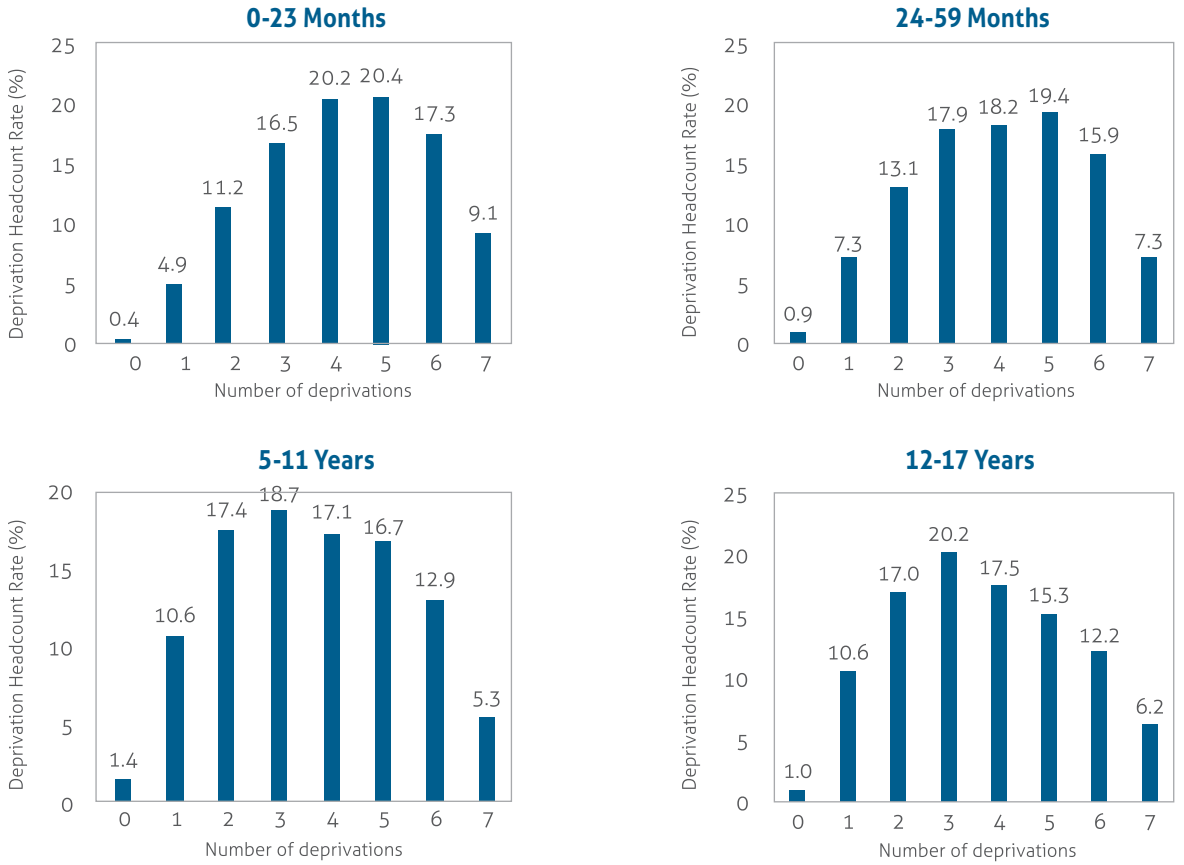
Understanding how certain dimensions overlap and are experienced allows for identifying the most vulnerable children and identifying sectors that could benefit from an integrated approach to policy-making. Additionally, simultaneity in deprivations may point to the need of adopting more generic and universal approaches, such as universal child benefits or other social protection interventions, which would do away with several deprivations simultaneously.

4.2.1 What is the Incidence and Intensity of Multidimensional Deprivation in Each Age Group?

Children have a variety of needs and rights that need to be satisfied simultaneously to ensure their survival, protection and development. Adopting sector-wide approaches to deprivations fails to account for the former and diverts attention from the child as an individual. As a first step of the multidimensional deprivation analysis, the number of cumulative deprivations experienced by each child is counted and plotted for children of given age groups (see Figure 20). Distributions skewed to the right (left) indicate a high or low incidence of multidimensional deprivation.

In Angola, more than 98 per cent of children suffer deprivations in at least one dimension of their well-being, independently of their age group. Children who are 59 months old or under are mostly deprived in five simultaneous dimensions, while those aged 5 and above mostly suffer from three simultaneous deprivations. Overall, younger children tend to be deprived in more dimensions simultaneously than older children.

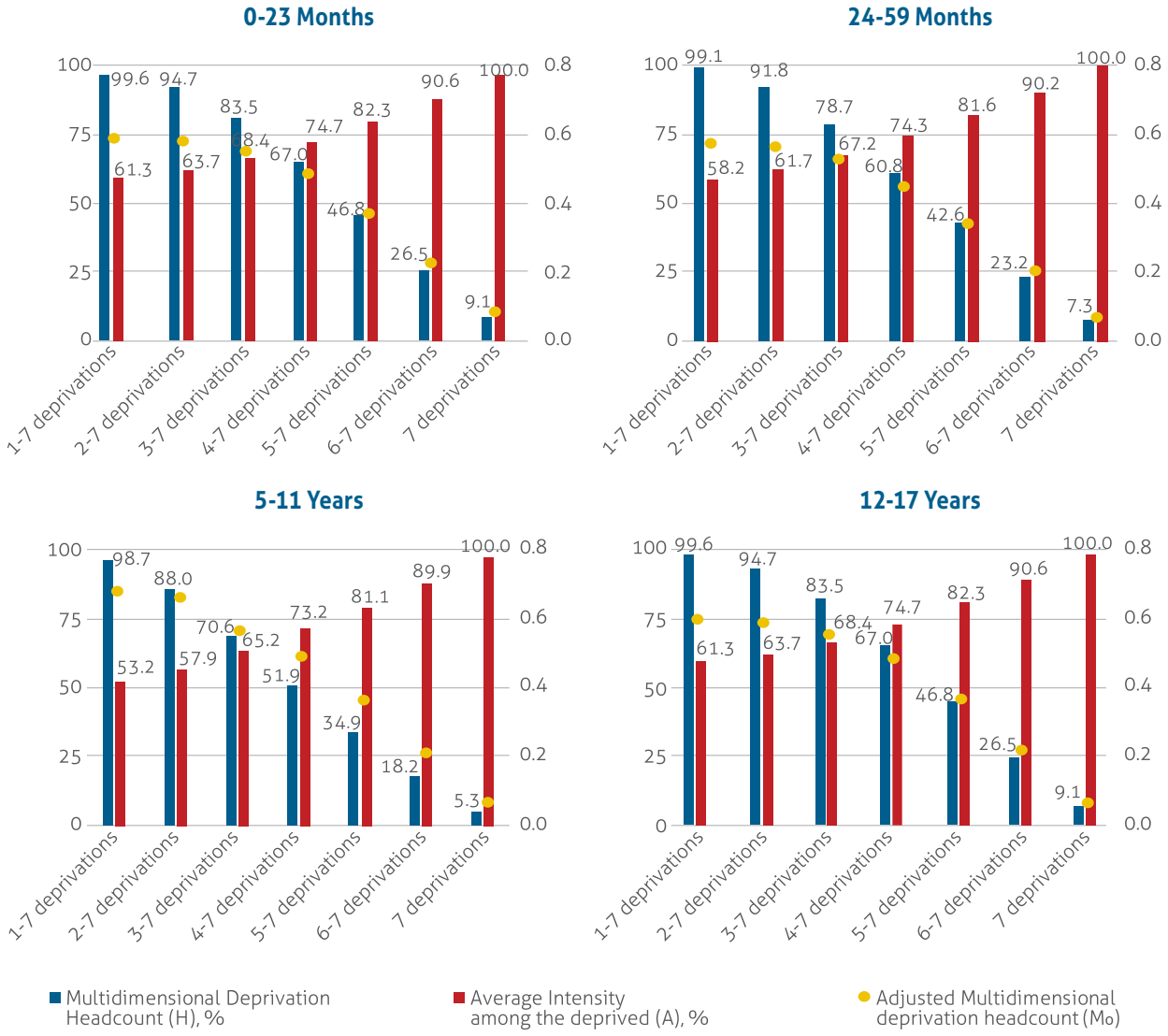
Figure 20. Distribution of Simultaneous Deprivations by Age Group



The previous distributions can be summarised using multidimensional deprivation indices. These indices are calculated for all possible thresholds of multidimensional deprivation, i.e. if children face one or more, two or more, three or more, ... seven deprivations, they are classified as multidimensionally deprived. Multidimensional deprivation indices are calculated for each age group of children in Angola as shown in Figure 21. In the case of Angola, the deprivation threshold k=3 has been used to categorize children, irrespective of their age, as to whether they are multidimensionally deprived or not. This threshold identifies children with three or more deprivations (out of the seven considered for each age group) as multidimensionally deprived and provides a realistic reference point for national poverty reduction efforts.

The multidimensional deprivation headcount *(H)* is the proportion of children from each age group considered to be deprived for a given multidimensional deprivation threshold k. The average intensity among the deprived *(A)* estimates the breadth of deprivation suffered by children identified as multidimensionally deprived. The adjusted multidimensional deprivation headcount *(Mo)* is an index reflecting both the incidence and intensity of multidimensional deprivation. The index cannot be directly interpreted, although it allows an overall comparison of the deprivations faced by distinct categories of children. For instance, for two subgroups of children with equal *H*, *Mo* is higher for the subgroup of children with a higher number of deprivations on average *(A)*.

Figure 21. Multidimensional Deprivation Indices by Age Group



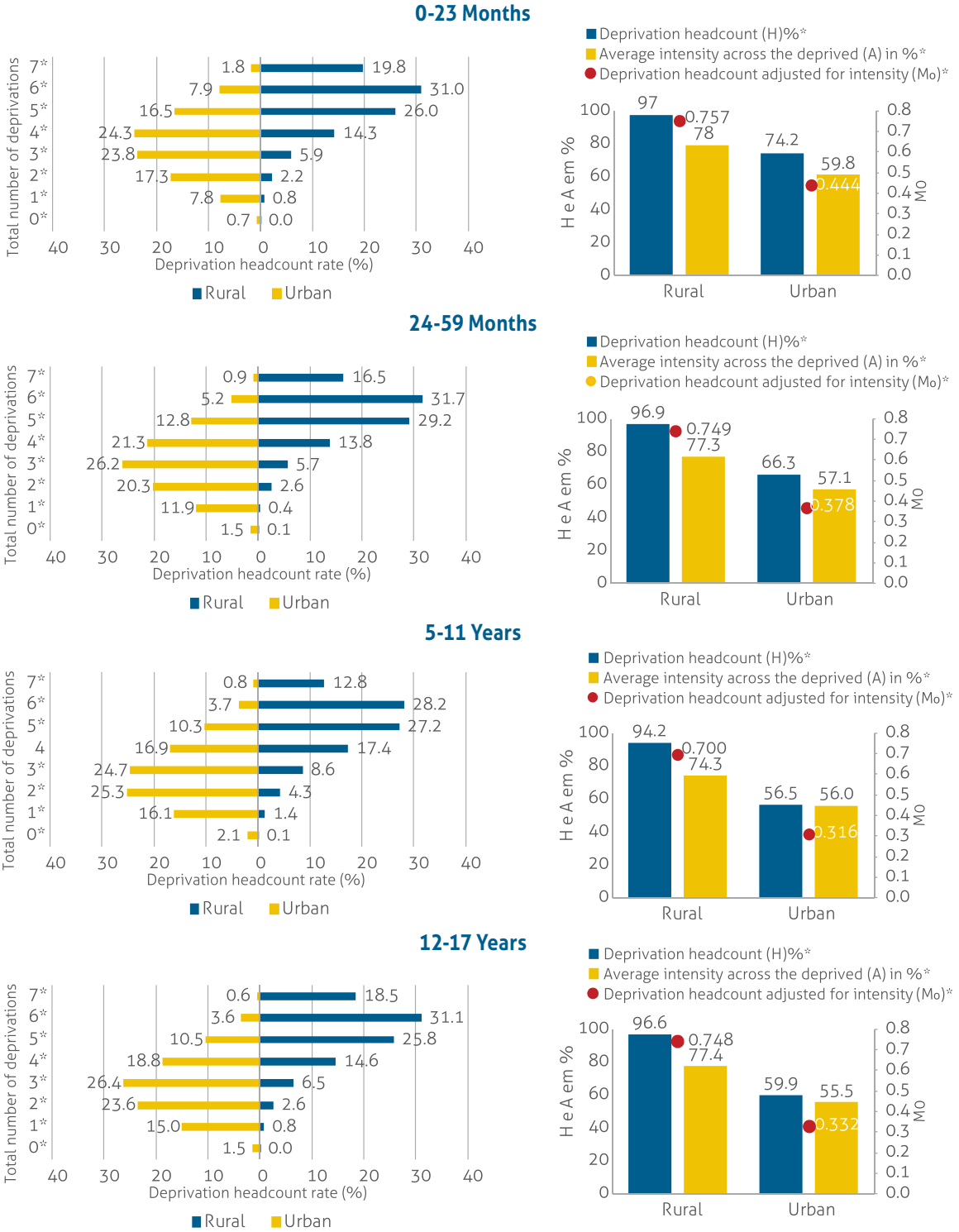
The data for children aged 0-23 months found that 83.5 per cent of children suffer from three deprivations or more with an average intensity of 68.4 per cent of all possible deprivations. On the other hand, for the same threshold, 78.7 per cent, 70.6 per cent and 71.4 per cent of children aged 24-59 months, 5-11 years and 12-17 years respectively are multidimensionally deprived. Notwithstanding differences in the incidence rate, the average intensities of deprivation among the deprived are only slightly different but decrease with age, ranging from 68 per cent from the 0-23 months age group to 65 per cent for children aged 12-17 years. The higher the threshold selected, the lower the incidence and the higher the average intensity of multidimensional deprivation observed. Adjusting jointly for both intensity and severity *(M_0 index)*, the 0-23 months age group has the highest levels of children who are multidimensionally deprived.

As for the sector-by-sector analysis, multidimensional deprivations can be studied and compared across children profiled according to given characteristics. This type of analysis allows the identification of the most deprived children, focusing on their overall vulnerability, irrespective of the sector of deprivation. Profiling multidimensionally deprived children is therefore cogent with the child-rights approach dictating that all rights are equal and should be secured equitably for all children. An illustration of the incidence of multidimensional deprivation, assuming a deprivation threshold of k=3 for children with the different profiles of analysis by age group, can be found in Appendix C.[12]

In addition to providing advocacy material, the identification of the most vulnerable children can provide useful information for programmatic purposes. For example, studying deprivations according to the area of residence of the child can be helpful in prioritizing efforts and resources towards children in need, thereby improving vertical equity. Figure 22 shows that for all age groups, children in rural areas are the most deprived, both in terms of the incidence and intensity of multidimensional deprivation.

[12] A sensitivity analysis was undertaken which calculated the child deprivation rates with a threshold k=4 (see Appendix D).

Figure 22. Distribution of Simultaneous Deprivations and Multidimensional Deprivation Indices (k=3) by Area of Residence and Age Group



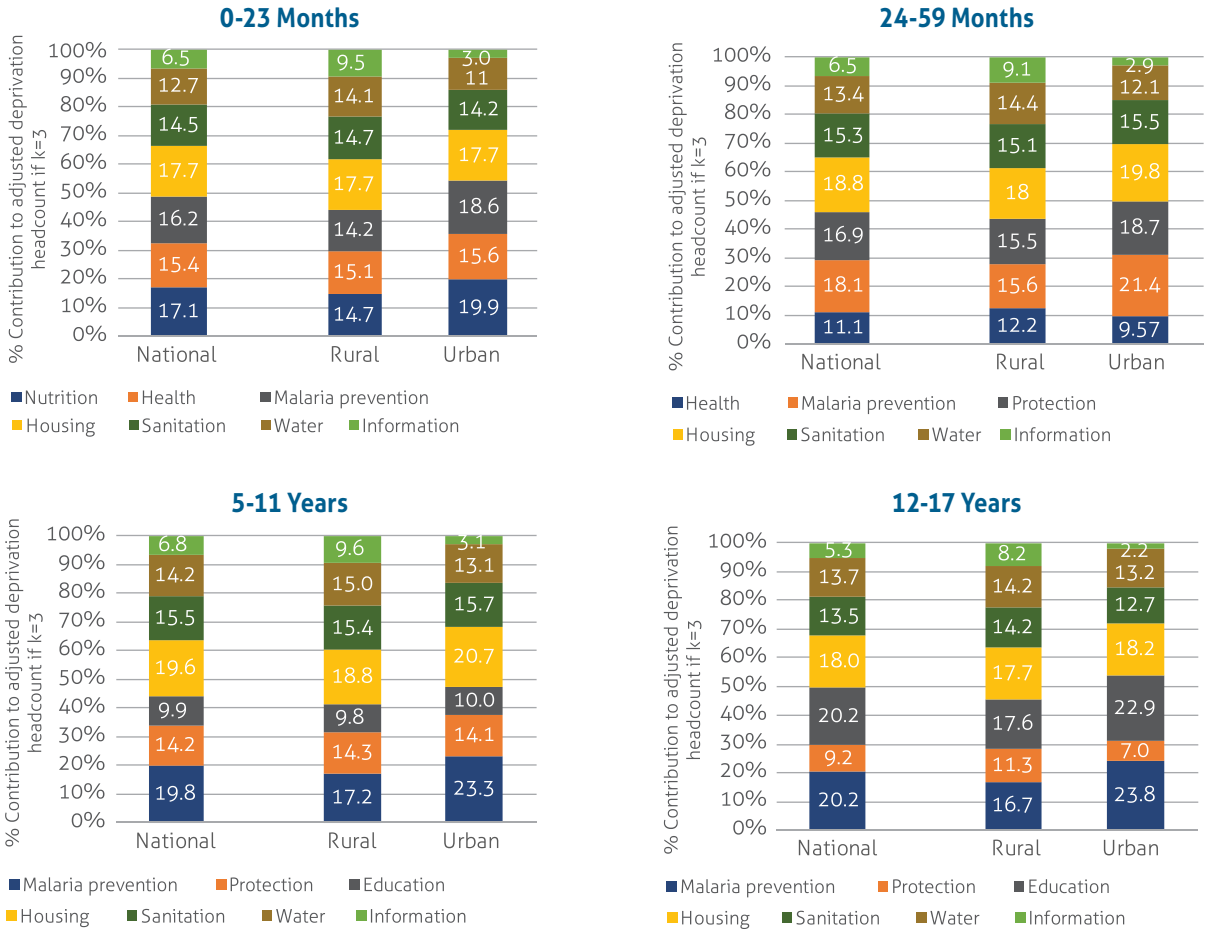
Note: * p<0.05 in Chi-squared test of independence.

The concept of multidimensional deprivation does provide insights, but its use is often limited to reporting about well-being, without giving guidance on how to achieve improved child well-being. The index *Mo*, reflecting the incidence and intensity of child multidimensional deprivation, can be disaggregated to show the contribution of each dimension in calculating various multidimensional deprivation thresholds.

For example, Figure 23 shows that for children from all age groups, the dimensions contributing the most to the deprivation headcount, adjusted for intensity, are Housing and Malaria Prevention. For children aged 12-17 years, Education was also an important contributor. By addressing deprivations in these dimensions an important reduction of multidimensional deprivation for all children for a threshold *k*=3 would be attained.

The figure below also shows that the contribution of each dimension to *Mo* differs according to the area of residence of the children under consideration, thereby pointing to the need for adequate solutions that may sometimes differ as per the child profile.

Figure 23. Contribution of Each Dimension to *Mo* (*k*=3) by Area of Residence and Age Group

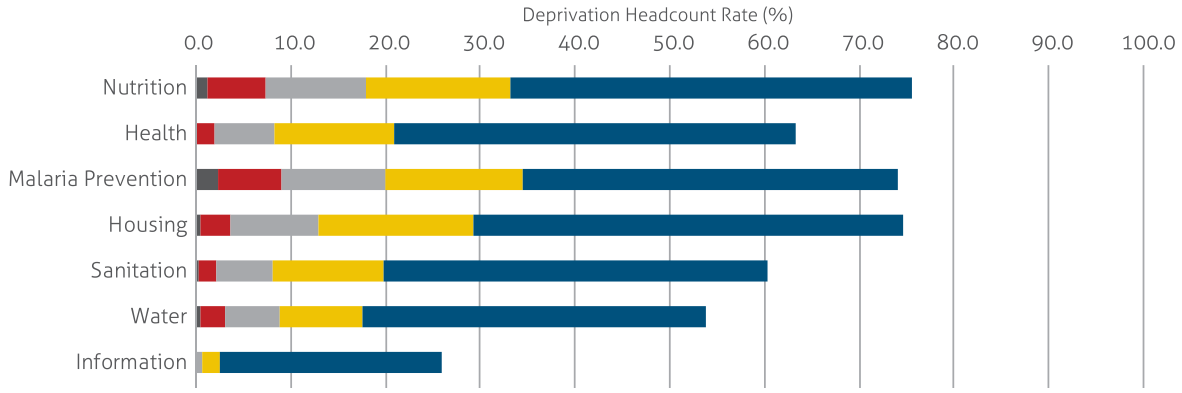


4.2.2 How Do Deprivations Overlap in Angola? Multiple Overlapping Deprivation Analysis

Understanding how overlapping deprivations are experienced allows the identification both of the most vulnerable children and of sectors that could benefit from an integrated approach to policy-making. The multidimensional deprivation overlaps faced by the children of Angola are studied through a two-level analysis. The first-level analysis of the deprivation rates by dimension for each age group is deepened by identifying the proportion of children deprived in a given dimension who are also deprived for an additional (one, two, three, four and more) dimensions. At the second level of the analysis, the overlaps among the combinations of the three dimensions are studied.[13]

Figure 24 below shows the deprivation overlap by dimension for children aged 0-23 months in Angola. For this age group, the proportion of children deprived in one given dimension is low. For instance, when the focus was on the deprivation overlap for the *Nutrition* dimension, only 1.2 per cent of the children were deprived in *Nutrition*, while the rest were deprived in one or more additional dimensions: 6 per cent in one other dimension, 11 per cent in two others, 15 per cent in three others, and 42 per cent in four or more additional dimensions. With the exception of the *Malaria Prevention*, less than 1 per cent of the children were deprived solely in the dimension specified. In the case of *Information*, this dimension always greatly overlaps with others since most children deprived in this dimension are also deprived in four or more other dimensions.

Figure 24. Deprivation Overlap by Dimension for Children Aged 0-23 Months



	Information	Water	Sanitation	Housing	Malaria Prevention	Health	Nutrition
Only deprived in given dimension	0.0	0.4	0.3	0.5	2.3	0.1	1.2
Deprived in 1 other dimension	0.0	2.6	1.9	3.2	6.7	1.8	6.2
Deprived in 2 other dimensions	0.6	5.7	5.9	9.1	11.0	6.5	10.7
Deprived in 3 other dimensions	1.9	8.8	11.6	16.4	14.5	12.5	15.2
Deprived in 4 or more other dimensions	23.5	36.1	40.5	45.3	39.5	42.5	42.3

[13] All possible combinations of an overlap of the three dimensions have been calculated for this study. However, only those more relevant empirically and/or for programming purposes have been included in this report.

Figure 25 displays the overlap for deprivations in the *Nutrition*, *Health* and *Housing* dimensions for children aged 0-23 months. The results show that there is an important level of overlap in deprivations for these three dimensions. In fact, 47 per cent of the children are deprived in all three dimensions simultaneously. *Nutrition* and *Housing* overlap with each other to the largest extent at around 57 per cent. While 63 per cent of children aged 0-23 months are deprived in *Health*, only 1 per cent are deprived in *Health*, but not deprived in *Nutrition* and/or *Housing*.

Panels B and C in the same figure show a similar but more extreme picture when looking only at the rural areas and the province with the highest overlap in the three dimensions under study, Bié. In fact, 70 per cent and 73 per cent of children from rural areas and the province of Bié respectively, are deprived simultaneously in the *Nutrition, Health* and *Housing* dimensions. Around 1 per cent of children are deprived only in *Nutrition* or *Health* for both Bié and the rural areas, while *Housing* deprivation affects a higher percentage of children. When comparing national and regional figures, the diverse overlap situations portrayed indicate the importance of studying different subgroups to ensure that the most appropriate policy response is provided.

Housing indicators are often used as proxies for monetary poverty due to its correlation with bad housing conditions, for example, poor materials and overcrowding. On the other hand, the literature on child poverty shows that children's health and nutritional status are determined by more than monetary factors. National health insurance programmes, fee waivers on health services, health care for all, financed from general tax revenue, can significantly impact access to health services, even for the worst off. Adequate child nutrition is often correlated to mothers' education. The large overlap between the three dimensions suggests possible links with a lack of income. However, this study is limited to describing observed links and correlations. More research is therefore needed to identify existing causalities among and determinants within these three deprivation dimensions.

Figure 25. Deprivation Overlap for Children Aged 0-23 Months in Nutrition, Health and Housing

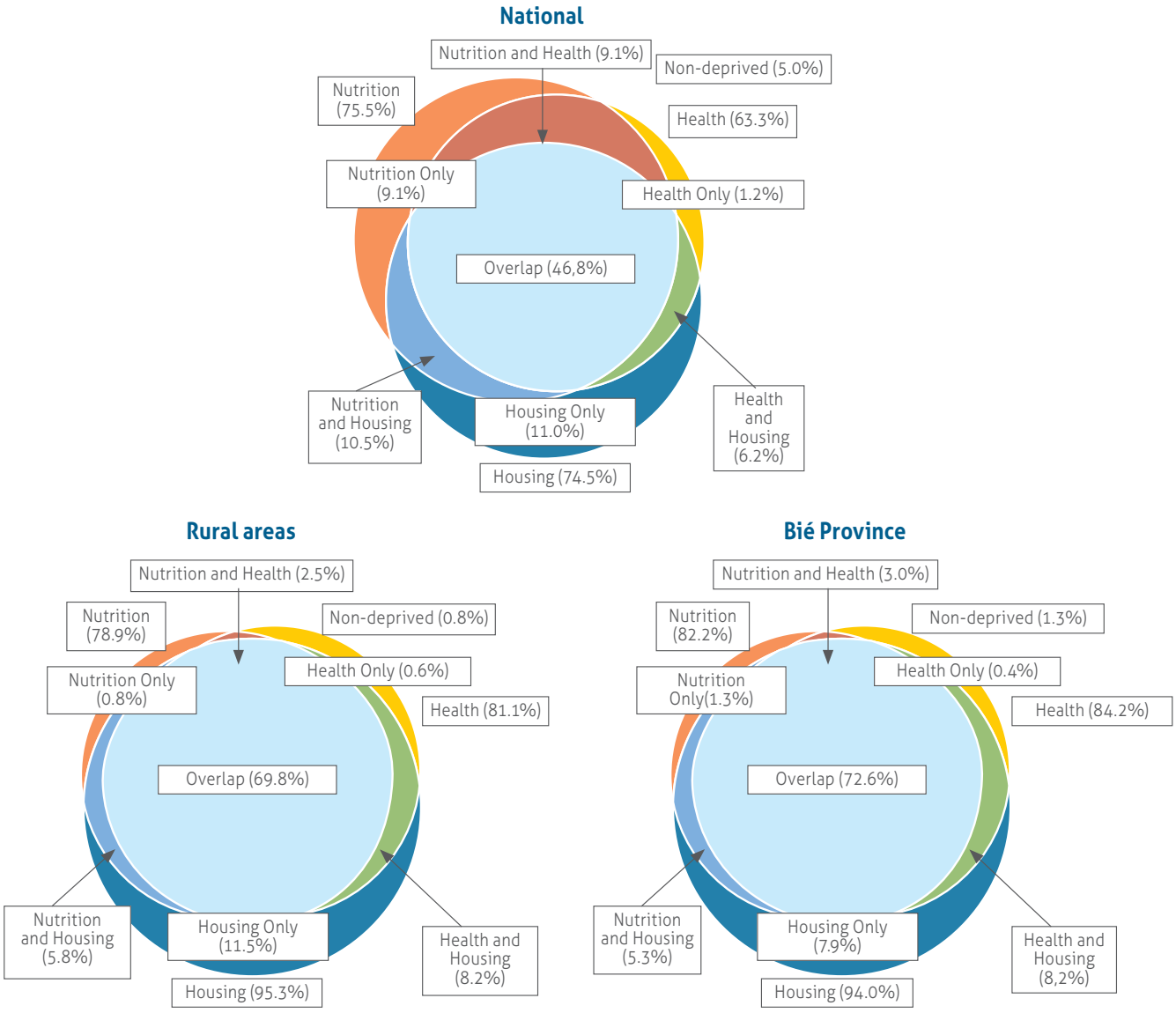
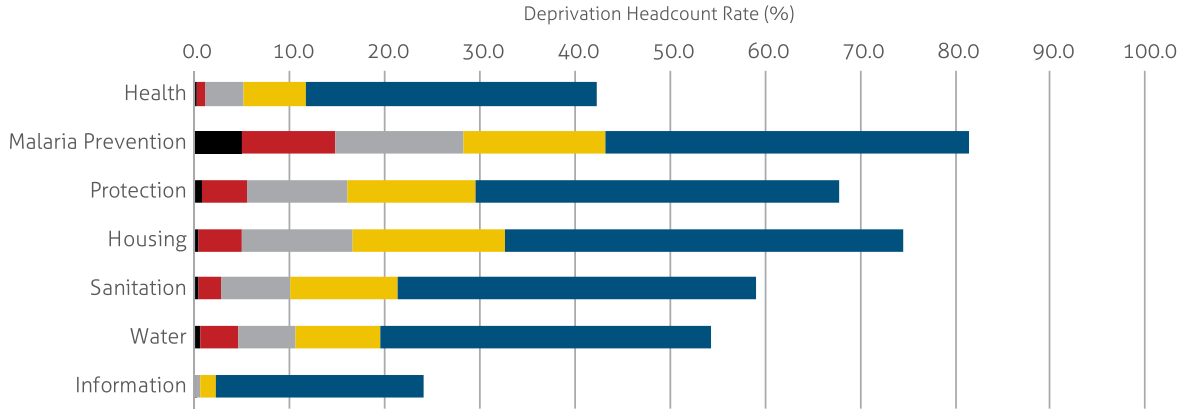


Figure 26 shows the deprivation overlap by dimension for children aged 24-59 months. Few children aged 24-59 months were found to experience deprivation for a given dimension only. Once again, the deprivation for the *Malaria Prevention* dimension was the exception with 5 per cent of children deprived only in that dimension. However, one should also point out that 10 %, 14 %, 15 % and 38 % of children are deprived in relation to *Malaria Prevention* in 1, 2, 3, 4 or more additional dimensions respectively. Moreover, most children deprived in *Health* are also more vulnerable children, as they also experience deprivations in four or more other dimensions.

Figure 26. Deprivation Overlap by Dimension for Children Aged 24-59 Months



	Information	Water	Sanitation	Housing	Protection	Malaria Prevention	Health
Only deprived in given dimension	0.0	0.6	0.3	0.4	0.8	5.0	0.1
Deprived in 1 other dimension	0.0	4.0	2.3	4.6	4.6	9.7	1.0
Deprived in 2 other dimensions	0.5	5.9	7.4	11.6	10.6	13.6	3.9
Deprived in 3 other dimensions	1.6	8.9	11.3	16.0	13.5	14.9	6.6
Deprived in 4 or more other dimensions	21.9	34.9	37.8	41.9	38.3	38.4	30.6

Analysing the deprivation overlap among the *Malaria Prevention, Child Protection* and *Housing* dimensions, 45 per cent of children from the 24-59 months age group are simultaneously deprived. *Malaria Prevention, Child Protection* and *Housing* deprivations affect 81.5 per cent, 67.8 per cent and 74.5 per cent respectively of these children in Angola. At the urban level, 31 per cent of children suffer from three-way deprivation given similar individual dimensional deprivation rates. This represents half of the overlap registered in rural areas. On the other hand, in the oil-rich province of Cabinda, individual dimensional deprivation rates are much higher than at the national and urban levels, resulting in a relatively lower three-way overlap of 18.2 per cent.

Figure 27. Deprivation Overlap for Children Aged 24-59 Months in Malaria Prevention, Child Protection and Housing

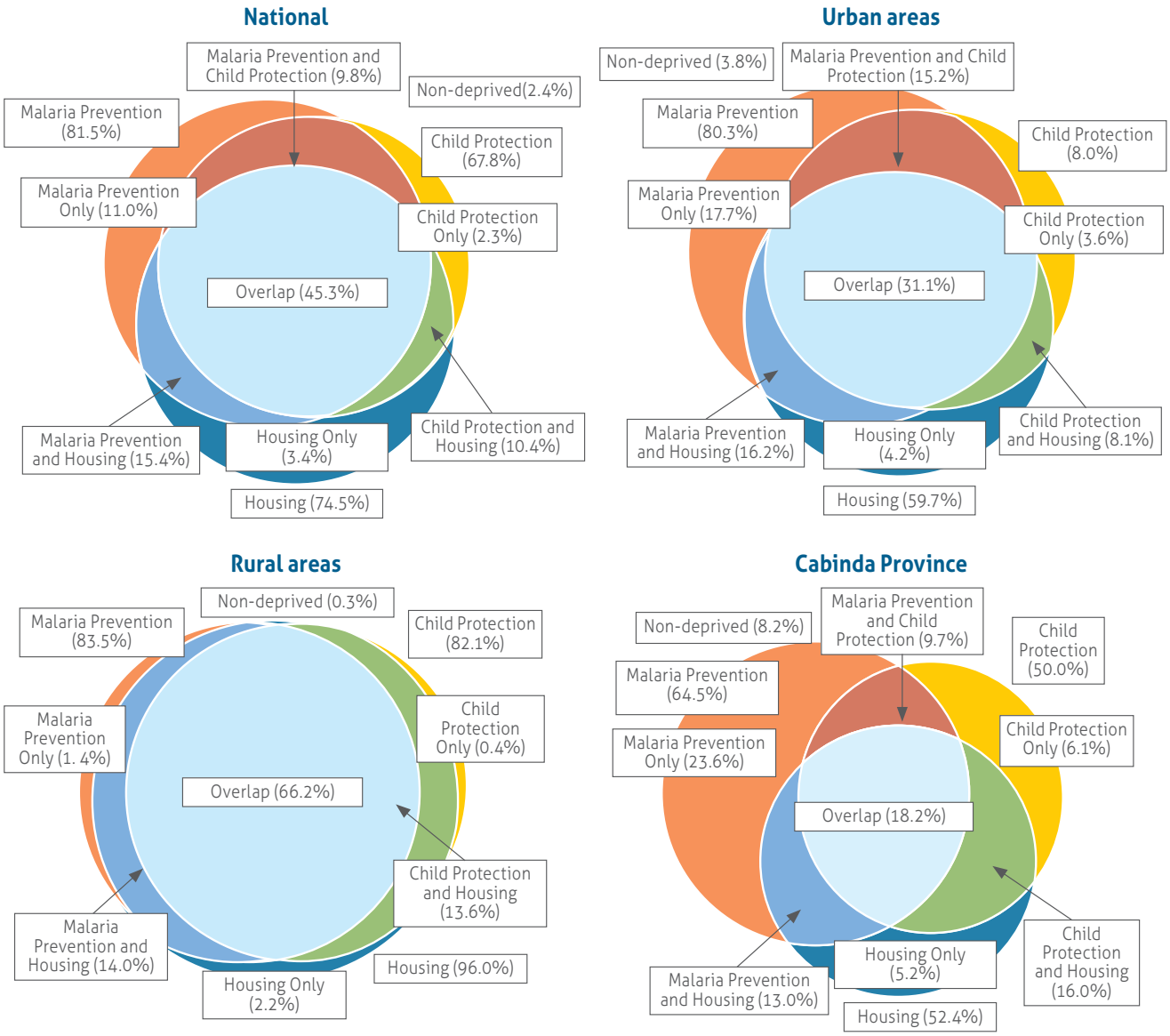
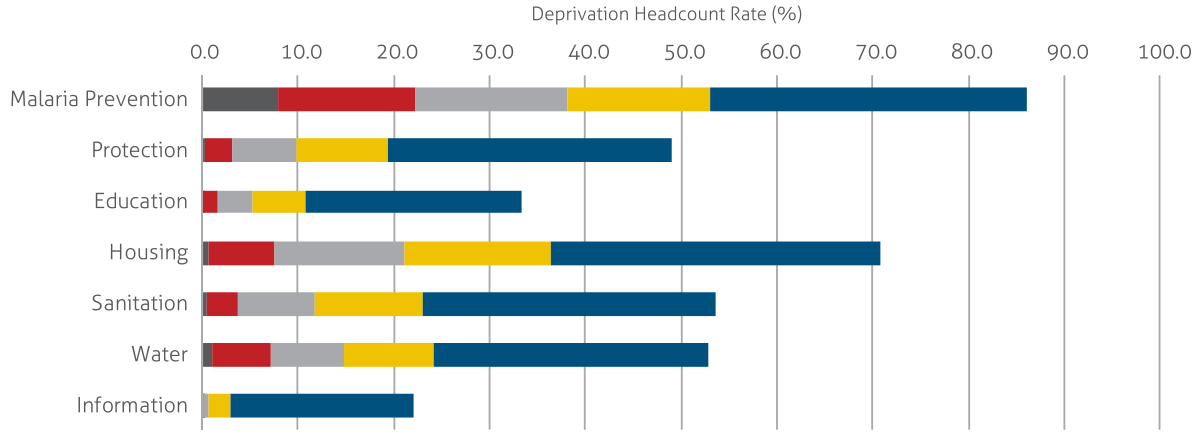


Figure 28 shows the deprivation overlap by dimension for the third age group of 5-11 years. Akin to the situation observed for the previous two age groups, deprivations limited to one dimension are not widespread. In all the dimensions studied for children aged 5-11 years, more than 25 per cent of the children tended to be deprived in a given dimension, as well as four or more additional ones. However, the percentage of children simultaneously deprived in five to seven dimensions is relatively much lower than for previous age groups.

Figure 28. Deprivation Overlap by Dimension for Children Aged 5-11 Years



	Information	Water	Sanitation	Housing	Education	Protection	Malaria Prevention
Only deprived in given dimension	0.0	1.0	0.6	0.6	0.1	0.3	8.0
Deprived in 1 other dimension	0.0	6.2	3.1	7.0	1.4	2.9	14.2
Deprived in 2 other dimensions	0.7	7.6	8.0	13.5	3.6	6.7	15.9
Deprived in 3 other dimensions	2.3	9.4	11.4	15.3	5.5	9.5	14.9
Deprived in 4 or more other dimensions	19.0	28.6	30.6	34.4	22.7	29.6	33.1

Figure 29 below focuses on children aged 5-11 years and shows three-way overlapping deprivations for the *Housing, Sanitation* and *Water* dimensions at the national level and the provinces of Luanda and Cunene. Despite 50 per cent of the children of Angola experiencing deprivations in each of these dimensions at the national level, 29.6 per cent of them are simultaneously deprived of basic infrastructure. These children accumulate mutually reinforcing deprivations that are directly linked to their chances of survival. In fact, improved sanitation facilities help in reducing contamination and the spread of diseases. However, by consuming unimproved and/or untreated water, contamination can still occur and spread easily in overcrowded dwellings, for example.

A comparison of the two provinces shows that if in Luanda sectoral responses are required to complement access to housing, sanitation and water, in Cunene province multisectoral responses are necessary as most of the children are simultaneously deprived in the three sectors. The stark contrast in living conditions in the two provinces underscores the flexibility and adaptability needed when putting forward efficient intranational solutions.

Figure 29. Deprivation Overlap for Children Aged 5-11 Years in Housing, Sanitation and Water

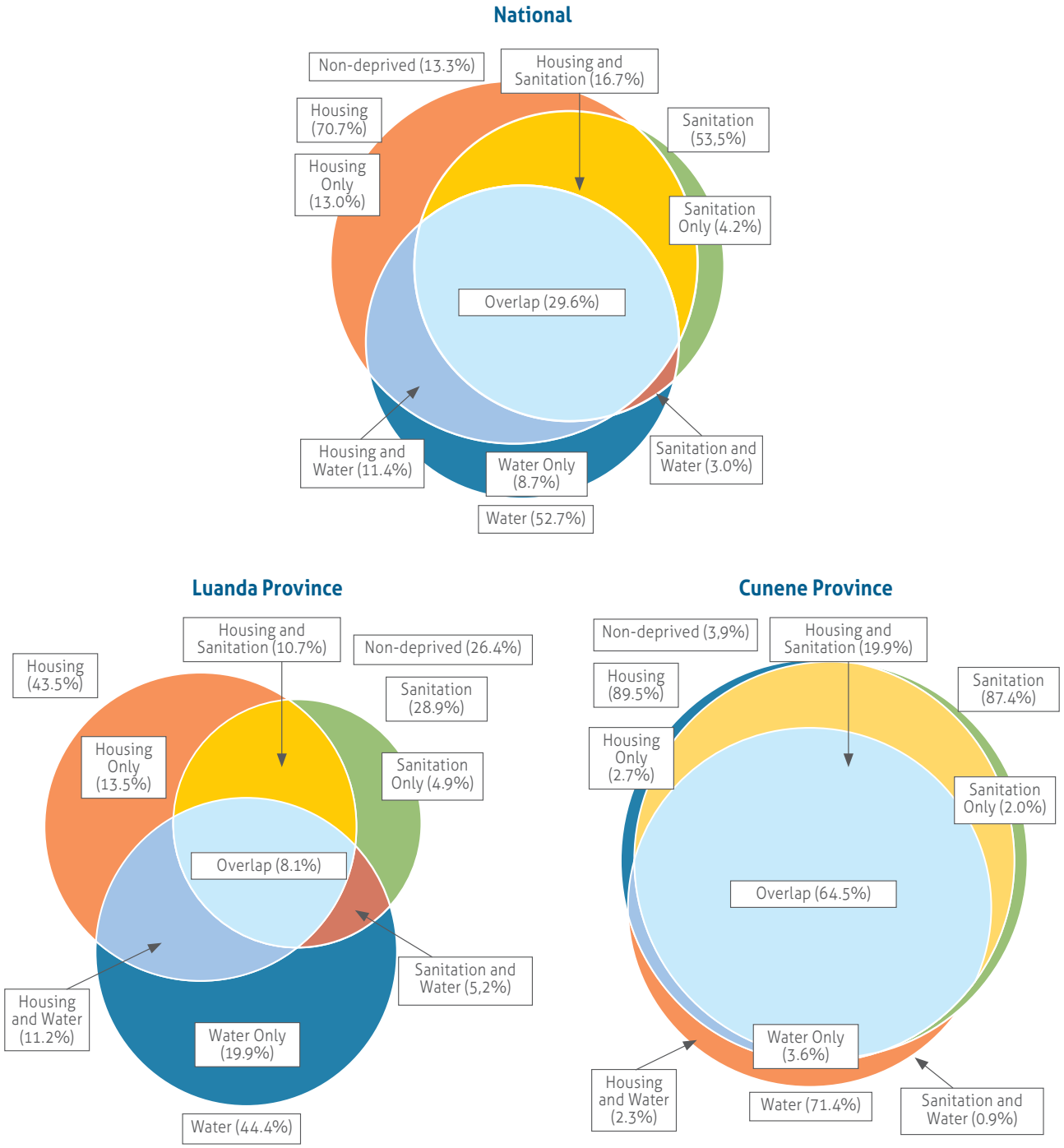
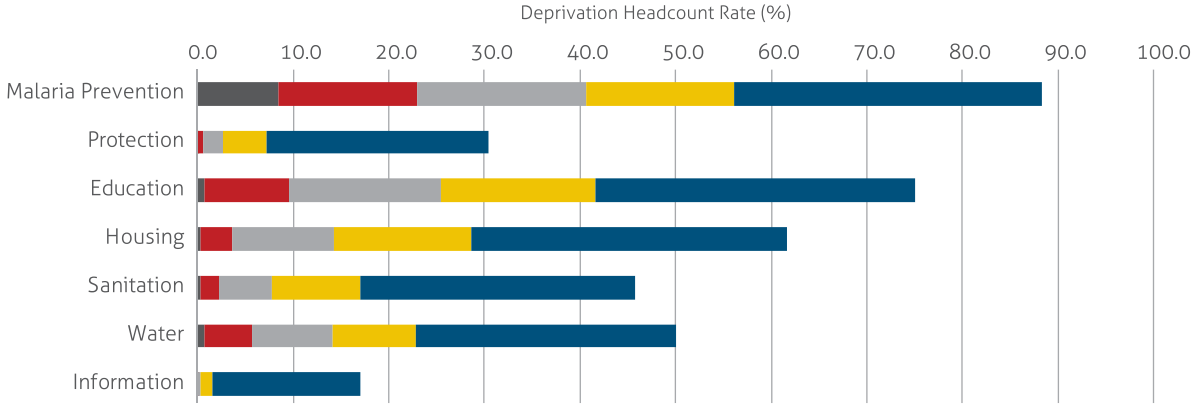


Figure 30 shows the deprivation overlap by dimension for the older age group of children aged 12 to 17 years. Few children are deprived in a given dimension only. Taking the example of deprivation in the Education dimension, it was found that 9 %, 16 %p, 16 % and 33 % of children aged 12-17 years are deprived in *Education* in 1, 2, 3 and 4 or more additional dimensions respectively.

Children aged 12-17 years were found to be less vulnerable compared to the other two age groups. In fact, this age group shows the lowest percentage of children deprived in the given dimension and in four or more dimensions at a time except for *Education*. While in the 5-11 years age group (see Figure 29) most of the children are deprived in *Education* and four or more other dimensions (i.e. they are extremely vulnerable children), the situation is more varied for the oldest age group, children aged 12-17 years.

Figure 30. Deprivation Overlap by Dimension for Children Aged 12-17 Years



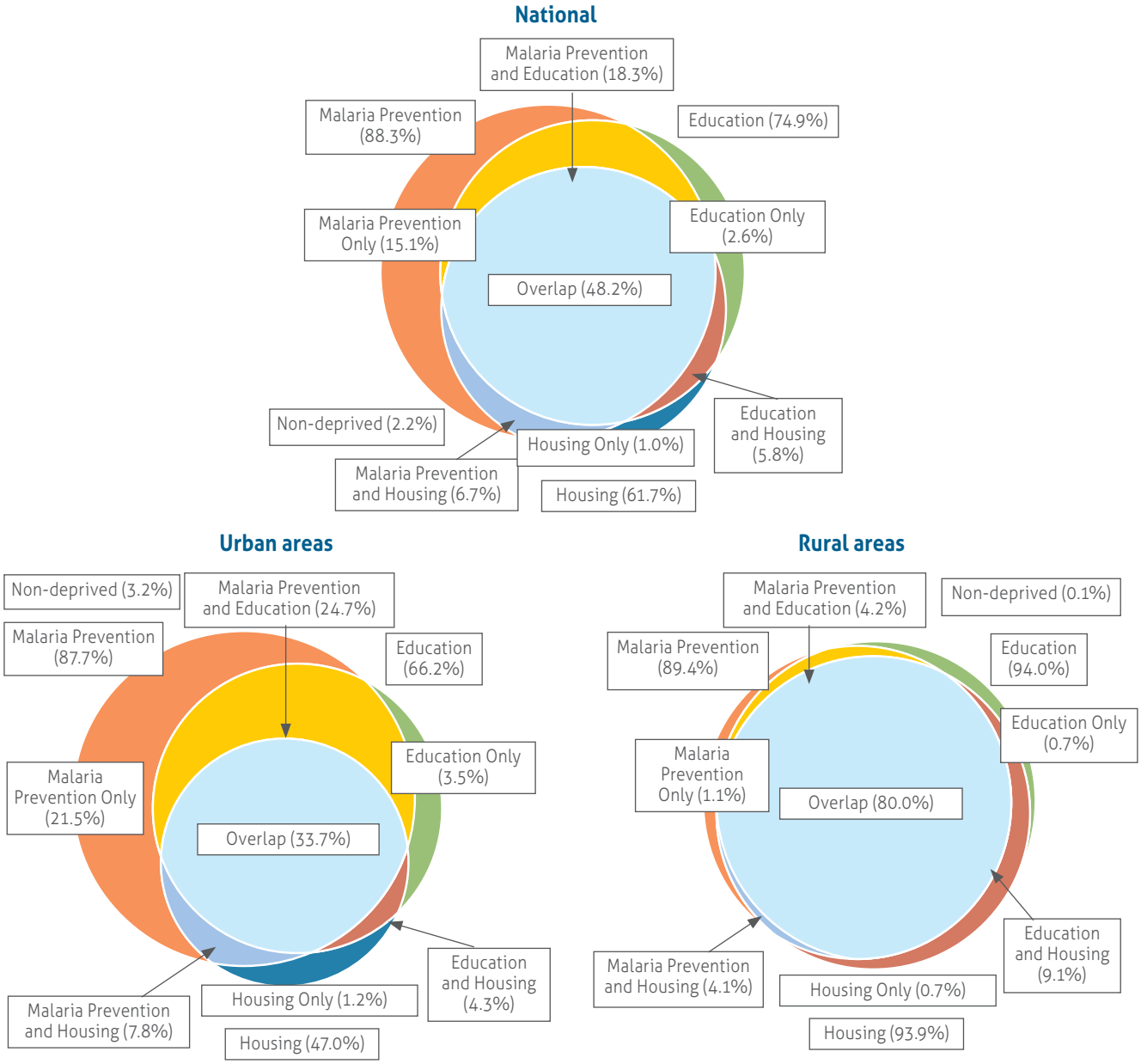
	Information	Water	Sanitation	Housing	Education	Protection	Malaria Prevention
Only deprived in given dimension	0.0	0.7	0.3	0.3	0.7	0.1	8.5
Deprived in 1 other dimension	0.0	5.0	1.9	3.3	8.9	0.5	14.5
Deprived in 2 other dimensions	0.2	8.4	5.5	10.7	15.9	2.1	17.7
Deprived in 3 other dimensions	1.2	8.8	9.2	14.3	16.2	4.6	15.5
Deprived in 4 or more other dimensions	15.6	27.2	28.8	33.1	33.3	23.1	32.1

To conclude this part of the analysis, the deprivation overlaps for children aged 12-17 years for the dimensions *Malaria Prevention, Education* and *Housing* have been studied. The three panels below in Figure 31 show that deprivation tends to occur simultaneously with 48.2 per cent, 33.7 per cent and even 80 per cent of children at the national, urban and rural levels respectively having experienced deprivation in all three dimensions at the same time.

These deprivation rates have important policy implications. Addressing deprivations in *Education* and *Malaria Prevention* through a joint policy could yield positive results since the overlap between these two dimensions is very significant, independently of the residential area studied. For example, after ensuring that all the children are in school, sensitization about the importance of preventing malaria and mosquito nets distribution programmes could be implemented through the schools. In-school education might be very relevant to transmit such knowledge

within households and across generations. On the other hand, programmes for *Housing* improvement could be made conditional on children attending school for households with children, or on household members' participation in sensitisation sessions about the importance of education attendance and malaria prevention.

Figure 31. Deprivation Overlap for Children Aged 12-17 Years in Malaria Prevention, Education and Housing



4.2.3 Summary: Main Points from the Multiple and Overlapping Deprivation Analysis

The severity of the deprivations faced by children is better understood by analysing whether they are experienced simultaneously. Overlapping deprivations have higher adverse effects and, thus, it is important to better identify who are the children accumulating multiple and overlapping deprivations. The multiple and overlapping deprivation analysis revealed the following key messages:

1. Younger children tend to be more severely deprived. Children under 5 years of age are mostly deprived in five simultaneous dimensions, while those aged 5 and above mostly suffer from three simultaneous deprivations.
2. Children from rural areas are the most severely deprived.
3. Deprivations in the *Housing* and *Malaria Prevention* dimensions contribute the most to the incidence and intensity of multidimensional deprivation for a threshold k=3. For children aged 12-17 years, Education was also identified as one of the main contributing dimensions to multidimensional deprivation.
4. The percentage of children deprived in a given dimension is low. A child observed to be deprived in a given dimension tends to be deprived in 2, 3, 4 or more additional dimensions.
5. Venn diagrammes have been used to illustrate three-way overlapping deprivations. The extent of overlap varies largely depending on the profile of the child studied. Deprivation overlaps tend to be smaller for children in urban areas and those living in Luanda.

5. Conclusions

Childhood poverty and deprivation can have devastating effects. Most of the studies informing child well-being analyse the socioeconomic level of the household to which the child belongs. In that way, it makes the implicit assumption that access to a minimum level of income will automatically lead to the child's well-being. However, children are rarely responsible for the resource allocation within their households, nor do they have any influence on matters directly affecting them.

The MODA methodology applied in this study directly assessed child poverty by studying the deprivations of children for a set of dimensions that explain child well-being in Angola. The analysis identified to what extent children are deprived in the *Nutrition, Health, Child Protection, Malaria Prevention, Education, Information, Housing, Water* and *Sanitation* dimensions. This study of child poverty in Angola also adopted a child-centred approach considering each child as an individual whose rights must be fulfilled. To that end, the incidence and intensity of multiple and overlapping deprivations that children face have been studied.

It was also recognized that children's needs differ across the different phases of their childhood. For this reason, dimensions of deprivations were identified for four age groups: 0 to 23 months, 24 to 59 months, 5 to 11 years and 12 to 17 years. In addition to the multidimensional analysis carried out for the entire child population, separate analyses of sectoral and multidimensional deprivations were also undertaken for each age group.

When focusing on deprivations by dimension, remarkable deprivation levels were observed for *Nutrition* (for children under 2 years), *Malaria Prevention* and *Housing* dimensions which represent serious threats to child survival in Angola. Moreover, children's developmental opportunities were also found to be at risk given the important deprivation rates observed for the Education dimension, especially for the oldest children in the realm of 39.9 per cent and 75 per cent for children of the third and fourth age groups respectively.

Primary school attainment as a proxy of human capital formation for children 12 to 17 years old is low, indicating the low quality and efficiency of the school system in Angola. Although, on a more positive note, deprivation in the Information dimension, a factor also affecting child development, impacted less than 25 per cent of the children in all age groups. Certainly, an increase in the quality of education will contribute to economic growth and overall productivity, which is fundamental for the development of Angola.

Child Protection did not have the highest deprivation level, although this dimension affected more than two thirds of children aged 24 to 59 months and a 30 per cent of children aged 5 to 17 years. These findings indicate the importance of joint and coordinated investments to ensure that, once survival is secured for all children, they receive adequate protection and their developmental perspectives are guaranteed.

5. Conclusions

In line with the child-centred approach adopted for this study, after the analysis of deprivations for each dimension was made, the combination of deprivations faced by each child in Angola was counted and studied before being aggregated. The evidence showed that only an insignificant number of children did not experience deprivation with only 1 per cent of children under 18 years having no deprivations. This situation compares to conditions observed in large African countries, such as Ethiopia and the Democratic Republic of the Congo. Furthermore, nearly three out of four children were found to be deprived in 4.6 out of 7 dimensions on average.

In 2015, the United Nations, through its Sustainable Development Goals agenda, required countries to regularly report and monitor progress towards the attainment of multidimensional poverty targets by 2030. The MODA methodology meets the requirements for monitoring the SDG 1.2, and the child multidimensional deprivation incidence rate could be used as a benchmark for subsequent reporting and monitoring exercises.

Multidimensional deprivation was also studied for each age group. Younger children were found to have a higher probability of being deprived in more dimensions. The majority of children under 5 years were found to be deprived in five dimensions, while older children faced deprivations in three dimensions simultaneously. This finding, which highlights the vulnerabilities of young children, advocates for the allocation of sufficient resources to ensure that all children are granted an optimal start in life. Furthermore, the multidimensional nature of deprivation suggests that taking action in a sector-by-sector approach would yield only limited results in terms of reduced multidimensional deprivation incidence for those suffering from large numbers of deprivations. Instead, multisector interventions are required to make significant differences in favour of the most vulnerable.

By understanding how overlapping deprivations are experienced, one can determine the composition of the multiple deprivations faced by the most vulnerable children, and identify sectors that could benefit from an integrated approach to policy-making. This analysis showed that children deprived in a given dimension were rarely deprived in that dimension alone. In fact, they tended to accumulate two, three, four or more additional deprivations. The necessity of cross-sector collaboration and intervention has been emphasised following the deprivation count analysis. The overlapping analysis provides additional guidance on the possible gains of joint programmatic responses to child deprivations. Detailed information allows for better decisions that in turn lead to better outputs when implementing an integrated approach.

Multiple factors, ranging from household, mother and child characteristics and geographical location were found to correlate with children's single and multidimensional deprivations. The urban and rural division in the incidence and intensity of deprivation levels was often regarded as important, as were the disparities observed across provinces. Furthermore, the educational level of mothers and the household heads, anthropometric indices for young children and the fact of elder children being employed were factors that had significant correlations with the child deprivations found in most dimensions used in this study. The profiling of deprived children can be used for targeting scarce resources, and to inform the design of policies and interventions to better reach those in need.

This study undertook a systematic analysis of child poverty through the deprivation approach by studying the incidence and intensity of deprivation. The one-dimensional analysis of deprivations provides advocacy and programming information for sector-by-sector responses, in line with common and current practices. On the other hand, each child's situation is outlined through the multidimensional analysis. Children have multiple needs that cannot be ranked or prioritized, which underscores the need for taking action in a systematic fashion across sectors to better direct efforts and resources for improving child well-being.

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APPENDICES

Appendix A. Sample Description of the IIMS 2015-2016

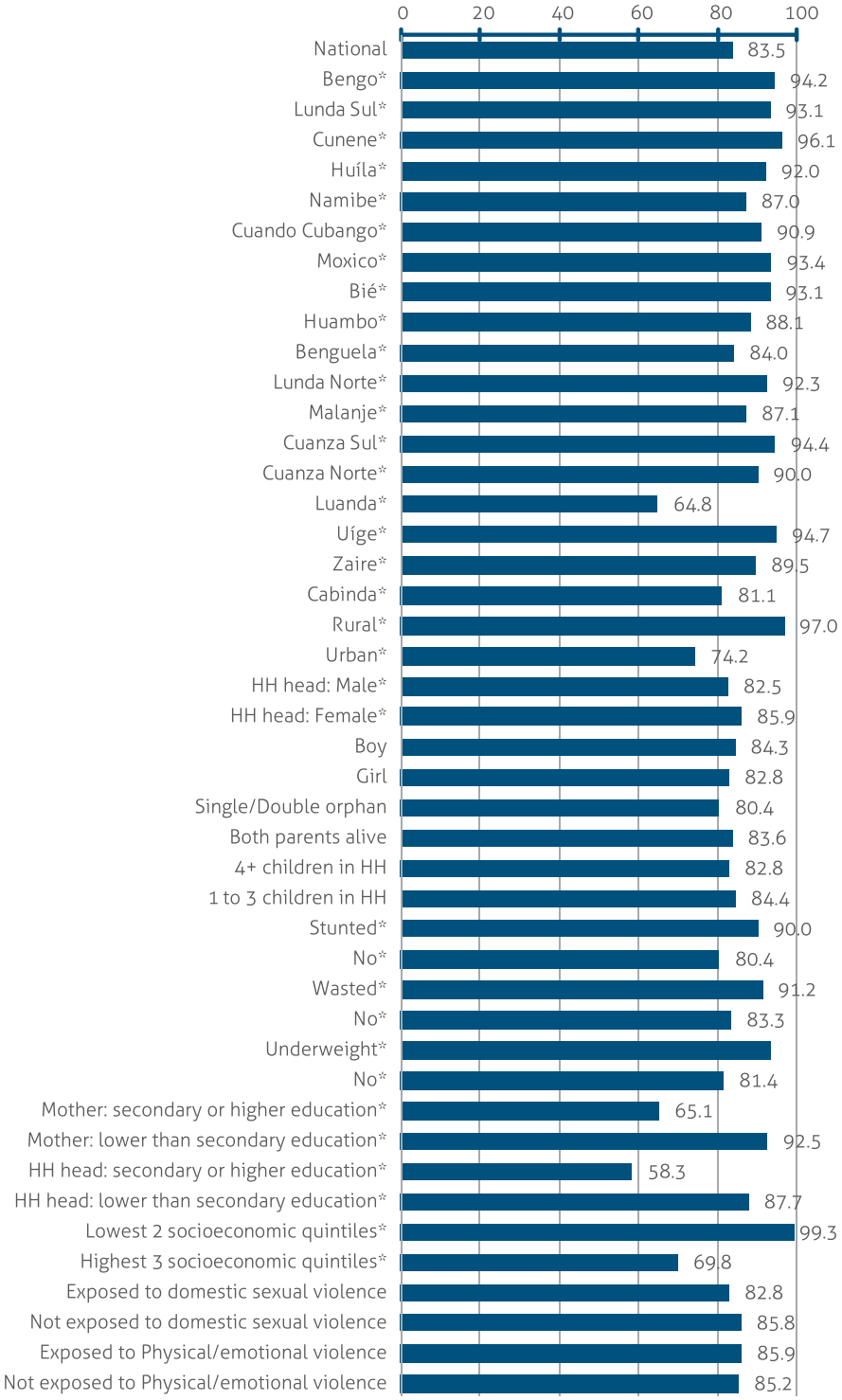
	All Children	0-23 Months	24-59 Months	5-11 Years	12-17 Years
National	**41,647**	**6,289**	**8,913**	**16,924**	**9,521**
In Households	12,620	5,811	7,205	9,059	6,353
Residence Area					
Urban	23,707	3,446	4,830	9,518	5,913
Rural	17,940	2,843	4,083	7,406	3,608
Province					
Cabinda	1,814	237	366	710	501
Zaire	2,076	313	406	835	522
Uíge	2,308	331	513	989	475
Luanda	4,537	589	822	1,845	1,281
Cuanza Norte	1,857	266	410	779	402
Cuanza Sul	2,010	296	470	808	436
Malanje	2,367	351	547	978	491
Lunda Norte	2,129	370	496	862	401
Benguela	2,327	339	494	948	546
Huambo	2,443	379	549	991	524
Bié	2,225	359	473	967	426
Moxico	1,885	325	432	787	341
Cuando Cubango	1,875	319	409	728	419
Namibe	2,358	356	475	967	560
Huíla	2,610	394	545	1,070	601
Cunene	2,697	404	617	1,010	666
Lunda Sul	2,293	386	505	937	465
Bengo	1,836	275	384	713	464

Appendix B. Dimensions, Indicators and Deprivation Thresholds by Age Group

Dimension	Indicator	Deprivation Threshold (Deprived if ...)
NUTRITION	Infant and Young Child Feeding: Exclusive Breastfeeding	*0-5 months:* Child is not exclusively breastfed.
	Infant and Young Child Feeding: Minimum Acceptable Diet	*6-23 months:* did not have a minimum meal frequency (MMF) and/or minimum dietary diversity (MDD) in the last 24 hrs. Currently breastfeed child: Child 6-8 months has not had at least 2 complementary feedings a day; 9-23 months has not received at least 3 complementary feedings. Currently non-breastfed child: Child 6-23 months has not received at least 4 feedings a day (at least 2 should be milk feeds). MDD requirement: food from at least 4 of the groups: Dairy products; Grains, roots and tubers; Vitamin A rich fruits and vegetables; Other fruits and vegetables; Eggs; Flesh foods; Legumes and nuts.
	Micronutrients Consumption (Vitamin A)	*0-23 months:* Child has not received Vitamin A doses by the recommended age: 1 dose by 6 months; 2 doses by age of 9 months.
HEALTH	Full Immunization	*0-23 months:* Child has not received all basic vaccinations by the recommended age: Tuberculosis (BCG) and Polio 0 by age of 1 month; DPT1 (DPT-HepB-Hib) and Polio 1 by age of 2 months; DPT2 and Polio 2 by age of 3 months; DPT3 and Polio 3 by age of 4 months; Measles and Yellow Fever by age of 10 months.
	Skilled Attendants at Birth	*0-59 months:* An unskilled birth attendant (relative, friend, parent, other, or no one) assisted with child's birth.
MALARIA PREVENTION	Insecticide-Treated Mosquito Net	*0-17 years: C*hild did not sleep in an Insecticide-Treated Mosquito Net (ITN) during most recent night.
EDUCATION	School Attendance	*6-17 years:* School-age child does not attend school.
	Grade-for-Age	*8-17 years:* School-age child either does not attend school, or attends school but is two or more years behind the corresponding grade for his/her age.
	Primary School Attainment	*12-17 years:* Child past primary school age with no or incomplete primary education.
CHILD PROTECTION	Birth Certificate	*2-17 years:* Child does not have a birth certificate.
SANITATION	Improved Toilet Facility	*0-17 years:* Household usually uses unimproved toilet facility: flush to somewhere else; pit latrine without slab/open pit; bucket toilet; flush to unknown place/not sure/DK where; no facility/bush/field.
	Sharing of Toilet Facility	*0-17 years:* Household toilet facility is shared by two or more households.
HOUSING	Housing material (Roof, floor & walls)	*0-17 years:* Household roof, floor and/or walls are made of natural materials, considered non-durable. Floor: earth/ sand; Roof: no roof, palm leaf/grass, cardboard. Walls: no walls; clay; Pau-a-piqué; tin/cardboard/paper/bags.
	Solid Cooking Fuel	0-17 years: Household uses solid cooking fuel (coal, lignite, charcoal, wood, straw, shrubs, grass, agricultural crop, animal dung, other) inside the household.
	Overcrowding	*0-17 years:* On average, household has more than three people per sleeping room.
WATER	Drinking Water Source	*0-17 years:* Household's main source of drinking water is unimproved. Also considered deprived if main source is bottled water and the source of main non-drinking water is unimproved.
	Drinking Water Treatment	*0-17 years:* Household does not treat the unimproved drinking water nor is it appropriately treated. Appropriate treatment method: boiling, adding bleach or chlorine, using a water filter or solar disinfection.
	Water Distance	*0-17 years:* Household's time to collect drinking water exceeds 30 minutes.
EXPOSURE TO THE MEDIA	Access to electronic and mobile devices	*0-17 years:* Household does not have any of the following electronic or mobile devices: TV, radio, cell phone or telephone.

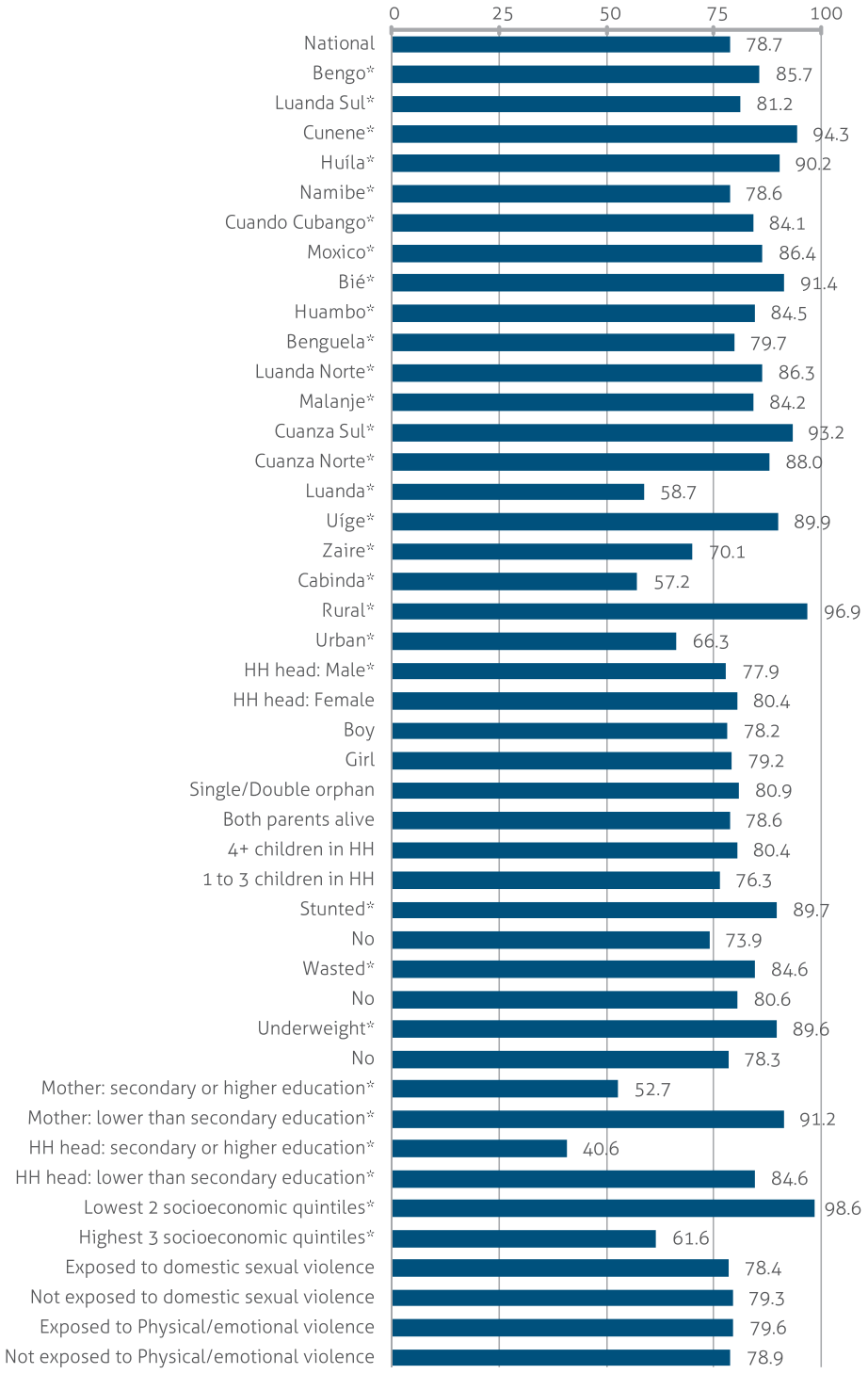
Appendix C. Multidimensional Deprivation Headcount by Age Group for All Possible Profiling Variables Using a Deprivation Threshold of k=3

Percentage of Children Aged 0-23 Months Deprived in 3-7 Dimensions with Different Profiles



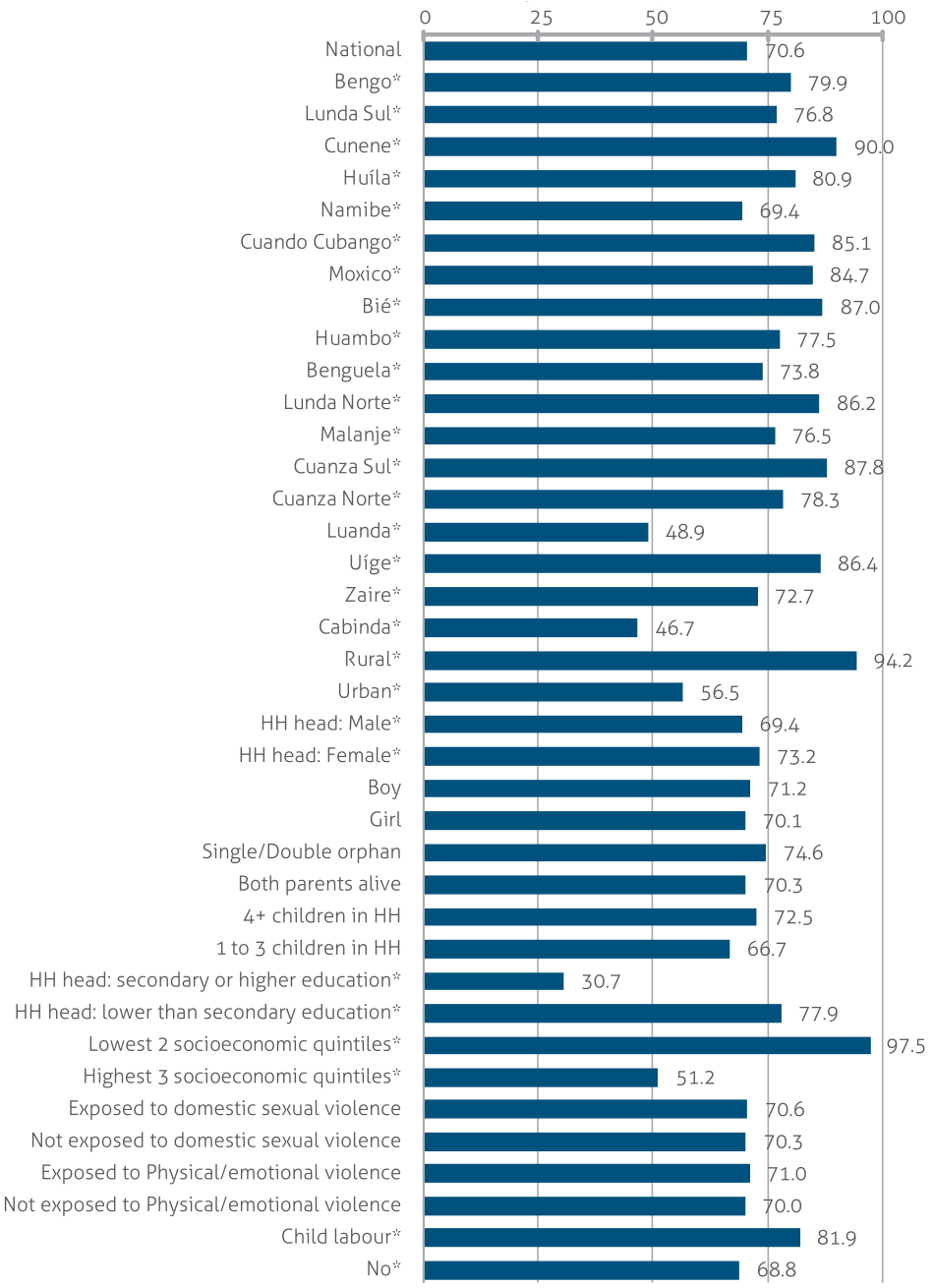
Note: * p<0.05 in Chi-squared test of independence.

Percentage of Children Aged 24-59 Months Deprived in 3-7 Dimensions with Different Profiles



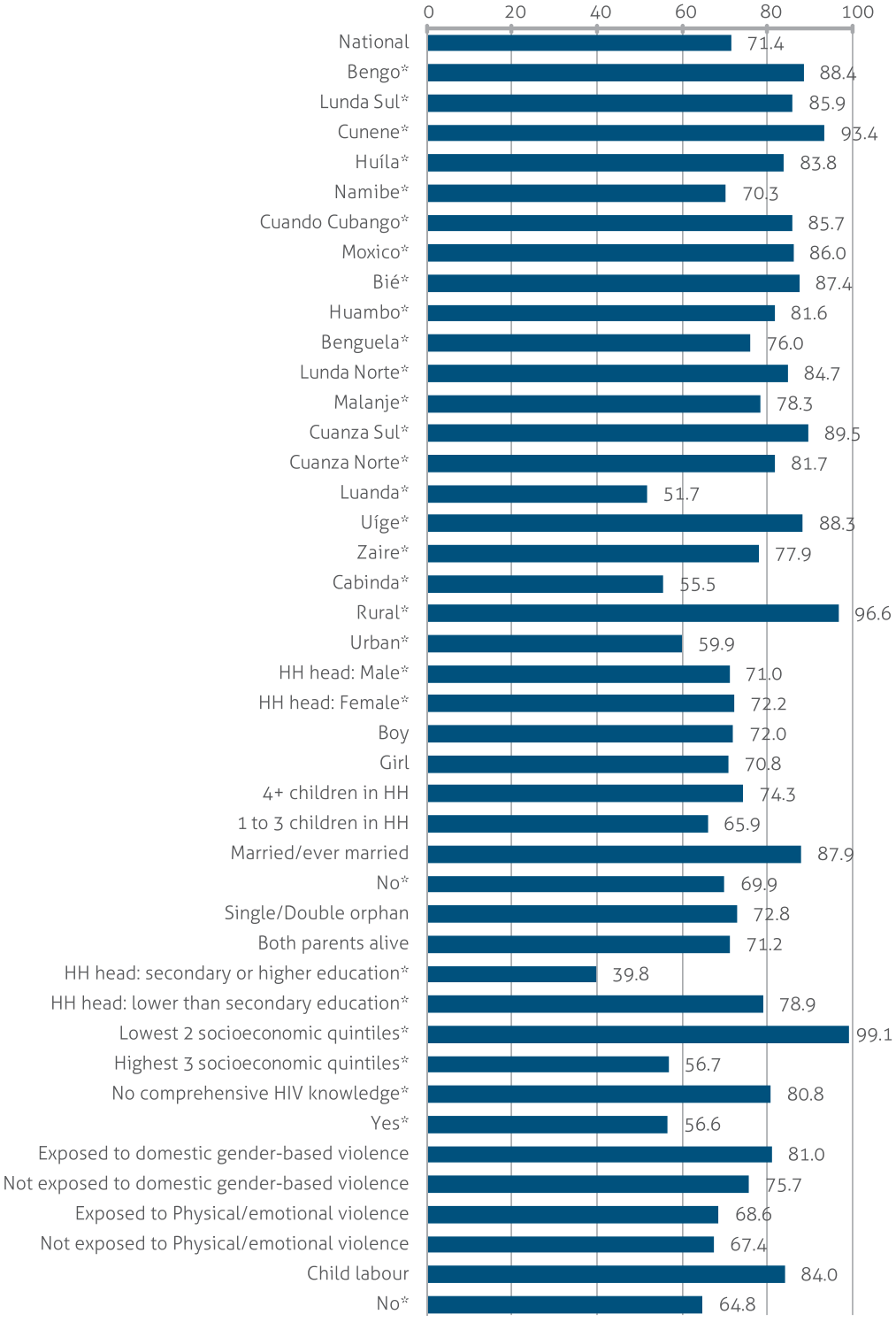
Note: * p<0.05 in Chi-squared test of independence.

Percentage of Children Aged 5-11 Years Deprived in 3-7 Dimensions with Different Profiles



Note: * p<0.05 in Chi-squared test of independence.

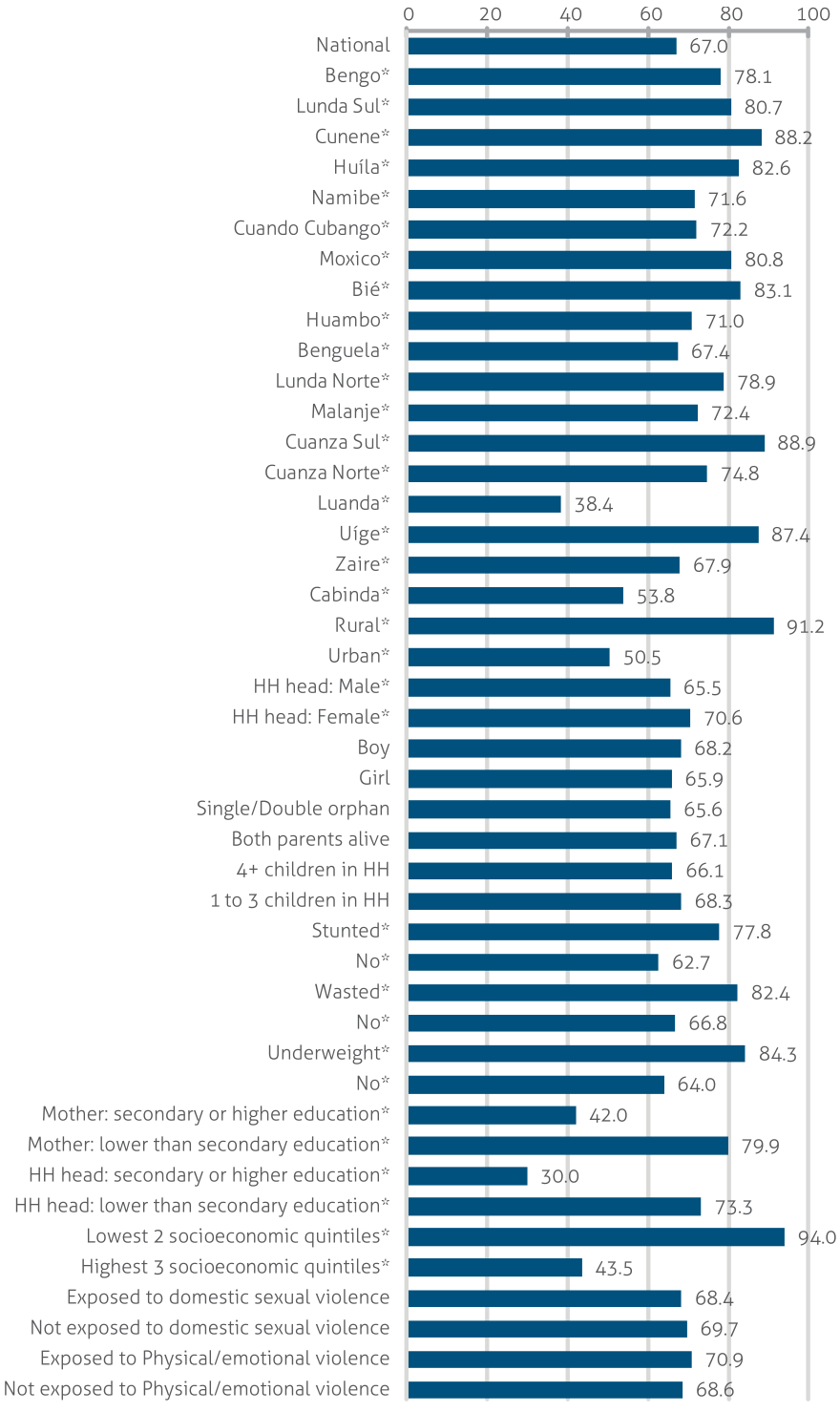
Percentage of Children Aged 12-17 Years Deprived in 3-7 Dimensions with Different Profiles



Note: * p<0.05 in Chi-squared test of independence.

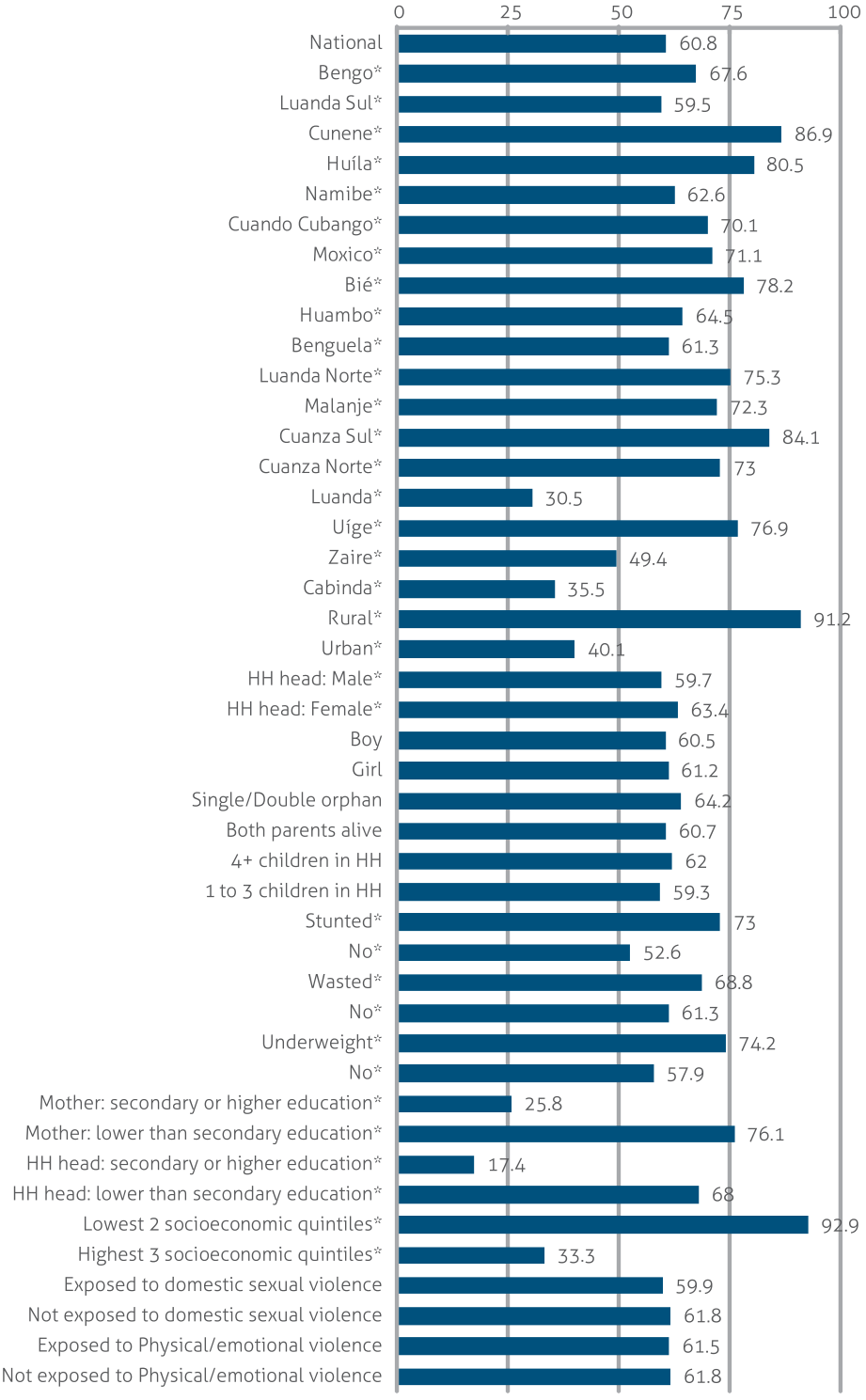
Appendix D. Multidimensional Deprivation Headcount by Age Group for All Possible Profiling Variables Using a Deprivation Threshold of k=4

Percentage of Children Aged 0-23 Months Deprived in 4-7 Dimensions with Different Profiles



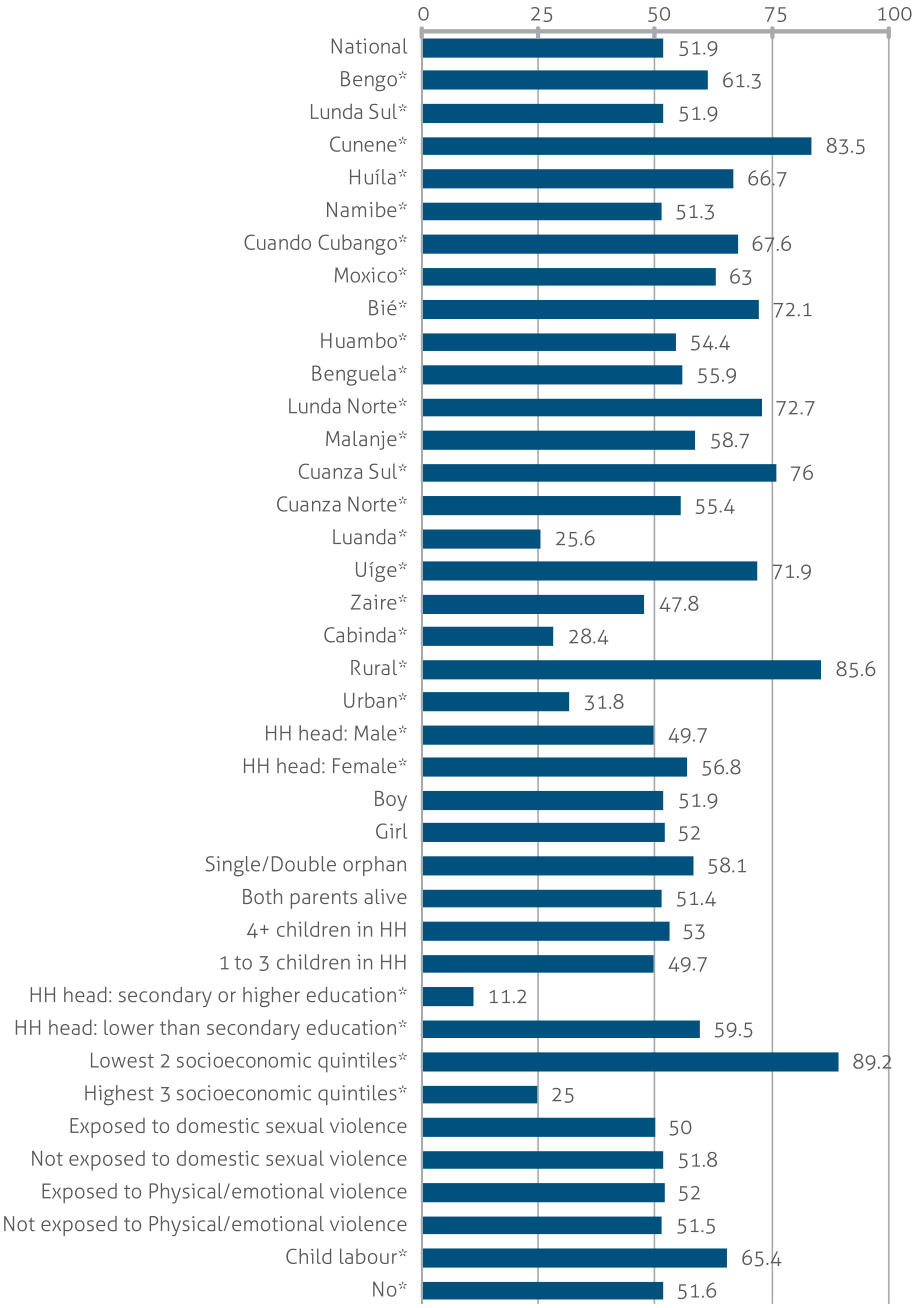
Note: * p<0.05 in Chi-squared test of independence.

Percentage of Children Aged 24-59 Months Deprived in 4-7 Dimensions with Different Profiles



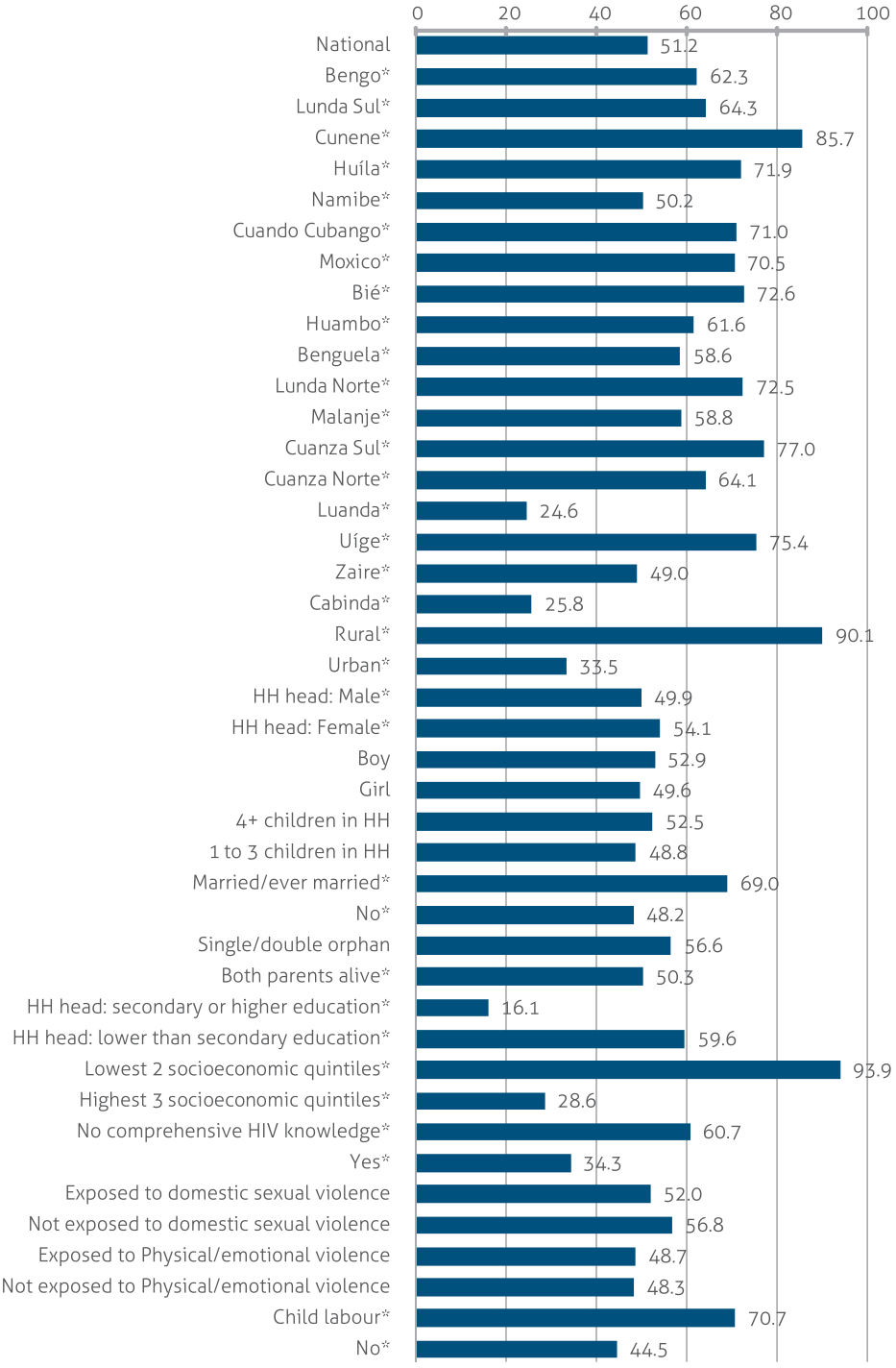
Note: * p<0.05 in Chi-squared test of independence.

Percentage of Children Aged 5-11 Years Deprived in 4-7 Dimensions with Different Profiles



Note: * p<0.05 in Chi-squared test of independence.

Percentage of Children Aged 12-17 Years Deprived in 4-7 Dimensions with Different Profiles



Note: * p<0.05 in Chi-squared test of independence.

Appendix E. Additional Technical Details in Measuring the Levels of Deprivation and Multidimensional Poverty of Children in Angola

The MODA methodology used for this analysis of measuring levels of deprivation of children in Angola requires defining child well-being in order to set the objectives of the analysis, and to select the appropriate dimensions of deprivations among children. International standards have been used as the main guiding principles for selecting the most relevant dimensions of child well-being, as described in Section 2.2.2.

Malaria Prevention has been included as a separate dimension given its relevance for child survival, especially for children under five. It requires independent policies to prevent and treat the disease, and to avoid deaths associated with this disease. The insecticide-treated mosquito net is one of the most effective instruments against malaria, and was therefore included as the indicator for malaria prevention for every child. High deprivation levels in *Malaria Prevention* across all age groups in this study were found, as is shown in the following table:

Deprivation Headcount Rate (%) of Children Deprived in Malaria Prevention Dimension by Age Group

Age Group	0-23 months	24-59 months	5-11 years	12-17 years
Malaria Prevention	73.90%	81.60%	86.10%	88.30%

The inclusion of this dimension in the analysis was considered relevant for fully understanding child well-being in Angola and the deprivation faced by children of the country. As for the methodology, the high deprivation rates in the *Malaria Prevention* dimension significantly increases the probability of children being deprived in at least one dimension. Nevertheless, the overall analysis of the situation of children in Angola is not affected by the inclusion or exclusion of this dimension. In fact, if we were to remove the *Malaria Prevention* dimension from the analysis, the calculated distribution and overlap of deprivations would not have been much affected.

Given the high deprivation rates in all age groups, this could be analogously interpreted as moving the selected deprivation threshold used for the multidimensional analysis from k=3 to k=4.. The robustness of the analysis would not be affected by removing *Malaria Prevention*, but taking that decision would reduce the richness of the overall multidimensional deprivation analysis for Angola and overlook a highly relevant component of child well-being. Most of the results of the analysis in the report have a deprivation threshold in four or more dimensions.

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