Analysis of Multi-Dimensional Child Poverty (MDCP) in Somalia using **Multiple Overlapping Deprivation Analysis (MODA).**

Final Report
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List of Acronyms

ACRWC	African Charter on the Rights and Welfare of the Child
CRC	Convention on the Rights of the Child
CSO	civil society organizations
DHS	Demographic and Health Survey
DPT	Diphtheria, pertussis, Tetanus vaccine
IEC	Information Education and Communication
MODA	Multiple Overlapping Deprivation Analysis
NDP	National Development Plan
PSU	Principal Sampling Unit
SDG	Sustainable Development Goal
SHDS	Somalia Health and Demographic Survey
SNBS	Somalia National Bureau of Statistics
SSU	Secondary Sampling Unit
UNICEF	United Nations Children Fund

Preface

Multidimensional child poverty matters for Somalia. The 2017-2019 National Development Plan (NDP) highlights critical issues children in Somalia face. First, many children are not in school despite a constitutional mandate to make education compulsory for all children aged 6-18. Furthermore, there is significantly delayed enrolment based on age appropriateness for those that enrol in school. Second, child labour rates are high (11.2% in 2016), compromising children's long-term welfare. Third, children in Somalia were increasingly affected by internal displacement because of drought. Among children, girls are disproportionately challenged. The patriarchal norms predispose women to mainly child nurturing and homemaking, constraining girls' abilities to receive an education.

This study uses the Multiple Overlapping Deprivation Analysis (MODA) and the 2020 Somalia Health and Demographic Survey (SNBS, 2020) to identify the most important risk factors for multidimensional child poverty in Somalia. The Somalia estimations are based on 8 dimensions, i.e. (i) nutrition, (ii) health, (iii) water, (iv) sanitation and hygiene, (v) housing, (vi) education, (vii) information, and (viii) violence. We performed the analysis based on two demographic categories, i.e. children aged less than 5 years and children of school-going age (5-17 years). The MODA analysis is profiled on various demographic and socio economic characteristics, including profiling based on the domain for area of residence, i.e. rural/urban/nomadic location.

The most common deprivations are sanitation and housing, followed closely by nutrition—about 85% of all infants are individually affected by sanitation, while 67% are affected by the other two dimensions. Violence (38%) and water (44%) are the dimensions with the least deprivations. Overall, infant children in Somalia are most deprived in dimensions related to the lack of infrastructure.

For older children aged 5-17 years, sanitation/hygiene remains the most frequent dimension of deprivation—at 81%. These are followed by water and education—44% and 43%, respectively. Nearly all children in nomadic settings are deprived of sanitation, while there are about twice as deprived of education compared to children from rural or urban areas. Older children are least deprived in the information dimension. This suggests that access to and use of mobile phones is widespread.

Based on the classification of multidimensional poverty as children deprived in two or more dimensions, the results show that at least 82.2% of all Somalian children are identified as being affected by multidimensional poor.

The MODA identifies deprivations are commonly experienced together and hence shows to what extent deprivation is a unique problem. For deprived young children, only a very small proportion of Somali infants is deprived in only that specified dimension. Most children deprived are deprived in more than one dimension. The largest proportion of children are deprived in 4-5 other dimensions. The most overlap occurs in the sanitation dimensions, where at least 56% of the 0–4-year-old children are deprived in three other dimensions. For nutrition, only 2.1% of children are only deprived of nutrition and none of the five other dimensions, 6% have one other deprivation besides nutrition, and 11.3% have two additional deprivations. About 19.4% of children are deprived in nutrition and up to two other dimensions. In comparison, the majority (35.3%) of children under five years) are deprived of nutrition and three or more deprivations.

For children in the 5-17 years age group, the two dimensions of deprivation that overlap the most are housing and sanitation. At least six out of ten children (66%) are deprived of one or more of these dimensions, and at least 13.1% are deprived in 4-5 other dimensions.

The domain of the area of residence is one of the most critical drivers of multiple

deprivations. For infants, being resident in a rural area reduces the odds reduces by 9.3 (1/0.11). However, for older children, being resident in rural areas compared to nomadic settings minimises the likelihood of deprivation by 66%.

In conclusion, multidimensional deprivation is widespread in Somalia; at least eight out of 10 children in Somalia are multidimensional deprived. We find a significant overlap in deprivations, which suggests that integrated approaches are needed to address childhood deprivation adequately. The above findings have implications for how government and development partners consider addressing childhood deprivation and the nature of interventions. Specifically, efforts should address several shortfalls simultaneously, rather than focusing on particular dimensions. The children facing the highest deprivation rates are in the nomadic setting—characterised by routine movements in search of water and pastures. Addressing the water challenges would eliminate the need to move by nomadic communities, given that movement is driven by the requirements for pasture and water for domestic use. Addressing the challenges of access to water can indirectly address nutrition, since meal frequencies are lower, and children are hungry due to water scarcity.

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Acknowledgments

It is only since 2020 that the Somalia National Bureau of Statistics Portfolio of the Federal Government of Somalia is explicitly housed in one specific MDA, The Somalia National Bureau of Statistics. Before 2020, was under the Ministry of planning, Investment and Economic Development portfolio. The journey that began the establishment of SNBS then has enabled the Statistics Bureau to lay the foundations of Policies, Sector Strategies, Surveys and Analyses that include this Multiple Overlapping Deprivation Analysis.

As the country and its institutions work towards achieving poverty reduction, we have seen a great number of initiatives including, plans, strategies and policies that are designed to recognize the most significant risk factors for multidimensional child poverty in Somalia, however all these initiatives at times lack a direct method of child poverty measurement which analyses deprivations experienced by the child in the country. To achieve such a coordinated and harmonized multidimensional deprivation analysis report, the Bureau has to prove and display that it has the capacity to produce direct reports that are based on accurate and reliable data.

This Multiple Overlapping Deprivation report is an example of a knowledge based analysis which seeks to inform different stakeholders on the state of the child poverty Deprivation Analysis and extrapolates how key poverty indicators are expected to perform in the coming years. What makes it unique is the fact that this analysis was fully developed in-house. The challenge is to sustainably produce this and other types of sector based analysis consistently.

I would like to thank our Social Statistics Directorate Director Mr. Said Abdullahi Abdi, without whose able guidance and support this analysis could not have been completed, and the entire team of the Somalia National Bureau of Statistics, particularly PSSD technical team; Abdirahman Mohamed Sheikh Abdi, Hamida Sheel, Abdulrazak Abdullahi Karie, Abdirahman Omar Ali, Mohamed Ali Ibar, Mohamed Ali Dhaqane, Mohamed Yarani Hassan, Abdullahi Ali Elmi and Abdifatah Osman Mohamed Hassan for their outstanding work. We would also like to thank Ibrahim Kasirye, an individual specialist with experience in this exercise from the Economic Policy Research Centre in Uganda and Abdifatah Osman Mohamed.

We would also like to show our profound appreciation to all parties that contributed significantly toward the analysis. This includes our colleagues from the Ministry of Education and Higher Education (MoE), and the Ministry of Labour and Social Affairs (MOLSA), Ministry of Planning, Investment and Economic Development, the Somali National Bureau of Statistics and our international partners particularly UNICEF Somalia for their financial support and technical assistance, especially Dr. Chrystelle Tema Tsafack and Ahmed Hassan Ismail for their invaluable contributions to this work in providing the directorate through its social Sector statistical portfolio to embark on a few key reports, plans and policies as it relates to the wider Government agenda. As customary we publish all our work on our website www.snbs.gov.so and other Government websites so be sure to visit our website for more information.

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1. Introduction

Somalia has one of the youngest populations in Africa. At least 47% of the Somalian population is aged is less than 15 years compared to 40% for the African continent (Population Reference Bureau, 2021).[1] This translates to about 8.8 million children in the country. At the same time, 60.5% of the Somali population are children aged less than 18 years. Infants aged less than 5 years also account for a significant share of the population—19.4% or 3.2 million young children (SHDS, 2020). This large population of children demands services such as schooling and health for their sustenance. Furthermore, due to a history of civil war, children are among the worst affected vulnerable groups in the country. Children suffer most from the ongoing civil war and associated displacement (Federal Government of Somalia, 2017).[2] Children are also exposed to internal displacement due to drought.[3] As such, children in Somalia are not leaving in the optimal condition.

Multidimensional child poverty matters for Somalia. The 2017-2019 National Development Plan (NDP) highlights some critical issues currently faced by children in Somalia. First, a large population of children is not in school despite a constitutional mandate to make education compulsory for all children aged 6-18. Furthermore, for those that manage to enrol in school, there is significantly delayed enrolment based on age appropriateness. Relatedly, the patriarchal norms predispose women to mainly child nurturing and homemaking, constraining girls' abilities to receive an education. Second, child labour rates are high (11.2% in 2016), which compromises children's long-term welfare. Nonetheless, despite the recognition of some above challenges facing children, there has been no explicit evidence in the NDP to show the extent of wider childhood deprivation in Somalia—especially by location of residence and regions. The recent availability of the 2020 Somalia Health and Demographic Survey (SHDS) data offers an opportunity to initiate the process of showing the situation of children in Somalia, as a basis for chatting a way forward regarding improving childhood wellbeing.

Child poverty analysis also allows us to show how far Somalia wants to move its children in relation to peers in other African countries. This is partly guided by the fact that in 2015, Somalia ratified the Convention on the Rights of the Child (CRC); hence, the country is keenly interested in the situation of its children. By adopting the CRC, the country committed to improving the condition of children, which is why UNICEF supports this initiative. The ratification also partly guides some dimensions considered in this report.

1 Population Reference Bureau, (2022) World Population Data-sheet.
2 Federal Government of Somalia (2017) National Development Plan 2017-2019 Towards Recovery, Democracy and Prosperity 2017 – 2019.
3 At least 17% of the Somalian population was internally displaced by the end of 2020 (UNHCR, 2021). Furthermore, estimates show that internally displaced households with children are about 20% more likely to be poor than non-IDP households (Hanmer et al, 2021).

This study uses the Multiple Overlapping Deprivation Analysis (MODA) to assess Somalia's multidimensional childhood deprivation level. MODA is a tool that provides a systematic procedure to identify deprived children, especially recurring coincidences of deprivations (overlap). MODA has several advantages over traditional approaches to measuring child poverty, including considering a child's lifecycle and acknowledging that children's needs differ depending on age. In addition, it can provide details on the profiles of the children experiencing several forms and combinations of deprivations. Furthermore, MODA enhances policy efficiency by supporting integrated interventions to reduce multiple deprivations simultaneously.

There have been other assessments of child poverty in Somalia. For example, the 2021 vulnerability assessment of Somalian households during the COVID-19 pandemic showed that some children had lost access to school feeding programmes (UNICEF Somalia, 2021).[4] During the COVID-19 pandemic, access to schooling significantly declined. Indeed, less than 3% of children were reached through distance/home-based learning one month after the lockdown started before rising to 12% by May 2020 and 17.4% by August 2020 (UNICEF Somalia, 2020).[5] In addition, households recorded a drastic reduction in access to health services during the pandemic of up to 41.6%. There was also an increased burden on unpaid care work for girls and women as the pandemic forced households to stay home. Furthermore, an earlier assessment by the World Bank showed that children in Somalia were increasingly affected by internal displacement because of drought (World Bank, 2019).[6] The same report showed that children and households that do not receive remittances are disproportionately poor. Furthermore, there are gender and regional disparities in access to education.

Against the above background, in 2022, UNICEF commissioned an analysis of Multi-Dimensional Child Poverty (MDCP) in Somalia using Multiple Overlapping Deprivation Analysis (MODA) based on Somali Health and Demographic Survey.7 This report details the MODA findings.

The remainder of the study is organized as follows. Section 2 describes the research methods and datasets sources used in the analysis. The most common forms of deprivation are analyzed in section 3. The geographical variation in deprivation is analyzed in section 4. Estimates of the extent of multidimensional deprivations are presented in section 5. Section 6 offers the estimates for the overlapping deprivations, while section 7 examines the determinants of multidimensional deprivation. Section 8 provides the conclusions and implications of the analysis for Somalia.

1.1 Limitations of the study

A significant limitation of the SHDS is the lack of information on displacement—which has been captured in earlier studies as a primary driver of deprivation—especially a significant loss of household assets (World Bank, 2019). The extent of internal displacement in Somalia has increased over time—rising from 9% in 2014 to 17% by the end of 2020 (UNHCR, 2021)—because of drought and conflict.[8] Anecdotal evidence suggests that the presence of IDPs in urban areas partly contributes to the poor livelihood outcomes in big cities like Mogadishu. Indeed, the NDP mentions IDPs are more likely to be squatters in dwellings owned by others. Secondly, no information is collected on water quality, which is critical in Somalia. On the other hand, access to quality water is a critical factor for Somalia given the relatively large reliance on rivers and rainwater for water and the limited infrastructure available to dispose off waste water. Based on the 2020 SHDS, about 20% of the households acquire water from open sources. Finally, the 2020 SHDS does not capture information on remittances, which is a major source of livelihood in the country.

> Child poverty analysis also allows us to show how far Somalia wants to move its children in relation to peers in other African countries.

4 UNICEF (2021) Vulnerability Assessment in Somalia (Horn Population Research and Development, 2021)
5 UNICEF Somalia (2020) COVID-19 Preparedness and Response: Progress Update March-August 2020.
6 World Bank (2019) Somali Poverty and Vulnerability Assessment: Findings from Wave 2 of the Somali High Frequency Survey.
7 Somalia National Bureau of Statistics (2020), Federal Government of Somalia. The Somali Health and Demographic Survey 2020.
8 United Nations High Commission for Refugees [UNHCR] 2021 Global Trends in Forced Displacement 2020.

2. Methods

The present study uses information collected from the 2020 Somalia Health and Demographic Survey (SNBS, 2020), a nationally representative survey conducted by the SNBS. The survey was based on a three-stage stratified cluster sample design. In the first stage, Enumeration Areas (EAs) based on the 1975 housing census were the Principal Sampling Units (PSU), and 538 EAs were selected. The second stratum based on nomadic, rural, and urban in each region was the Secondary Sampling Units (SSU), with 47 strata used in the survey. Finally, about 30 households were selected from each PSU in the third stage. Overall, 16,360 households were selected for interview; at least 15,826 households were eventually interviewed yielding a response rate of 99.7%. The sample for the SHDS was designed to provide estimates of key indicators for the country as a whole for each of the 18 pre-war geographical regions.[9] The SHDS used customised standard Demographic and Health Survey (DHS) questionnaires designed to provide detailed information on the situation of children and women in the country.

2.1 Definitions of child poverty and deprivations

Children experience poverty in different ways that ultimately affect their development. To capture the different facets through which children experience poverty and vulnerability, we adopt UNICEF's Multiple Overlapping Deprivation Analysis (MODA) approach (De Neubourg, et al., 2012)[10] which is inspired by the Alkire and Foster method used to measure Multidimensional Poverty (Alkire & Foster, 2011).[11] The MODA approach builds on initiatives to measure child poverty such as the Bristol indicators approach (UNICEF, 2007; Gordon et al., 2003)[12][13]. These approaches consider children's needs at different life cycle stages (i.e. early childhood, primary childhood, and adolescence).[14] Overall, the MODA approach is guided by the Convention on the Rights of the Child (CRC) and the African Charter on

9 The regions of Lower Shabelle and Middle Juba were completely excluded from the survey due to security concerns. In addition, the Bay region only covered urban areas due to similar security reasons. Apart from regions such as Bay excluding non-urban areas, there was oversampling of urban areas—especially in the Banadir sub region.

10 De Neubourg, C., J. Chai, M. de Milliano, I. Plavgo, Z. Wei (2012). 'Cross-country MODA Study: Multiple Overlapping Deprivation Analysis (MODA) - Technical note', Working Paper 2012-05.

11 Alkire, S. & Foster, J., 2011. Counting and multidimensional poverty measurement. Journal of public economics, 95(7), pp. 476-487.

12 Gordon, D., Nandy, S., Pantazis, C., Pemberton, S., Townsend, P. (2003). The Distribution of Child Poverty in the Developing World, University of Bristol.

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

14 Whereas the Bristol approach only considers 7 types of deprivations (i.e. relating to: nutrition, health, water, sanitation, housing, education and information), the MODA approach considers an additional dimension relating to a child's protection from violence

Box 1 The classification of child poverty deprivations

Category of deprivation	Indicator
Nutrition/food deprivation (CRC Article 24 and ACRWC Article 14)	Children whose nutritional status (weights for their age) are either more than 2 standard deviations below the median of the international reference population, i.e., anthropometric failure (deprived) and (ii) infant and young child feeding, i.e. either children aged 0-5 months not breastfed or children aged 6-59 months living in a household with insufficient meal frequency.
Water Deprivation (CRC Article 24 and ACRWC Article 14)	Children who only have access to unimproved water sources (e.g., open wells/ springs or surface water) for drinking or who live in households where the nearest water source is over 30 minutes away (indicators for deprivation of water quantity).
Deprivation of Sanitation and Hygiene Facilities (CRC Article 24 and ACRWC Article 14)	Children in households that use unimproved sanitation facilities (e.g., have no access to a toilet near their dwelling, including communal toilets or latrines; use pour flush latrines, open pit latrines and buckets, etc.) or with an improved sanitation source that is shared with other households, or do not have access to a hand washing facility (household has no observed water and soap at handwashing facility).
Health Deprivation (CRC Article 24 and ACRWC Article 14)	Children aged 1-4 years who have not received all DPT vaccinations, or (ii) skilled birth attendance: if no or an unskilled birth attendant assisted with the birth of the last child.
Housing Deprivation (CRC Article 27)	Children living in dwellings with over three people per room (overcrowding)[1] or (ii) have no access to electricity.
Education Deprivation (CRC Article 28 and ACRWC Article 11)	Children of compulsory school age but not attending school or beyond primary school age with no or incomplete primary education.
Information Deprivation (CRC Article 13 and 17) –	Children who live in households with no radio, television, mobile phone, or computer.
Protection (CRC Art. 19, 37)	Protection from violence: children resident in a household where a woman states to have experienced domestic violence

Source: Adapted from De Neubourg, et al. (2012) and Batana et al. (2014). [2]

1 The overcrowding indicator requires an age-group population as such persons aged less than 5 years are given an adult equivalent of 0.5.

2 Batana, Y., John Cockburn, I. Kasirye et al., (2014) Situation Analysis of Child Poverty and Deprivations in Uganda" PEP Working Paper.

the Rights and Welfare of the Child (ACRWC). The Somalia estimations are based on 8 dimensions i.e (i) nutrition, (ii) health, (iii) water, (iv) sanitation and hygiene, (v) housing, (vi) education, (vii) information, and (viii) violence.[15] The 8 dimensions were arrived at after extensive consultations with experts from Somalia National Bureau of Statistics (SNBS), Ministry of Planning Investments and Economic Development (MoPIED), Ministry of Labour and Social Affairs (MOLSA), Federal Ministry of Health (FMoH) and Ministry of Education (MoE). Box 1 below describes the indicators used for each of the above listed dimensions of deprivations.Source: Adapted from De Neubourg, et al. (2012) and Batana et al. (2014). [16]

2.2 Estimating MODA

When measuring multidimensional child poverty, MODA first aggregates indicators into dimensions and counts the number of dimensions each child is deprived of. The indicators are aggregated into dimensions using the union approach. A child is deprived in the specific indicator if their status is below the threshold. A child is considered deprived in a dimension if they are deprived of any indicator within it. Each indicator is deemed equally important for a child in that dimension. Using the same threshold adopted in other N-MODA studies, we defined a child as multidimensionally poor when simultaneously deprived in two or more dimensions of well-being.

The MODA approach constitutes 3 measures i.e. (a) deprivation count; (b) deprivation overlap; (c) multidimensional child deprivation headcount. The analysis was performed at the (a) national/country level, (b) based on the domain for area of residence, i.e. rural/urban/nomadic location and (c) at the regional level. The analysis was performed based on two demographic categories, i.e. children aged less

15 The choice of dimensions was guided by consultations held with technical teams from the SNBS, MoPIED and UNICEF, during March-May 2022.

16 Batana, Y., John Cockburn, I. Kasirye et al., (2014) Situation Analysis of Child Poverty and Deprivations in Uganda" PEP Working Paper.

Children experience poverty in different ways that ultimately affect their development. To capture the different facets through which children experience poverty and vulnerability, we adopt UNICEF's Multiple Overlapping Deprivation Analysis (MODA) approach

than 5 years and children of school-going age (5-17 years). This choice of demographic disaggregation is guided by the fact that some indicators are age-group specific, such as nutrition and health (available for only children aged less than 5 years). In comparison, education and information are only available for children aged 5-17 years.

The selection of indicators within each of the selected dimensions on child welfare was guided by: (i) data availability, (ii) the need for comparability with international conventions and frameworks, as illustrated in Table 1, and (iii) consultations with experts from Somalia. To contextualise the MODA methodology to the situation of children in Somalia, the SNBS, with assistance from UNICEF, hosted a national consultation workshop with key stakeholders. The workshop was geared toward reaching a consensus on two key issues. First, to decide on age groups that define typical stages of child development in Somalia. Second, identify relevant deprivation dimensions in each age group and specify indicator(s) for each dimension.[17] Participants agreed to keep only two age groups and exclude an additional category earlier proposed (adolescents).

The MODA analysis also provides the profiles of the deprived children and the families they live in. The profiles show the differences between the better and the worse off children and help identify which groups of children suffer from inequitable deprivations. The following proofing variables are used: (i) gender of the household head, (ii) maternal education, (iii) household wealth quintiles, (iv) household size, (v) gender of the child, and (vi) geographical residence.

17 Participants at the consultative workshop were from the following institutionsSomalia National Bureau of Statistics (SNBS), Ministry of Planning Investments and Economic Development (MoPIED), Ministry of Labour and Social Affairs (MOLSA), Federal Ministry of Health (FMoH), Ministry of Education (MoE) and UNICEF.

3. Most Common form of Deprivations

3.1 Profile of Somali children

Table 1 shows the profile of children analysed from the 2020 SHDS. The average age of the children in the sample is about 10 years, and the share of males is slightly above 50%. The average household size is 7 with children in urban areas living in significantly larger households than those in nomadic and rural areas (by about one person more). Nearly all children in nomadic settings live with their biological parents; on the other hand, in rural and urban areas, about 10% of the children are in the hands of caretakers. Three out of every ten children are residents in a household headed by a female head.[18] Concerning mother education attainment, the majority of mothers have never been to school. As expected, the rate of no education is slightly higher among children in nomadic settings (at 75.6%) compared to other areas (about 62%). For mothers who have been to school, the most frequently cited education level is primary schooling at 24.3%, 39.2%, and 32.0% for nomadic, rural, and urban areas, respectively. Finally, regarding household wealth status, most children from the nomadic setting are in the poorest quintile of asset distribution (91.6%) compared to only 33.2% for rural and 3.2% for urban areas.[19] Overall, the table shows that Somalian children face several vulnerabilities.

3.2 Uni-dimensional deprivation: Children aged 0-4 years

The most common deprivations are sanitation and housing followed closely by nutrition—about 85% of all infants are individually affected by sanitation while 67% are affected by the other two dimensions (Figure 1). Toilets and hand washing drive sanitation and hygiene, while inadequate infant and young child feeding drive nutrition. Housing is driven primarily by the lack of electricity. The dimension with the least deprivations are violence (38%) and water (44%).

By residence, children in nomadic settings are most deprived in all dimensions compared to either rural or urban areas except for violence (where there are least deprived). Higher deprivation in nomadic settings is expected given the limited access to infrastructure and the temporary nature of the residence (which impacts on the housing, sanitation, and water dimensions). The lower exposure to violence in nomadic residences could be explained by the absence of spouses as shown in the previous

18 Previous assessments show that female headed households face a precarious situation. For example, they are significantly less likely to participate in the labour market and also receive lower remittances.

19 Based on the wealth index, households in the nomadic setting are most deprived. However, this may also be due to the way the wealth index for households is calculated—as a composite index of dwelling and household characteristics. Nomadic households may have other valuable assets—notably livestock—assets not traditionally included in a typical asset index.

Table 1: Distribution of children by socio-economic characteristics

	National	Area		
		Nomadic	Rural	Urban
Average age of children (years)	9.6	9.2	9.2	9.7
Share of children that is male (%)	50.3	50.2	50.2	50.6
Household size (number)	6.9	6.4	6	7.4
Child resides with a Care Taker (%)	10.3	1.6	10.2	11.5
Female headed household (%)	30.4	26.4	29.9	31.2
Mothers Education (%)				
No Education	63.3	75.6	62.2	61.8
Primary	32.4	24.3	39.2	32.0
Secondary	3.2	10.0	1.2	4.6
Higher	1.0	10.0	0.3	1.6
Household wealth quintile (%)				
Lowest	20.5	91.6	33.2	3.2
Second	20.3	3.9	30.6	18.8
Middle	21.7	2.2	21.8	24.9
Fourth	19.2	1.8	9.5	26.1
Highest	18.4	0.5	4.9	26.9
Regions (%)				
Awdal	3.6	5.4	6.2	2.1
Woqooyi Galbeed	8.1	5.3	6.5	9.4
Togdheer	5.2	10.4	3.8	4.8
Sool	3.6	12.0	4.8	1.7
Sanaag	4.2	16.6	4.7	1.8
Bari	5.6	5.9	6.7	5.1
Nugaal	2.8	3.8	4.2	2.0
Mudug	4.7	20.0	2.1	3.2
Galgaduud	5.8	8.0	9.7	3.6
Hiraan	5.1	4.1	10.6	2.9
Middle Shabelle	5.2	2.2	11.7	2.9
Banadir	25.3	-	0.1	40.8
Bay	5.7	-	-	9.2
Bakool	3.8	2.4	8.9	1.8
Gedo	6.6	2.9	13.4	4.2
Lower Juba	4.9	1.2	6.8	4.6

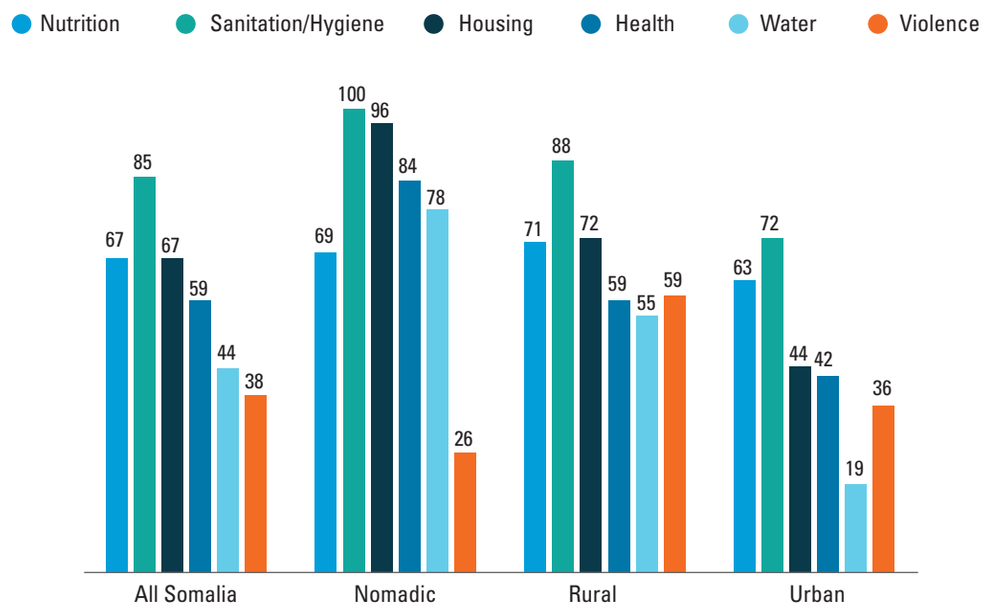
Source: MODA 2022

analysis of displacement.[20] Indeed, there are other examples based on the COVID-19 pandemic that shows that increased proximity to spouses is associated with more violence occurrence. For example, in 2020, UNICEF reported that intimate partner violence had increased in Somalia as most men were at home due to redundancies associated with the lockdown, making women susceptible to violence.[21] However, there is no information from the dataset to support the hypothesis of different living

20 Previous analysis shows that men in Somalia affected by internal displacement may opt to return to their places of origin without children and women, until the security situation is ascertained (World Bank, 2014). Furthermore, this is not unique to Somalia; DHS surveys from other countries show that the experience of violence is lower in regions characterised by pastoralism. For example, the 2014 Kenya DHS shows only 15% of women from the predominantly pastoralist-based North Eastern Kenya experience violence compared to a national average of 44% (KNBS et al., 2015).

21 UNICEF (2020) Somalia COVID-19 Situation Report No. 6

Figure 1: Dimensions for children 0-4 years



arrangements. Overall, infant children in Somalia are most deprived in dimensions related to the lack of infrastructure.

For some dimensions, notably nutrition, the deprivations rates are generally high regardless of residence. Specifically, 69%, 71%, and 63% of children aged 0-4 years are deprived in nutrition in nomadic, rural, and urban areas respectively. This indicates that most Somali households perform poorly with respect to infant and young child feeding. The above results suggest that even relatively well-to-do urban households are unable to provide the minimum requirements for feeding.

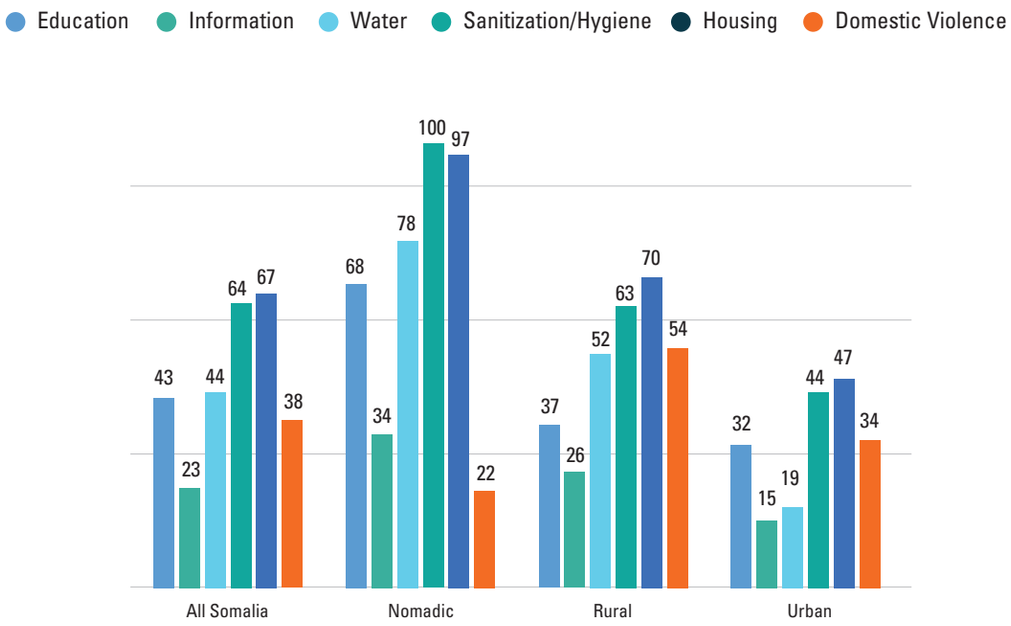
As earlier noted, children in Somalia are most deprived in the sanitation dimension and this can be partly attributed to widespread open defecation. Specifically, at least 21% of all households report having no toilet facility. In nomadic settings, 94% of households rely on open defecation. As such, nearly all children from nomadic setting are deprived in sanitation/hygiene. This is because most households in this particular setting lack toilets—at least 94% of nomadic households indicate having no toilet.[22] Similarly, nearly all children in this particular setting are deprived of housing due to lack of access to electricity. Infants in the nomadic domain are significantly less exposed to domestic violence compared to rural (59%) or urban (36%) counterparts. This may be explained by the mobility of household heads or men.

In a nomadic setting, a considerable proportion of children are deprived of health (84%) compared to either rural (59%) or urban (42%) areas. This points to a severe lack of health facilities in nomadic settings, which has secondary effects.[23] In particular, the lack of health facilities compromises the nutrition status of children in nomadic settings. The children in urban and rural areas receive nutrition information and awareness from such facilities, which are non-existent in nomadic settings. Hence there is no infrastructure to raise awareness of the requirement for proper nutrition in nomadic settings.

22 That is, either have no facility, or use bush/field.

23 In such an environment of health facilities, households in the nomadic domain can only access health services at the nearest rural settlements.

Figure 2: Uni-dimensional deprivation for Children aged 5-17 years



3.3 Uni-dimensional deprivation: Children 5-17 years

As was the case for children aged 0-4 years, for older children aged 5-17 years, housing and sanitation/hygiene remain the most frequent forms of deprivation—at 67% and 64% respectively (Figure 2). These are followed by water and education—44% and 43% respectively. Nearly all children in nomadic settings are deprived of sanitation while there are about twice as deprived of education compared to children from rural or urban areas. There is also minimal divergence in education deprivation in rural compared to urban areas (37% vs 32%). As expected, urban children are least deprived in the water dimension—19% compared to 52% for rural areas. Children are least deprived in the information dimension given the proliferation and use of mobile phones. Although children in nomadic settings have the highest rates of deprivation in information, the divergence from other areas is relatively small i.e. 34% in nomadic, 26% in rural and 19% in urban areas. This suggests that access to and use of mobile phones is widespread. The availability of these facilities can be useful in programming—especially the dissemination of IEC messages.

3.4 Which indicators are driving the uni-dimensional deprivations?

Table 2 shows the extent of deprivation based on the individual indicator—all dimensions are composed of more than one indicator—apart from the information and violence dimensions. For the nutrition dimension, the key driver of deprivation is infant child feeding—where 71% of all children aged 0-4 years do not meet the minimum recommended feeding frequency. Furthermore, the extent of deprivation in infant child feeding is similar for nomadic and rural areas at 73%. On the other hand, the deprivation in the second indicator for the nutrition dimension i.e. wasting is about the same for rural and urban areas—at 18%.

For the health dimension, the largest driver of deprivation is the lack of skilled birth attendance at 54.6% nationally. As expected, children from the nomadic setting are most deprived in skilled birth attendance at 84%, followed by rural areas—53.9% and the least in urban areas at 35%. On the contrary, children in nomadic settings are least deprived in DPT immunization at 18.5% whereas the vaccination deprivation rates in rural and urban areas are nearly similar at about 25%.

For the health dimension, the largest driver of deprivation is the lack of skilled birth attendance at 54.6% nationally

For education, the deprivation in primary school attainment is more than twice that for the indicator for compulsory school attendance (72.5% vs 33.2%). By residence, the largest divergence in the two education indicators is registered in rural areas—where deprivation in primary school attainment is more than 3 times that of compulsory school attendance. Also worth noting that 61% of all children aged 5-17 years in nomadic settings are deprived in compulsory school attendance while 96% are deprived in primary school attainment. This suggests that majority of children in nomadic settings missed out on education—which can be attributed to the limited availability of school and consequently longer distances required to traverse to school in such an environment.

With respect to water deprivation, children are about twice as deprived of access to an improved water source than the distance to a water source. The lack of access to an improved water source is highest in nomadic settings (63%) followed by rural areas (50%). On the other hand, distance to a water source is more of a binding constraint for children in nomadic settings only—where about 45% of children are deprived based on this particular indicator compared to about 17% in rural areas and 6% in urban areas.

Concerning sanitation and hygiene, children are most deprived in access to an improved sanitation source than in hand washing—72% vs. 50.4% respectively. The worst deprivations for this dimension occur among children in nomadic settings, for children aged 0-4 years, the extent of deprivation in access to sanitation and handwashing is 99.9% and vs 87.8% respectively.

Regarding the housing dimension, the highest deprivation is for electricity—54% compared to overcrowding 31%. By residence, children are deprived of electricity at rates of 91%, 65%, and 26% in nomadic, rural and urban settings respectively. It is worth pointing out that children in rural areas are least deprived in overcrowding—at about 9.7 %, compared to 26% for urban and 64% in nomadic setting. This may suggest that it easier to set up additional sleeping rooms in rural areas compared to any other setting (in urban areas—both costs and space may not permit setting up additional sleeping rooms as the family expands).

Table 2: Deprivation headcount rate by indicator, age-group and location (%)

Dimension	Indicator	All Somalia	Nomadic		Rural		Urban	
			0 to 4 years	5 to 17 years	0 to 4 years	5 to 17 years	0 to 4 years	5 to 17 years
Nutrition		**66.9**	**68.8**		**70.9**		**62.5**	
	Infant and young child feeding	71.0	73.7		73.4		67.3	
	Wasting (weight for height)	20.3	25.5		18.5		18.2	
Health		**58.9**	**84.4**		**58.5**		**41.9**	
	DPT immunisation (1-4 years)	23.2	18.2		24.5		25.3	
	Skilled birth attendance	54.6	84.0		53.9		35.1	
Education		**43.0**		**68.4**		**36.7**		**31.2**
	Compulsory school attendance	33.2		60.7		25.3		21.5
	Primary school attainment	75.5		96.6		77.2		64.0
Information								
	Information devices	23.2		34.3		25.8		15.0
Water		**43.9**	**77.9**	**77.9**	**55.2**	**52.1**	**19.2**	**18.5**
	Drinking water source	37.5	62.8	63.5	49.7	46.7	16.2	16.3
	Distance to water source	19.7	44.9	45.5	16.8	18.3	5.9	5.5
Sanitation and Hygeine		**81.7**	**99.9**	**99.9**	**88.4**	**84.2**	**71.7**	**68.6**
	Hand washing	50.4	87.8	85.5	44.8	42.9	35.2	33.4
	Toilet type	72.0	99.9	99.7	79.5	73.7	58.1	53.4
Housing		**66.6**	**96.4**	**97.2**	**71.6**	**69.7**	**44.1**	**46.7**
	Overcrowding	31.0	46.7	64.1	6.5	9.7	20.3	26.3
	Electricity	54.7	91.7	91.1	68.6	64.6	30.4	26.4
Protection from Violence								
	Domestic violence	**38.0**	25.6	21.9	59.3	53.9	35.7	33.5

4. Uni-dimensional deprivations differ by geographic regions

Figure 3 shows how indicators of nutrition deprivation varies by geographical regions. The sub-regions with the highest rates for the indicator for wasting are not necessarily those with highest rates of deprivation for infant and child feeding—captured by the number of times a child ate solid food groups in the past 24 hours (see Box 1 for details of how the indicator is measured). The most deprived sub regions with respect to infant feeding are Hiraan (85%), Galgaduud (81%) and Gedo (81%). On the other hand, the regions with the highest nutrition wasting rates are Nugal (32%), followed by Gedo (29%) and lower Juba (25%). Generally, Figure 3 shows that the failure to meet the minimum frequency of recommended food groups is generally widespread across regions. Civic awareness could explain some results for nutrition deprivation. The lack of awareness regarding appropriate nutrition within the community could explain the relatively large rates of infant and child feeding deprivations.

Figure 4 shows the health indicators deprivations by regions. Gedo is the most deprived with respect to skilled birth attendance at 76% followed by Sool (71%) and Hiraan (about 70%). On the other hand, Woqooyi Galbeed is most deprived regarding DPT immunization at 41% followed by Togdheer at 39.5% and Nugaal at 28.6%.

Bakool and Gedo are the worst deprived regions with respect to primary school attainment (Figure 5). In these two regions, at least 88% of the children aged 5-17 years lack appropriate primary school attainment. Furthermore the Sool region has the highest deprivation in school attendance at 44% followed by Bari (39%) and Togdheer (38%). Conflict experience may partly explain the higher education deprivation in the Sool region. Indeed, the region is at the centre of disputed areas—with several warring states laying claim to the region's land. As such, it is not as stable compared to other regions, which predisposes the region to limited development activities. On the other hand, the relatively poor education indicators in Togdheer region can be partly attributed to a large presence of a nomadic population in this particular region.[24] The Hiraan region has low education outcomes also because of insecurity—notably the presence of the militant group—Al Shabaab. A low presence of public schools also characterizes the region, whereas most households cannot afford to pay school fees in private schools. Furthermore, the chart shows that the distribution of lack of school attendance is fairly similar across regions—at least 11 of the 16 regions covered by the survey do have rates of school non-attendance as high as at least 30%.

There is a wide variation in access to an improved water source by region—ranging from 1.3% in Banadir to 75.5% in Bakool (Figure 6). This variation in access to an improved water source partly reflects

24 From the 2020 SHDS, at least 50.5% of the sampled population in Togdheer are in the nomadic setting, 26.3% in rural areas and 23.2% in urban areas.

the level of urbanization in the different regions. Although fairly urbanised regions also have shorter distances to water sources, the regions worst deprived in distance to water sources differ markedly from those deprived due to using unimproved water sources. Specifically, Togdheer, Awdal, and Sanaag have the longest distances to water sources—with at least 35%, 32% and 31% respectively of all children in these particular regions deprived due to distance. The distance deprivation may also reflect the dominant source of water in the particular region; for example, in Sanaag, tanker/truck is the dominant source while in Awdal it is unprotected wells or springs. However, the above results should be interpreted in the context of potential water contamination threats. In crowded areas, shorter distances to water sources may not signify high quality, given the prospects of water contamination while using septic tanks and pit latrines.

The regions with the highest rates of lack of access to an improved sanitation source also have the highest rates of deprivation in handwashing. Specifically, Gedo and Bakool have the highest rates of lack of access to an improved sanitation source—at 91% and 90% respectively (Figure 7).[25] On the hand, the extent of handwashing deprivation in Bakool is more than double that of Gedo (86.2% vs 40.9%). It is also worth noting that handwashing is generally lacking—even in regions with high access to improved sanitation. For example, the rate of handwashing deprivation in Banadir is 34.2% and this rate is about less than half that of the region with highest deprivation in handwashing—Bakool at 86.2%.

The least deprived region for the housing dimension is Banadir—where only about 31% of children lack housing. For individual housing deprivation indicators, 17.4% of the children are deprived because of overcrowding and 16.2% are deprived because of electricity (Figure 8). However, this result should be interpreted with caution given that only one domain, i.e. urban areas, were surveyed for Banadir region, as earlier mentioned We estimate the highest deprivation in housing for the Bakool region at 91%, primarily driven by electricity deprivation at 89.3%. Information provided during the consultation workshops revealed that the poor quality of electricity could explain the results for the region; the region only receives about 3 hours of electricity in the evening (during 6:00-9:00 pm). Overall, the indicator for access to electricity does not consider the quality of electricity—especially

25 Bakool region has one of the most skewed sanitation distributions—about 50% of the sampled households in the region have no toilet compared to only 38% for the whole of Somalia.

Figure 3: Nutrition deprivations by area and regions, children 0-4 years (%)

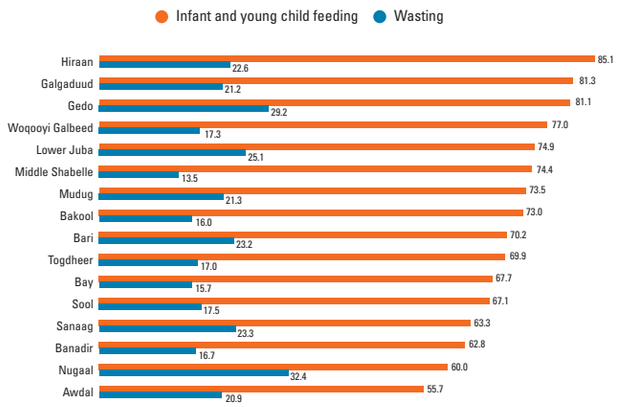


Figure 4: Health indicator deprivations by regions, children 0-4 years (%)

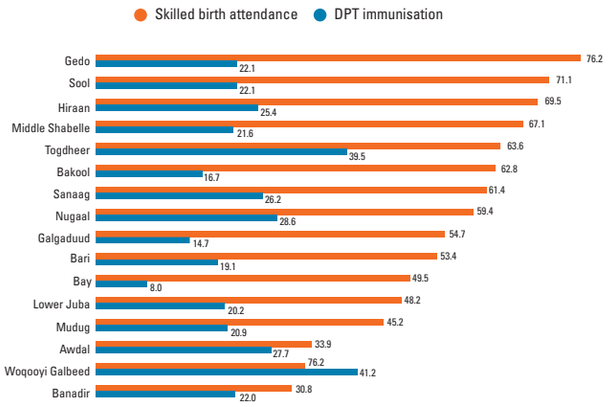


Figure 5: Education Dimension deprivations by regions (%)

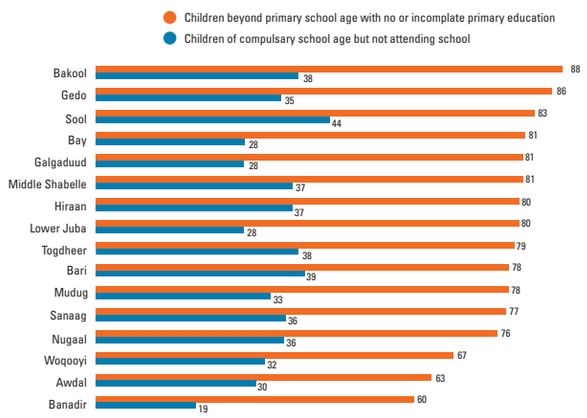


Figure 6: Water Dimension Indicators by regions, children 0-17 years (%)

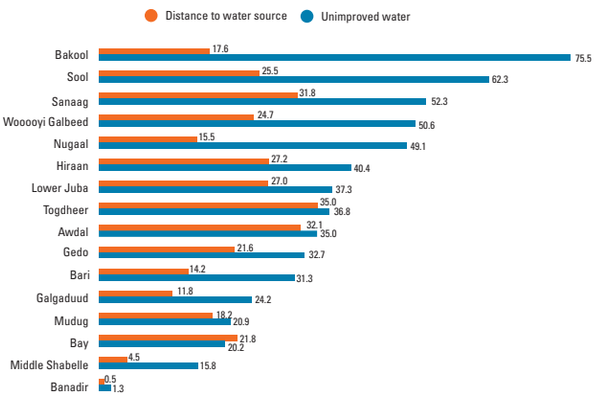


Figure 7: Sanitation and Hygiene Dimension indicators by regions, children 0-17 years (%)

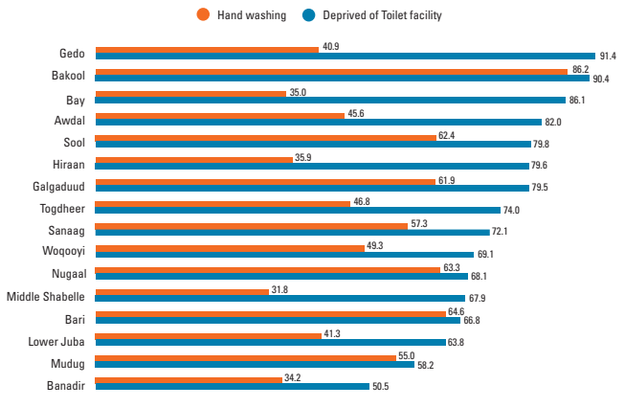
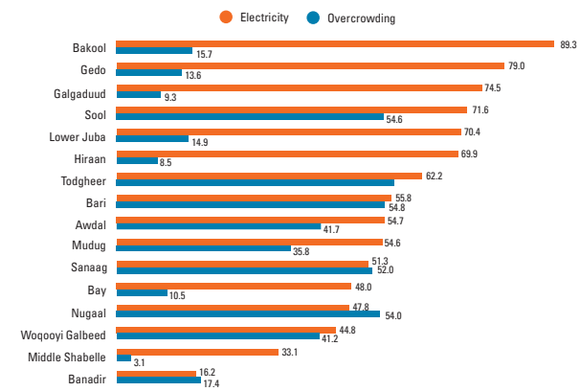


Figure 8: Housing Dimension Indicators by regions, children 0-17 years (%)



load shedding—some places only receive electricity for reduced hours.

Lack of electricity is the leading driver of housing dimension deprivation across most regions of Somalia. About seven out of every ten children in Gedo, Bakool, and Galgaduud regions are deprived of electricity. Relatively higher rates of lack of access to electricity are indicated for Sool, Lower Juba and Hiraan—at 71.6%, 70.4%, and 69.9% respectively. For the second housing indicator i.e. over crowding, there is a much wider variation in deprivation—ranging from 3.1% in Middle Shabelle to 56.8% in Togdheer. Apart from Middle Shabella, the other regions least deprived in overcrowding are Galgaduud (9.3%) and Hiraan (8.5%). Furthermore, the chart shows that for three regions—notably Banadir, Nugaal and, Sanaag, the overcrowding deprivation indicator outweighs that due to lack of electricity.

Table 3 shows the extent of deprivation due to information by domain of residence and region. As expected, children in urban areas are least deprived at 15.7%, followed by rural counterparts (28.7%). Bay has the lowest deprivation of information at 8.3%. This is explained by the fact that the SHDS survey only captured particular areas, i.e. the biggest urban town, because of security concerns, as earlier mentioned. Hence, this may not be a complete reflection of the information access in the region.

Table 4 shows the extent of deprivation due to violence by domain of residence and region. It is indicated that 38% of children in Somalia are exposed to violence. We should note that the estimated rate of violence deprivation for children is more than double the estimated rate of spousal violence reported in the SHDS (15.3%).[26] The reason for the variation is that for children, this indicator used in the MODA estimation is not a direct measure of violence towards children but serves as a proxy measure of whether a child grows up in an environment exposed to violence. Hence, it is imputed for the respective child and not directly experienced. Specifically, the indicator is defined as "Deprived (for all children in the household) if an eligible ever-married woman (15-49 years) states to have experienced domestic violence". This differs from the indicator used in the 2020 SHDS—which is based on spousal violence experience. Furthermore, it is worth noting that children in nomadic settings are the least exposed to domestic violence at 22.3%--a rate less than half that experienced in rural areas (54.5%). At the

26 According to the 2020 SHDS report, the estimated percentage of ever-married women aged 15-49 who have ever experienced emotional, physical or sexual violence committed by their husband was 15.3%.

Table 3: Information Deprivation by area and regions, children 5-17 years (%)

All Somalia	23.9
Nomadic	32.3
Rural	28.7
Urban	15.7
Regions	
Awdal	30.1
Woqooyi Galbeed	21.1
Togdheer	28.3
Sool	27.4
Sanaag	34.7
Bari	26.6
Nugaal	21.2
Mudug	17.0
Galgaduud	19.7
Hiraan	19.4
Middle Shabelle	29.4
Banadir	18.3
Bay	8.3
Bakool	23.4
Gedo	21.4
Lower Juba	26.1

Source: MODA 2022

Table 4: Domestic Violence Deprivation by area and regions, children 0-17 years (%)

All Somalia	38.0
Nomadic	22.3
Rural	54.5
Urban	33.7
Regions	
Awdal	11.7
Woqooyi Galbeed	17.9
Togdheer	27.2
Sool	24.9
Sanaag	15.9
Bari	25.8
Nugaal	15.3
Mudug	50.1
Galgaduud	59.7
Hiraan	81.9
Middle Shabelle	38.3
Banadir	28.7
Bay	72.5
Bakool	46.3
Gedo	59.2
Lower Juba	29.9

Source: MODA 2022

region level, Hiraan stands out as the location where children are most exposed to domestic violence (81.9%), while Awdal children are least exposed to violence at 11.7%.

> The regions with the highest rates of lack of access to an improved sanitation source also have the highest rates of deprivation in handwashing

5. Multidimensional deprivation

Multiple deprivations rates considers what proportion of children are simultaneously deprived in more than one dimension. Figure 9 shows the numbers of deprivations per child for children aged 0-4 years by domain of residence. It is indicated that the distribution of deprivation is heavily skewed to the right—there are hardly any children not deprived at all. Nationally, only 2% of all children aged less than 5 years are not deprived in any of the 6 dimensions (most of these are resident in urban areas, where 4.7% of the children are not deprived at all). The chart shows that at least 9 out of every 10 children in Somalia are deprived in two or more dimensions—the corresponding rates for nomadic, rural, and urban are 99.9%, 96.5% and 79.4%, respectively (these rates are not explicitly showed on the chart but are obtained by the summation of all deprivations in two, three, four, five or more dimensions). Overall, the chart shows multidimensional deprivation is widespread among infants in Somalia, with children in nomadic settings nearly completely deprived in all dimensions.

Unlike the case for infants, the distribution of multidimensional deprivation for children 5-17 years is much more evenly dispersed (Figure 10). First, the share of children not deprived in any of the 6 dimensions although still low at 4.5%. It is nonetheless more than twice that for infants at 2 % (see Figure 9). However, there is hardly any child in the nomadic setting, not deprived. Nationally, at least 81.4% of all children aged 5-17 years are deprived in two or dimensions; this rate is 65.2% for urban children (these rates are not indicated on the chart but are obtained by the summation of deprivations in two, three, four, five or more dimensions).

5.1 Multiple Deprivation and household welfare status

It is important to compare how multidimensional poverty relates to other measures of household wealth. Given that the 2020 SHDS did not capture household consumption or income indicators of household wellbeing, we rely on the household asset index generated in the SHDS to proxy for household consumption or income.[27] The SNBS subdivides households into quintiles of wealth based on this index. Previous assessments have shown that the bottom two quintiles (i.e. the poorest and poorer) approximate the poorest households based on consumption measures (Rutstein, 2008).[28]

Table 5 shows the distribution of individual deprivation dimensions by wealth quintiles. For all dimensions, the extent of deprivation reduces with increases in wealth status. The only exception is for the nutrition dimension—where children from the

27 According to the 2020 SHDS, the asset index is estimated by factor analysis based on dwelling, household characteristics, consumer goods, and assets, including livestock.

28 Rutstein, S.O. (2008). The DHS Wealth Index: Approaches for Rural and Urban Areas. The DHS Working Papers, No.60, Demographic and Health Research, USAID, October, 2008.

Figure 9: Percentage distribution of deprived children aged 0–4 years by area of residence

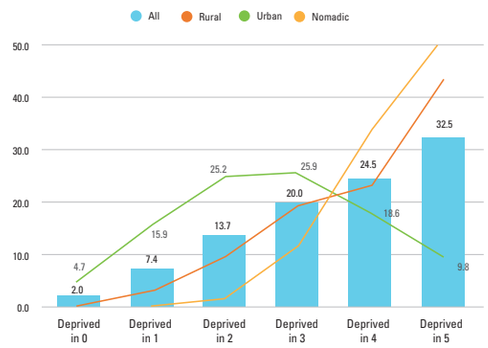


Figure 10: Percentage distribution of deprived children aged 5-17 years by area of residence

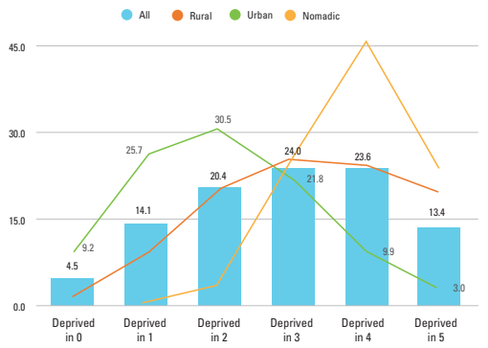


Table 5: Uni-dimensional deprivation by household wealth status (%)

Household wealth quintile	Dimension							
	Nutrition	Health	Education	Information	Water	Sanitation	Housing	Violence
Lowest (Poorest)	68.9	78.7	60.3	34.8	76.1	97.4	95.3	39.5
Second	73.4	55.3	41.9	22.2	36.0	88.9	78.2	54.0
Middle	68.9	50.2	36.0	25.0	22.9	79.5	59.4	41.9
Fourth	55.7	40.3	30.7	11.8	25.5	69.5	32.7	28.5
Highest (Richest)	53.5	33.4	26.0	1.2	17.9	47.6	28.5	15.1

Source: MODA (2022)

second poorest quintile have the highest deprivation rate at 73.4%, followed by the bottom and middle quintiles. Furthermore, although children from the bottom three quintiles are most deprived of nutrition, there are nonetheless not very different from children from the top wealth quintiles. Similarly to the health dimension, the divergence is only for the bottom and top quintiles—the other three are relatively similar. Finally, nearly all children in the poorest quintile are deprived of these two dimensions of sanitation and housing.

Following the Bristol approach (Gordon et al, 2003), we classify multidimensionally poor children as those deprived in two or more dimensions.[29] Figure 11 shows that at least 82 % of all Somalian children are identified as being affected by multidimensional poverty. The chart also shows that children resident in a nomadic setting are nearly all multidimensionally

> The results indicate that for Somalia the traditional income poverty or wealth measures partly adequately capture these experiences of childhood deprivations

29 Gordon, D., Nandy, S., Pantazis, C., Pemberton, S., and Townsend, P. (2003). The Distribution of Child Poverty in the Developing World. Bristol, UK, Centre for International Poverty Research."

Figure 11: Extent of Multidimensional Poverty by area (%)

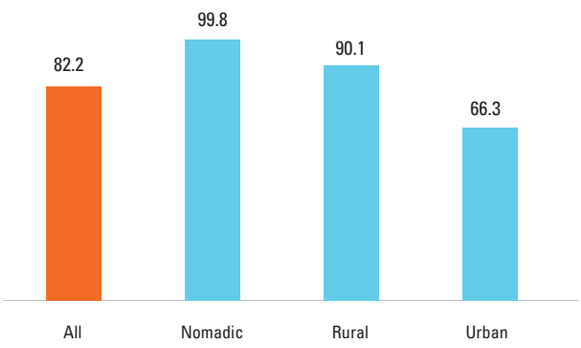
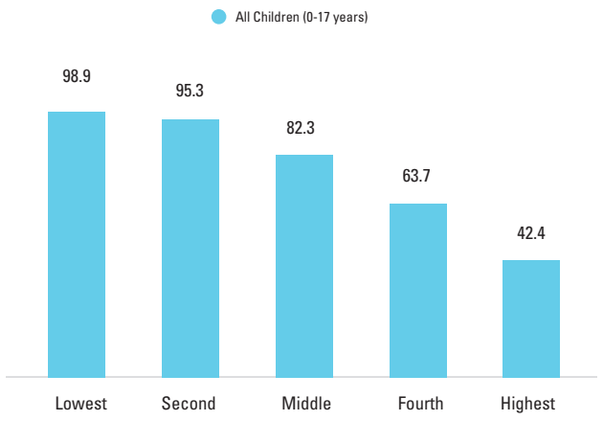


Figure 12: Multidimensional Deprivation by household welfare status (%)



deprived—99%. For children in rural and urban areas, the multidimensional deprivation rates are 90.1% and 66.3 % respectively.

Based definition of multiple deprivations of a child being deprived in two or more dimensions, Figure 12 shows that multiple deprivations are strongly related to household wealth. Specifically, nearly all children in the poorest quintile aged less than 5 years are affected by multiple deprivations, compared to about 42 % for the top quintile. If we take the bottom two quintiles to proxy households that are income poor, the chart shows that 98% of all children are affected by multidimensional poverty. Overall, the results indicate that for Somalia the traditional income poverty or wealth measures partly adequately capture these experiences of childhood deprivations.

6. Overlapping Deprivations

6.1 Children aged 0-4 years

To understand the severity of the deprivation it is useful to examine how deprivations relate to each other. MODA identifies which deprivations are commonly experienced together. As described in section 2 on methods, the estimations consider the proportion of children suffering from one or multiple deprivations at the same time. Figure 13 shows the distribution of the MODA for children aged 0-4 years for the 6 dimensions. The chart shows that for deprived children, only a very small proportion of Somali infants is deprived in only that specified dimension. Majority of children deprived are deprived in more than one dimension. The largest proportion of children are deprived in 4-5 other dimensions. The most overlap occurs in the sanitation dimensions, where at least 56% of the 0–4-year-old children are deprived in three other dimensions (this rate is not indicated on the chart but is obtained by the summation of all deprivations in three, four, five or more dimensions).

An examination of deprivation in nutrition shows that 2.1% of children are only deprived in nutrition and none of the five other dimensions, 6% have one other deprivation besides nutrition, and 11.3% have two additional deprivations. In other words, about 19.4% of children are deprived in nutrition and up to two other dimensions (not shown on the chart but obtained by summation of the first three columns on the nutrition row). In comparison, the majority (35.3%) of children under five years) are deprived in nutrition and three or more deprivations (not shown on the chart but obtained by summation of the first four columns on the nutrition row).

The deprivation overlap analysis using all dimensions shows to what extent deprivation is a unique problem. The most significant proportion of children experiencing only one deprivation is in the sanitation dimension (2.9% are deprived in sanitation only, with 85% deprived in sanitation). Less than 1% of children are deprived in housing, water and health alone, and these dimensions are most associated with other deprivations.

Figures 14 and 15 again show the percent of children 0-4 years deprived by dimension but break the data down further also to show the percent of overlap of each type of deprivation with 1-5 other deprivations by area. The chart shows that the distribution of the overlaps by residence is similar to the whole country i.e. most infants deprived in 4-5 other dimensions except for children in urban areas.[30] For example, for water dimension in urban areas, the 4-5 other deprivations account for 25% of the share of total water deprivation (4.8% out of 19.2%). For health, the share is about 15% of the total health deprivation (6.3% out of a total 41.9%) while it is 11.2% for the

30 For urban children, the most dominant category is deprivation in 2 other dimensions.

total nutrition deprivation in urban areas (6.9% out of a total of 61.8%). Furthermore, it is worth noting for nutrition, in urban areas, a substantial proportion of infants are deprived in only that dimension about 11.3% of the total deprivation (7% out of a total 61.8%). These charts illustrates how no deprivation is "stand-alone", that is, many deprivations seem to have a high overlap with each other.

Figure 15 shows the MODA by the domain of residence for 3 dimensions of violence, housing and sanitation. Again for the 3 specified dimension, it is only in urban areas that infants are deprived the least in 4-5 other dimension—that is 13.8% for violence, 15.3% for housing and 14.9% for sanitation (these rates are not indicated on the chart but are obtained as the share of the "deprived in 4-5 other dimensions" in total deprivations) . This partly relates to the fact that the overall number of deprivations experienced by children in Somalia resident in a nomadic setting is substantially very large. It also is a function of the pattern of exposure in the nomadic setting. For example, among children aged 0-4 years who are deprived of health, less than 1% are deprived of health only, while 77.2 % are deprived in at least three other or more dimensions.

The results for the overlapping deprivation for sanitation show that sanitation alone is not the only problem; children suffer from sanitation and at least two other dimensions. The same situation obtains for housing in nomadic settings—most children are deprived of housing and two other dimensions. Overall, results indicate that sanitation, water, and housing deprivation are almost everyday occurrence for children in the nomadic setting.

6.2 Dimension overlaps for Children aged 5-17 years

Figure 16 shows the MODA for children aged 5-17 years for the 6 dimensions. For children in the 5-17 years age group, the two dimensions of deprivation that overlap the most are housing and sanitation. At least six out of ten children (66%) are deprived of one or more of these dimensions, and at least 13.1% are deprived in 4-5 other dimensions. Furthermore, when including all the selected dimensions for this age group, the pattern in the deprivation overlap changes. For example, whereas in total 43% of children are deprived in education, 1.6% are deprived in only education and none of the five other dimensions, 26.8% are deprived in education and three, four, or five additional dimensions (not indicated in the chart but obtained by summation). Furthermore, unlike the case for infants aged 0-4

Figure 13: Deprivation overlap by dimension. Children 0-4 years

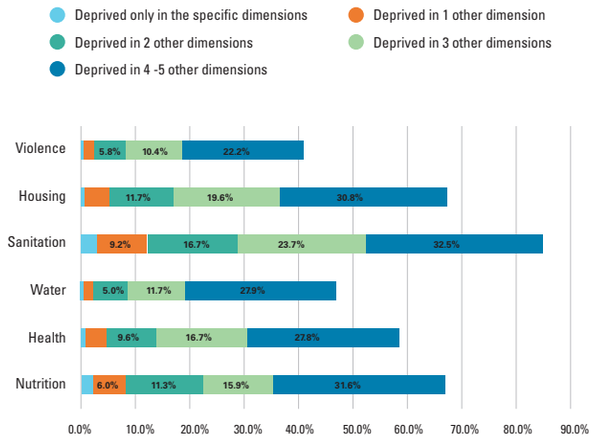


Figure 14: Deprivation overlap by area for children 0-4 years

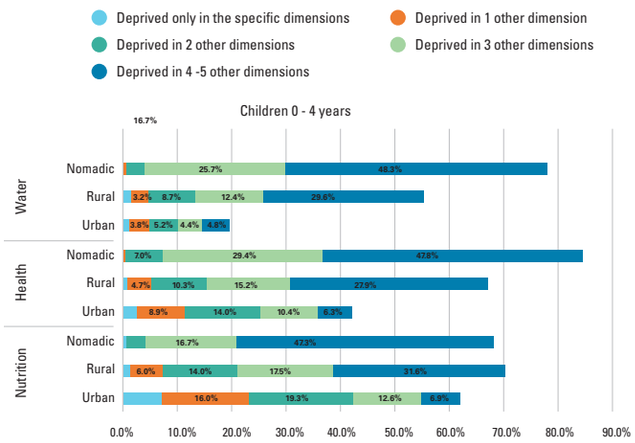


Figure 15: Deprivation overlap by area Children 0-4 years

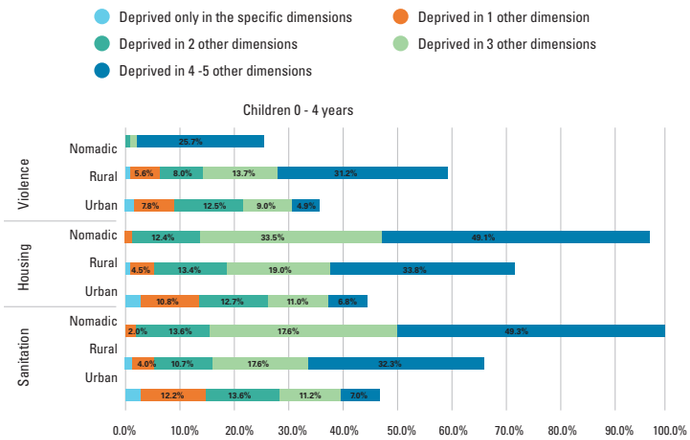


Figure 16: Deprivation overlap by dimension, children 5-17 years

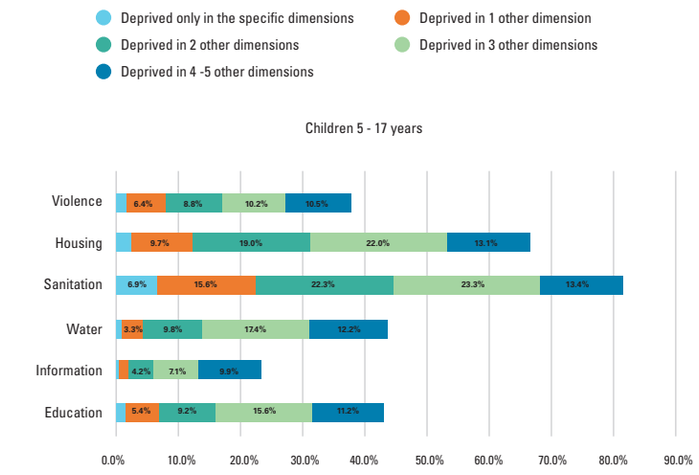


Figure 17: Deprivation overlap by dimension and area, children 5-17 years

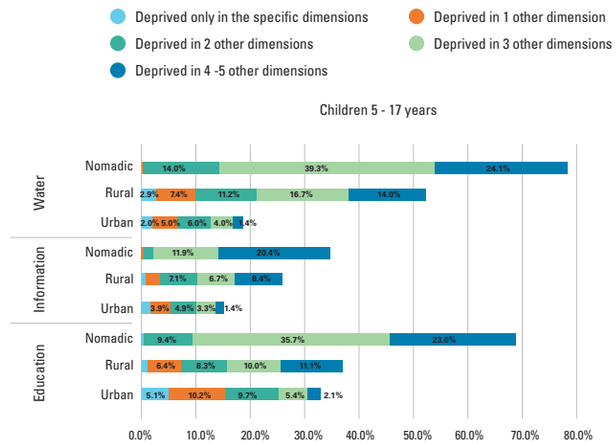
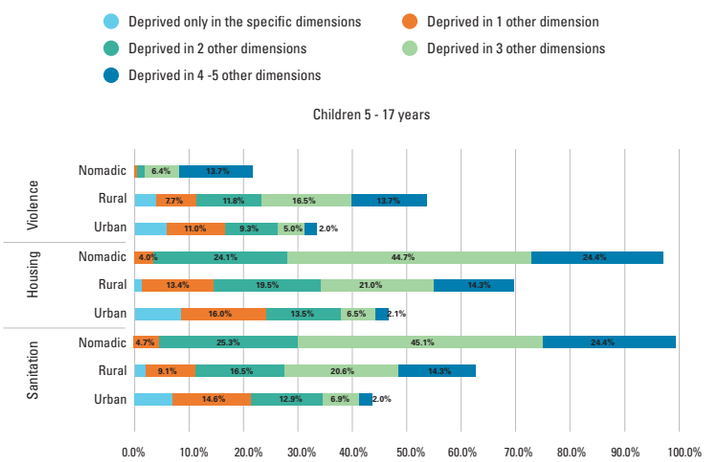


Figure 18: Deprivation overlap by dimension and area, children 5-17 years



years, for older children, the dominant category is children deprived in 3 other dimensions dominate. The only exception is the information dimension—where the category 4-5 other dimension dominates.

Figure 17 shows the MODA by the domain of residence for 3 dimensions of water, information, and education. There is significant variation in the dominant category by area. For example, for water, the dominant category is deprived in two other dimensions in urban areas whereas the dominant category for both rural and nomadic domains are deprived in 3 other dimensions. On the other hand, for the information dimension, the dominant category is deprived 4-5 other dimensions for rural and nomadic areas. Furthermore for education dimension, the dominant category is deprived in 1 other dimension for urban, deprived in 4-5 other dimensions for rural and deprived in 3 other dimensions for children in nomadic settings.

Figure 18 shows the MODA by the domain of residence for 3 dimensions of violence, housing, and sanitation. Again there is variation in the dominant category by area. For urban children, the dominant category is deprived in one other dimension. On the other hand, for children in rural and nomadic domains, the dominant category is deprived in 3 other dimensions—except for violence.

The largest proportion of children are deprived in 4-5 other dimensions. The most overlap occurs in the sanitation dimensions, where at least 56% of the 0–4-year-old children are deprived in three other dimensions

7. Determinants of multidimensional deprivation

This section delves deeper into the determinants of multidimensional deprivation – defined as simultaneously suffering from two or more deprivations – separately among children aged 0-5 years and 6-17 years. A logit model was adopted and results are reported in Table 6.

Only a few of the children's own characteristics influence their probability of being multidimensionally deprived. Age is negatively correlated to multiple deprivations, as the estimated odds ratios (respectively 1.72 for deprivation and 1.94 for extreme deprivation) imply that secondary school-aged children are more likely to suffer multiple extreme deprivations than primary school-aged children. Other odds ratios can be interpreted similarly. For example, being an orphan reduces the odds of multiple deprivations but this only significant for the 0-5 age category and for less severe deprivation. One interpretation is that households that take in orphan tend to be richer and may prefer young children. On the other hand, being a fostered/adopted or being a relative other than the son or daughter of the household head increases the odds of multiple deprivations; however, this is only significant for older children.

The characteristics of the household head are more important than those of the individual child with respect to multidimensional deprivation. A head's education are inversely correlated with the probability of being severely or less severely deprived in a multidimensional context. The odds ratios suggest that having a head with primary education, secondary or higher reduces the chance for the children to be extremely deprived respectively by 1.5 (1/0.66), and 2.1 (1/0.48) times, in comparison to children whose head has no education. Our results for the age and sex of the household head, although significant, are of relatively lower magnitude compared to those of education. Household size also proves to be a significant determinant. It appears that each additional household member increases the odds that a child will suffer multiple deprivations. At the same time, each additional household member reduces the odds that a child will suffer multiple extreme deprivations

The domain for area of residence is one the most critical drivers of multiple deprivation. For infants, being resident in a rural area reduces the odds of being deprived by 1.8 (1/0.55), while in urban areas, the odds reduces by 9.3 (1/0.11). However, for older children, being resident in rural areas compared to nomadic settings minimises the likelihood of deprivation by 66%. A probable explanation for the jump could be schooling. For infants, education attainment for the household head is significant but in no way near in magnitude to the area of residence domains.

Regarding the results for the regions, for the infant's regression, the Bakool region is the worst off compared to Banadir. This may be because it is a remote region where 80% of the population

Table 6: The determinants of child multidimensional poverty (2 or more dimensions), 2020

Comparators	Drivers	Odds ratios			
		Children 0-5 years		Children 6-17 years	
		Extremely Deprived (4 or more dimensions)	Deprived (2 or more dimensions)	Extremely Deprived (4 or more dimensions)	Deprived (2 or more dimensions)
Age 6-13 years	School age (13-17 years)			1.94	1.72
Female	Sex of child (male)	1.04	0.97	0.92	0.91
Both parents are alive	Mother or father dead	0.92	0.74*	1.04	1.05
Biological child	Child is adopted/fostered	1.04	2.13**	1.14	1.45
Biological child	Child is other relative	0.96	1.23*	0.96	1.04
	Age of household head	0.99	0.99*	1.00	1.00
Female	Sex of head (male)	1.28	1.26**	1.06	1.14
No education	Head has primary level	0.66	0.71***	0.87	0.85
No education	Head has secondary level	0.48	0.45***	0.72	0.56
	Household size	0.98	1.03***	0.97	1.03
Nomads	Location (Rural)	0.55	0.023***	0.18	0.01
Nomads	Location (urban)	0.11	0.001***	0.04	0.00
	Regions				
Banadir	Awdal	4.72	1.35**	4.96	1.42
Banadir	Woqooyi Galbeed	2.56	1.26*	3.12	1.61
Banadir	Togdheer	3.42	1.48***	4.48	1.60
Banadir	Sool	4.04	3.00	4.55	4.11
Banadir	Sanaag	2.88	1.14	3.53	1.60
Banadir	Bari	2.59	1.40	3.34	1.84
Banadir	Nugaal	2.62	1.42	2.57	1.47
Banadir	Mudug	4.49	1.15	3.77	1.31
Banadir	Galgaduud	5.47	4.93	2.86	3.72
Banadir	Hiraan	14.85	3.48	10.65	4.32
Banadir	Middle Shabelle	2.31	0.99	1.60	1.23
Banadir	Bay	12.32	5.32	23.81	9.52
Banadir	Bakool	14.28	11.42	7.23	9.42
Banadir	Gedo	8.93	5.72	5.58	4.32
Banadir	Lower Juba	4.51	1.56	3.06	1.38
	Number of obs. (N) LR Chi2(16) LR Chi2(17) Prob > Chi2				

is nomadic and isolated, with poor transportation infrastructure. Even for older children, Bakool regions remain the worst; in this case, Bakool is nearly as bad as Bay region, for which only urban households were covered. The 2020 SHDS did not fully cover the Bay region because of insecurity; regardless of its urban status, it fairs relatively much worse. The key takeaway is that security matters. Even children in urban areas will not go to school in an environment of insecurity.

It appears that each additional household member increases the odds that a child will suffer multiple deprivations

8. Conclusions and Recommendations

Multidimensional deprivation is widespread in Somalia; at least eight out of even 10 children in Somalia are multidimensionally deprived. Furthermore, we find a significant overlap in deprivations, which suggests that integrated approaches are needed to address childhood deprivation adequately. The deprivation rates are highest for children resident in the nomadic domain where hardly any child is not multidimensionally deprived. These specific findings have implications for how government and development partners consider addressing childhood deprivation and the nature of interventions. Specifically, efforts should address several shortfalls simultaneously, rather than focusing on particular dimensions. Relatedly, except for children resident in the Banadir sub-region, all other children are challenged in several ways.

The most common form of deprivation is sanitation, followed by housing. As earlier noted, open defecation is widespread in Somalia, especially among households in the nomadic domain. In such an environment, we recommend interventions implemented in similar settings, ranging from community-led total sanitation (an education-based intervention targeting behaviour change) to emergency sanitation facilities (e.g. shared latrines) for displaced communities.

The children facing the highest rates of deprivation are in the nomadic setting—characterised by routine movements in search of water and pastures. Addressing the water challenges would eliminate the need to move by nomadic communities, given that movement is driven by the requirements for pasture and water for domestic use. Furthermore, addressing the challenges of access to water can indirectly address nutrition, since meal frequencies are lower, and children are hungry due to water scarcity. Hence, the government and development partners need to prioritise expanding access to water.

We find that children in nomadic settings—especially girls—are about twice as likely to be out of school as children in rural or urban areas. The lack of school attendance is also the highest in the regions challenged by insecurity. There is a need to address girls' safety in nomadic settings to ensure that they enrol and stay in school. Interventions could be at the community level, where male members of the community volunteer to escort vulnerable girls to school. Encouraging boys to stay in school can indirectly ensure an adequate supply of safety chaperones. In addition, communities could organise children so that teachers find them in their locality.

Several other approaches can attract and keep children in schools. For instance, providing school meals can prove worthwhile while addressing nutritional concerns. Second, conditional cash transfers, conditional on school attendance, can attract children to school.

Despite the widespread deprivation situation in Somalia, particular regions exhibit relatively large rates of deprivation. Regions such as Gedo, Bakool, Bay and Hiraan exhibit the highest rates of deprivation for several indicators. The insecurity environment does challenge these regions. In such settings, schooling is untenable. This could also explain the poor health indicators; health facilities are inaccessible in an environment characterised by insecurity. Recruiting and retaining health workers in such areas would not be easy. On the other hand, regions such as Banadir, Bay, Lower Juba, and Woqooyi Galbeed have large populations of IDPs.

Several earlier assessments point to children from households resident in internally displaced persons (IDP) camps facing worse outcomes. Indeed, at least 17% of the Somali population are IDPs. However, the 2020 SHDS did not capture any variables relating to displacement. We recommend that future surveys by SNBS should include a variable for displacement.

It is not only important that a household has access to an improved water source within a reasonable distance, but also that the quality of water is adequate. Given how water is delivered in Somalia—especially in urban areas where wells are established in proximity to the communities, there is a high risk of water contamination. The dominant sanitation source—the pit latrine could affect the source of the water table. Although the 2020 SHDS captured some information on water treatment at the household level, such self-reported information may not adequately capture the status of water quality at the household level. Given the importance of water quality in Somalia, future surveys should adopt actual testing of water facilities both at the household and at the community level (to establish whether potential contamination is at the facility or through water transportation and storage, i.e. at the household). Given that testing the quality of water during surveys can be expensive, we recommend that for future surveys, they could test water quality for some but not all surveyed households.

The 2020 SHDS did not capture important information relating to child protection—especially of adolescent children. For example, there was no specific information on child labour. We recommend future surveys should also include variables on culturally acceptable variables on adolescent health to allow for more sub-groups analysis for the MODA.

> We find that children in nomadic settings—especially girls—are about twice as likely to be out of school as children in rural or urban areas. The lack of school attendance is also the highest in the regions challenged by insecurity.

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