



# CHILD POVERTY IN IRAQ

## **An Analysis of Child Poverty Trends and Policy Recommendations for the National Poverty Reduction Strategy 2017-2021**

UNICEF Iraq  
Social Policy Section  
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Child Poverty in Iraq  
An Analysis of the Child Poverty Trends and Policy Recommendations for the National Poverty Reduction  
Strategy 2017-2021

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## Acronyms

AME	Average Marginal Effects
AMP	Average Marginal Probabilities
CRC	Convention of the Rights of the Child
CSO	Central Statistical Organization
DHS	Demographic and Health Survey
ECV	Estimated Compensating Variations
FOD	First-Order Stochastic Dominance
GDP	Gross Domestic Product
GoI	Government of Iraq
ID	Iraqi Dinars
IHSES	Iraq Household Socio-Economic Survey
KR-I	Kurdistan Region of Iraq
KRSO	Kurdistan Region Statistics Office
MICS	Multiple Indicator Cluster Survey
MoP	Ministry of Planning
MODA	Multiple Overlapping Deprivation Analysis
MPI	Multidimensional Poverty Index
NDP	National Development Plan
NPL	Iraqi National Poverty Line
OLS	Ordinary Least Squares
PCE	Per Capita Expenditure
PDS	Public Distribution System
PRS	Poverty Reduction Strategy
RR	Relative Risk
SNA	System of National Accounts
SPF	Social Protection Floor
SSN	Social Safety Net
UNICEF	United Nations Children's Fund
USD	United States Dollar
WHO	World Health Organization

## Foreword

We are pleased to issue this joint report on behalf of the Government of Iraq and UNICEF. This report was produced as a key input for a child-sensitive national Poverty Reduction Strategy-2, 2017-2021 (PRS-2). UNICEF presented the findings of this report, at the request of the Government of Iraq and the World Bank, during the PRS-2 development workshop in Erbil in October 2016. This report emphasizes Iraq's commitment to alleviating child poverty, and to supporting targeted strategies to improve the lives of children and their families. It also underscores the strong relationship, based on mutual goals of realizing all children's rights, that exists between the Government of Iraq and UNICEF.

The analysis contained in this report looks at the extent and magnitude of child poverty and disparities in Iraq based on the most recent Iraq Household Socio-Economic Survey (IHSES-2012). The results are both provocative and instructive. The fact that in 2012, 23% of Iraqi children lived in poverty representing 57% of all poor, and continue to suffer severe deprivation presents strong reasons for concern. According to latest poverty projections by the Government of Iraq, poverty rates in Iraq have increased since 2014 due to economic downturn because of a drop in oil prices and the ongoing conflict. The protracted displacement crisis has further exacerbated vulnerabilities and left millions of people including children exposed to exploitation, loss of schooling years and health hazards. Children are disproportionately affected by displacement and suffer the most.

Although the problem of child poverty is part of a wider picture, it clearly shows that development efforts to date still have not adequately addressed the multiple deprivations and their causes, suffered by children. It is an issue that calls for the attention of policymakers as well as other stakeholders working in the field of child and human development. The report's findings also point to the need to better support children and their families through targeted social protection schemes to help future generations get out of poverty and deprivation, as well as to achieve the country's medium-term planning goals.

We hope that the information and insights generated by this research will be used to inform the policies and programs of government as well as other stakeholders. We also hope that it will inspire the government at all levels, its development partners and other non-government actors to combine their efforts to achieve more substantive interventions and results in future.



**Dr. Mahdi Al-Allaq**

Secretary General of the Council of Ministers  
Republic of Iraq



**Peter Hawkins**  
UNICEF Representative in Iraq



## Executive Summary

In 2012, a fourth of Iraq's children lived in poverty, and we find that a third of all children in Iraq are unable to access all their basic child rights. Children have the highest risk of poverty across all age groups, and tend to live in households with lower incomes. Child poverty is a persistent issue in Iraq limiting the potential of a large portion of Iraq's young population, curbing educational attainment, generating poor health outcomes, and preventing children from realizing their basic rights. Yet poor children and poor households are not the main beneficiaries of the range of social protection systems available to Iraqis. In order to come close to making Iraq a promising place for children again, there needs to be a significant focus on eradicating the specter of child poverty from vulnerable, poor and extremely poor children.

This report provides a comprehensive analysis of child poverty trends between 2007 and 2012, using data from the Iraq Household Socio-Economic Survey (IHSES) in those years. No other household survey for the measurement of poverty has been conducted in Iraq since this child poverty analysis was done in 2012/2013. We examine child poverty in Iraq by measuring the incidence, depth, severity, and risks of income poverty for children. We assess key determinants of child poverty to understand the interaction between expenditure (monetary or income poverty) and deprivation of child rights. The report also assesses the role of, and gap in, current social protection schemes in benefiting poor and vulnerable children.

Half of Iraq's 34,205,038 million people are children under the age of 18, and children comprised 3.7 million of Iraq's 6.5 million poor people in 2012. While the total incidence of poverty had decreased from 22.9% in 2007 to 19% in 2012, nearly one in four children (23%) still live in poverty. Not only do children endure higher rates of poverty, but non-poor children also face a higher risk of falling into poverty. In 2012, children faced a 25% higher risk of poverty, on average, than other age groups in the population. At the same time, the percentage of children living in extreme poverty doubled to 1.2% of the poor, higher than the rates for adults and the elderly combined. More recent government estimates show that poverty in the general population in Iraq has increased to 23% and among internally displaced families to 38%.

We find that geography is a major determinant of child poverty in Iraq. Child poverty rates in rural areas is double that of urban areas; 34% of rural children are poor versus 17% of urban children. There are also large geographic discrepancies across governorates. For instance, the proportion of children living in poverty is less than 6% in the Kurdistan Region, but nearly 50% in the southern governorates of Muthanna, Qadissiya, Missan and Thi-Qar.

Our analysis provides a detailed profile of the poor child in Iraq. Rural children tend to be slightly poorer than their urban counterparts, and girls and boys face similar risk factors for poverty. Not surprisingly, parents who worked were less likely to have poor children, and there were high child poverty rates when the head of household is illiterate. Similarly, larger household sizes predicted higher levels of child poverty. While there are relatively low numbers of extreme poor children, the number is on the rise. Almost 8% of Iraqi children between six and 18 years participated in the labour force in 2012, with child labour a key predictor of life-long poverty.

For children, poverty cannot be understood solely in monetary terms, because children do not directly access income or spend it. Taking a more nuanced approach, we look at lack of access to children's rights to health, education, water and sanitation, basic living standards, and protection. A third of all children in Iraq lack access to a child right guaranteed in the Convention on the Rights of the Child, while the number is much higher for certain groups of children. For instance, half of children aged 0-4 lack access to one or more children's rights. We also find that about 30% of Iraqi children under the age of five suffer from food deprivation and one in three adolescents lack full access to education. Indeed, children from the poorest 10% of households—living on less than 2.5 USD per person per day—have disproportionately the highest probability of becoming stunted, dropping out of primary school, or becoming deprived of access to improved water, sanitation, and durable housing.

In 2012, one in ten Iraqis benefited from some sort of social protection scheme such as social safety net support to vulnerable groups (such as orphans, widows, divorced women and the disabled) and the state pension system. Yet, a major finding of this report is that only 12.5% of Iraq's poor are reached by these social safety net cash transfers. This leaves 272,000 extremely poor people and 5.35 million poor people without assistance from social protection schemes. Moreover, the report finds that 82% of government expenditures on cash transfers



is actually benefiting more affluent segments of the population. While social protection is usually considered an insurance policy against poverty and a tool for promoting inclusive development, in Iraq social protection is not achieving these purposes. These schemes now cost the government 5.26 trillion ID (4.7 billion USD) or 4.5% of the country's total annual budget.

Similarly, the Public Distribution System (PDS), set up in 1990 to prevent a food crisis as a result of the war, provided basic food rations to 96% of the total population in 2012. While the PDS provides almost universal food ration distribution, nearly 80% of total government expenditure on this system benefits more affluent Iraqis and only one-fifth (20.5%) of total government expenditure on the PDS reaches the poor and extremely poor. The fact that 98% of children live in a household receiving food rations, yet one in four children under five years old is still stunted, brings the effectiveness of the system into question.

This evidence calls for the establishment of a targeted child grant. Firstly, children represent a growing majority of the poor in Iraq, yet the current cash transfer schemes fail to reach most poor children, leaving them unprotected and vulnerable to serious deprivations of their rights. Secondly, cash assistance has a direct impact on children's developmental outcomes and on the reduction of their households' economic vulnerability. Preventing child poverty and deprivation has important long-term socio-economic and societal benefits. Given that needs and vulnerabilities vary considerably between the extremely poor, the poor, and the vulnerable, progressive cash assistance is the most adequate and equitable mechanism to address children's poverty and multiple deprivations.

Children represent a growing majority of the poor, face a higher risk of falling into poverty and of becoming deprived of their rights, and are increasingly left without social protection. Evidence-based policy recommendations call for the need to have a more child-responsive budgeting allocation; to strengthen evidence-based, decentralized planning and programming; to introduce a child grant within the existing social safety net that targets vulnerable, poor and extremely poor children with progressive benefits; and to establish a real-time monitoring mechanism that captures child poverty on its broader definition.

Children should be given the highest priority on the agenda of policymakers engaged in designing anti-poverty strategies. This priority cannot be overstressed considering that children not only represent the majority of the poor and face an increasing risk of poverty, but also because children experience age-specific vulnerabilities, which amplify the damaging effect of poverty and irreversibly affect their growth potential.

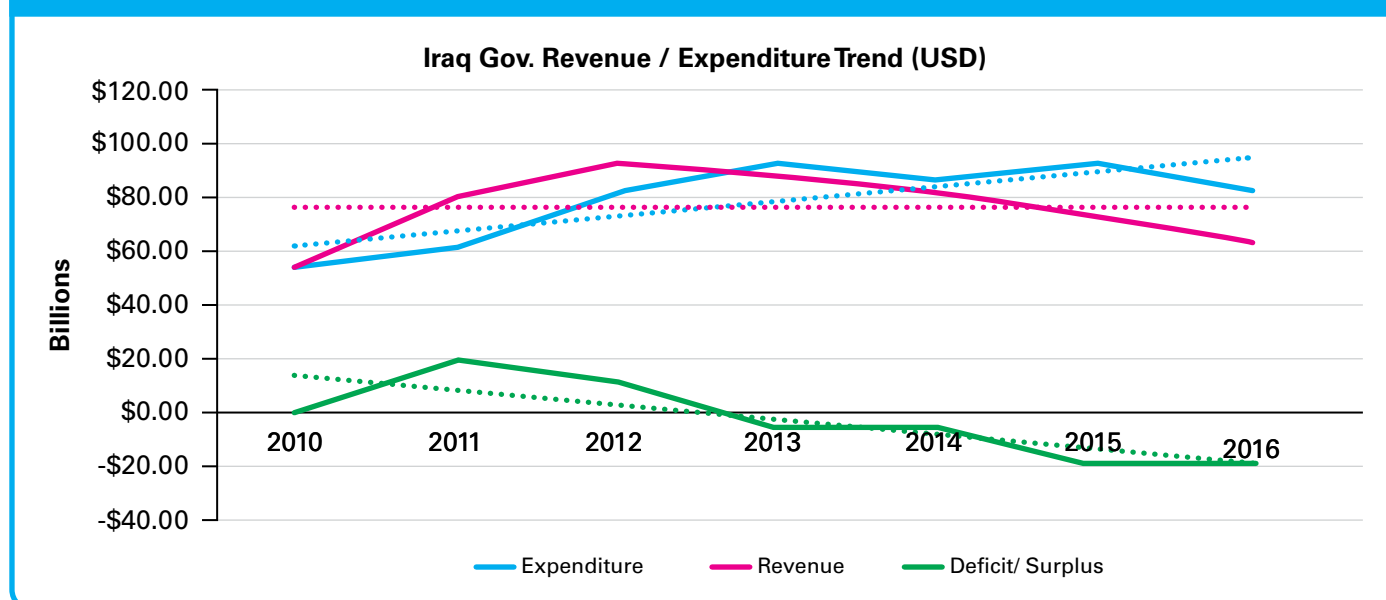
# 1 Introduction and Current Context

## 1.1 Background and Context

Since 2014, Iraq's economy was hit hard by the drop in oil revenues due to a reduction in the global demand and increase in the supply of oil in the international market, and the cost of the conflict. The GDP per capita (current) dropped by 28.5% from \$6,500 in 2012 to \$4,630 in 2015. The World Bank estimates that total income (measured as household consumption), which includes both labour and non-labour income, declined in almost all of Iraq's governorates (World Bank, 2016). Iraq's economy relied heavily on oil revenue, which accounted for 75% of GDP and provided 95% of total federal revenue in 2012.

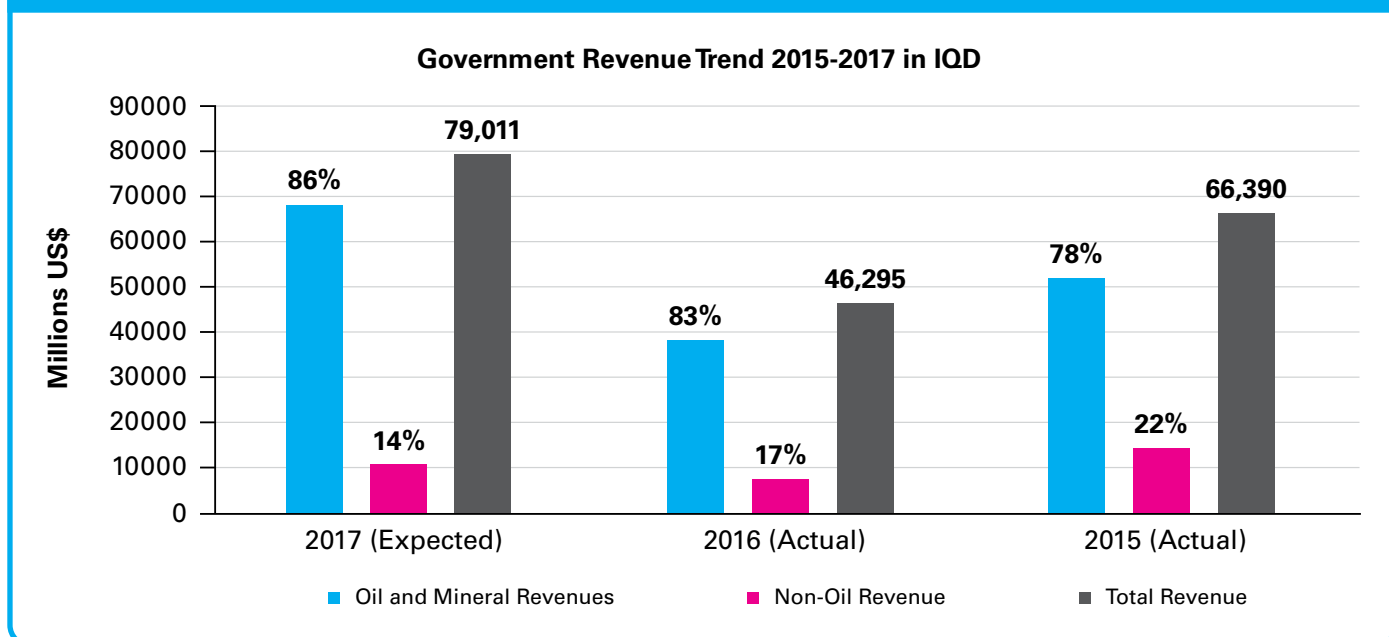
The reduction in the price of oil in the international market has negatively impacted the Iraqi economy. The real GDP contracted by 2.1% in 2014, yet has rebounded to 2.4% in 2015, and IMF estimates suggest that real GDP will increase in 2016. This is partly due to an increase in the production of oil by 12.5% in 2015 and an estimated increase of 20% in 2016, from 2014. The current account deficit has increased since 2014 due to a 47.3% drop in export earnings because of low oil prices, shrinking a major source of government revenue.

Figure 1.1: Iraq Government Revenue / Expenditure Trend



Source: Government of Iraq data provided on September 2016

Figure 1.2: Iraq Oil Revenue Projections - 2016-2017

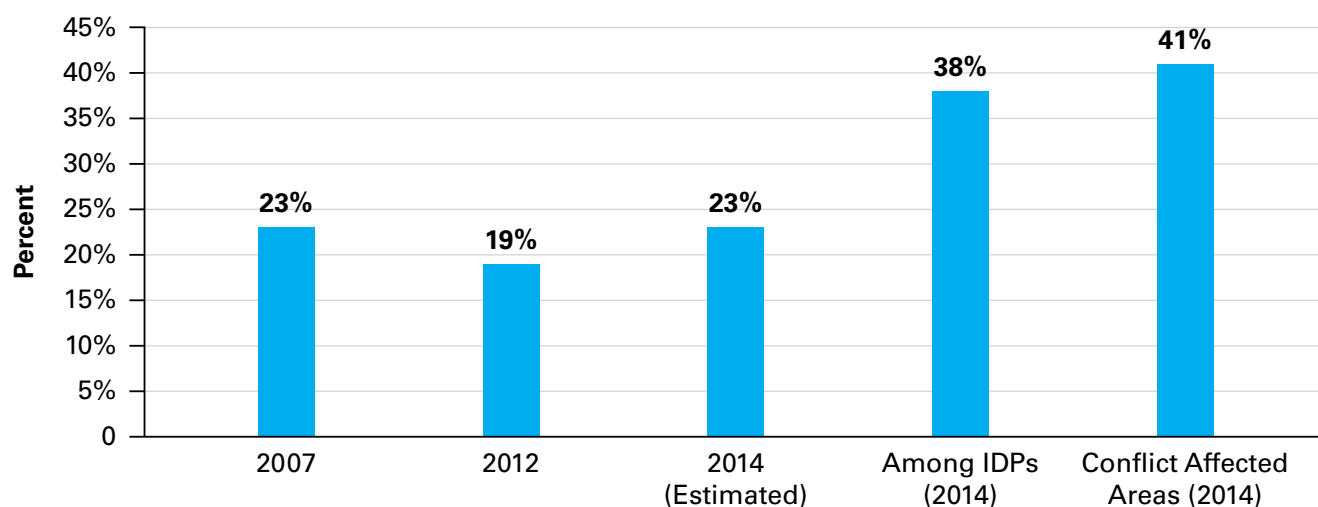


Source: Projection based on Iraq's monthly oil exports and production. Iraq sells oil US\$4 per barrel less to US and European markets and actual revenue projection is based on that

Though poverty has not been measured systematically since 2014, the GoI estimates that poverty among the IDP families has increased to 38% in 2014 and the poverty rate in the conflict affected governorates (Anbar and Ninewa) is 41% in 2014. In the general population, poverty rates in Iraq is estimated to be 23%. The analysis based on 2012 IHSES shows that 57% of all poor in Iraq were children. Assuming the same ratio of child poverty (57%) in IDP population as in the general population in 2012, it is estimated that there are around 0.73% million poor IDP children in Iraq representing 45% of all IDP children in Iraq. Poverty rates in conflict affected areas are even higher.

Figure 1.3 shows there has been a dramatic increase in poverty. The deterioration in the economic and security situation has left many households highly vulnerable with limited access to PDS food rations. High unemployment and the disruption of formal and informal safety-nets has made households less resilient, and more likely to fall into poverty and embark on negative coping mechanisms.

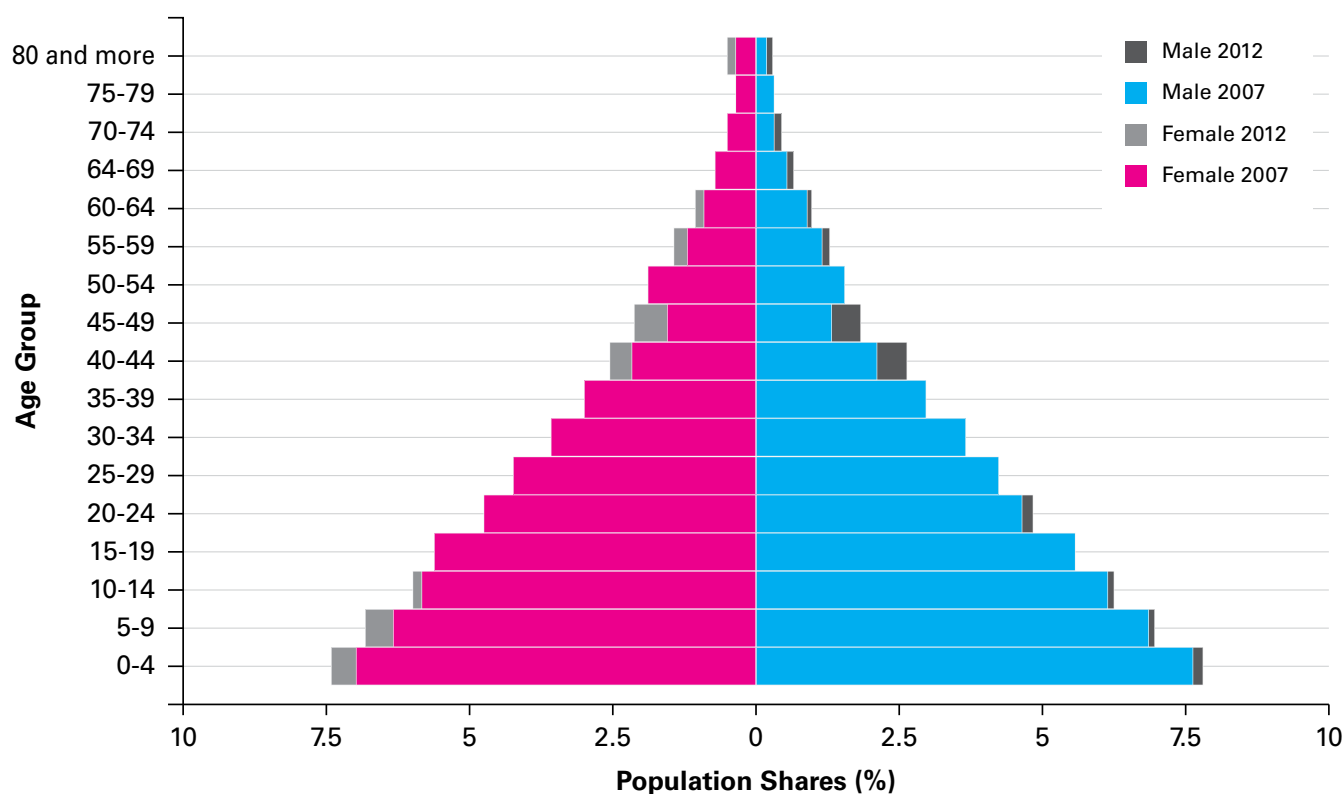
Figure 1.3: Iraq Poverty Rates



Source: Government data acquired in 2016

Iraq has a total population of about 34,205,038 million, more than two-thirds of whom live in urban areas. The population is largely young. Children make up 48% of the population, and youth aged 18-29 represent another 20%. Administratively, Iraq is a federal parliamentary republic consisting of 18 governorates (or provinces) and 120 districts. Three governorates form the autonomous region of Kurdistan in the north.

Figure 1.4: Population Pyramids, 2007-2012



Source: UNICEF estimates in 2007 - 2012 IHSES

Decades of conflict and social and economic instability has left Iraq's 16.2 million children facing increased challenges to fulfilling their rights and achieving their full potential. According to the last Multiple Indicator Cluster Survey (UNICEF 2011),<sup>1</sup> 5.3 million children in Iraq, or one in three, were deprived of at least three of their rights to health, nutrition, education, protection, and stable access to shelter, water and sanitation.

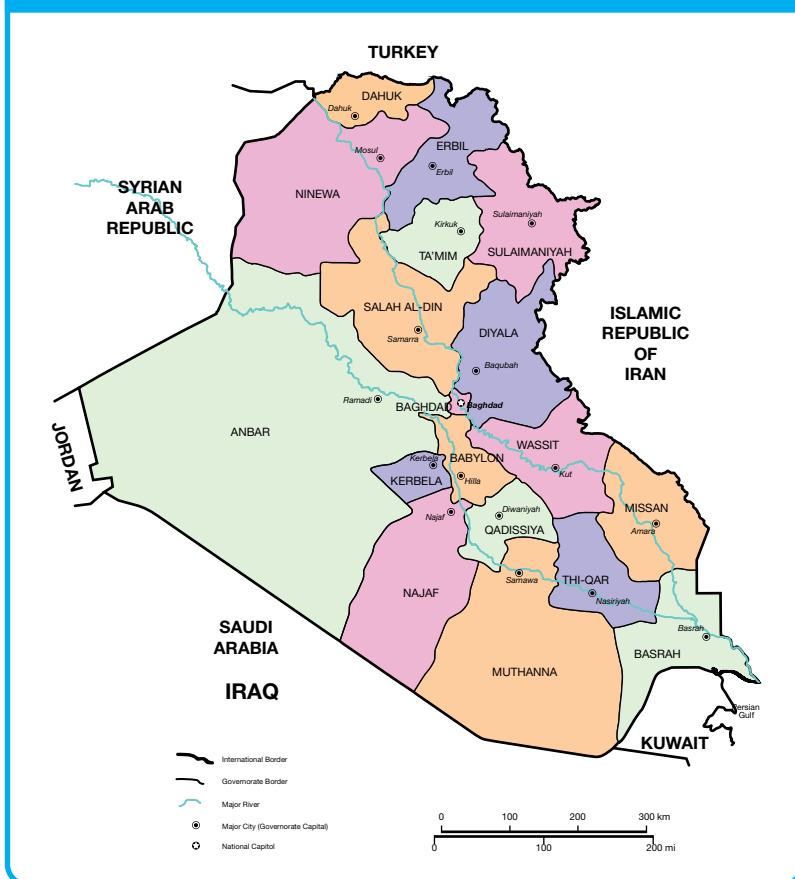
## 1.2 Child Poverty and the Poverty Reduction Strategy

The Iraqi government is committed to addressing deprivations and vulnerabilities faced by children, an issue that is crucial for the success of Iraq's efforts to eradicate poverty and achieve equitable human and economic development. Iraq was among the early signatories to the Convention on the Rights of the Child,<sup>2</sup> and the Gol has renewed its commitment to and vision for children's rights in the Iraq National Development Plan (NDP) for 2013-2017.<sup>3</sup>

The Gol reviewed its 2010-2014 Poverty Reduction Strategy (PRS-1),<sup>4</sup> to assess the country's current income poverty status, and review the economic trends as a basis for developing PRS-2 for 2017-2021. The High Committee for Poverty Reduction Policies and the Ministry of Planning (MoP) agreed to mainstream child poverty outcomes in the new PRS-2 for 2017-2021.

The Gol, supported by UNICEF, aims to address both monetary and non-monetary child poverty in the upcoming PRS-2 2017-2021 by mainstreaming child poverty and deprivations into health, education and social protection pillars of the PRS-2.

Figure 1.5: Map of Iraq's Governorates



Source: Government of Iraq

## 1.3 Internal Displacement

As of December 2016, half of the 3.1 million internally displaced persons (IDPs) in Iraq are children. IDPs live in rented accommodations (45%), host communities (22%), camps (13%), unfinished and abandoned buildings (7.5%), informal settlements (4.5%) and religious buildings (3.2%). The majority of IDPs are living in host communities in their Governorate of Origin and in the Kurdistan region putting increasing pressure on local services including schools, water and sanitation, solid waste management, health facilities and competition for jobs.

The ongoing conflict disrupted access to the social safety net including the PDS, a universal food ration system started in 1990 and still currently accessed by most Iraqis. For instance, in the governorates of Anbar and Nineawa, the two governorates most affected by the war, 81% and 77% (respectively) of the population accessed food rations from the PDS, compared to a national average of 96.5% coverage. Since distribution is based on residence, internally displaced people lose a large part of their caloric intake when they move.

1 See UNICEF Iraq Country Office, Iraq Central Statistical Organization, Kurdistan Region Statistical Office (2011) report, "Monitoring the situation of children and women – Iraq Multiple Indicator Cluster Survey 2011: Final report"

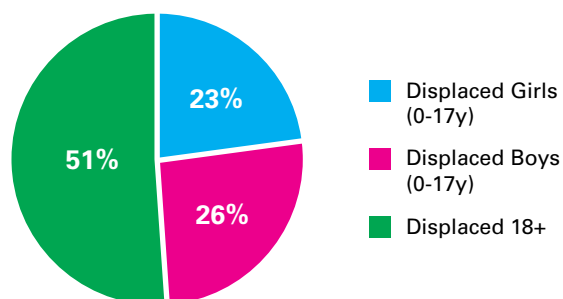
2 (Ratified by Iraq on 15 June 1994)

3 Republic of Iraq, Ministry of Planning (2013) "National Development Plan 2013 – 2017: Executive Summary"

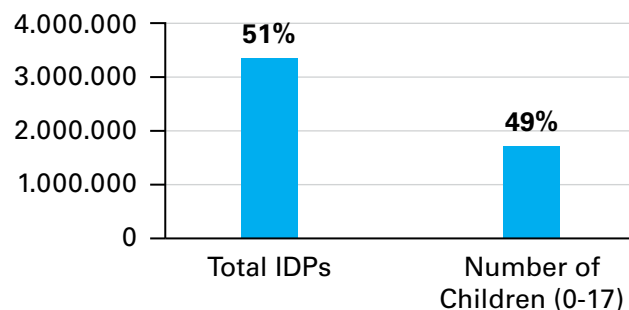
4 Republic of Iraq, Ministry of Planning and Development Cooperation/Kurdistan Region Government-Ministry of Planning/High Committee for Poverty Reduction Policies (2009) "National Strategy for Poverty Reduction"

**Figure 1.6: Percentage and Number of Internally Displaced People**

**% Of Internally Displaced Children (0-17 years)  
August 2016**



**Number of IDP Children in Iraq  
August 2016**



Source: IOM monthly data

This report – a comprehensive analysis of child poverty and its trends (2012/2017) – was produced as a key input into the formulation of an evidence-based and child-sensitive PRS-2.<sup>5</sup> UNICEF presented the findings of this report at the request of the GoI and the World Bank during the PRS-2 development workshop in Erbil in October 2016. This report puts forward the results of the analysis on child poverty and advances a series of evidence-based policy recommendations, inviting partners and counterparts into a policy dialog for the realisation of all children's rights in Iraq. No other household survey for the measurement of poverty has been conducted in Iraq since this child poverty analysis was done in 2013/14 based on the 2012 IHSES.

<sup>5</sup> While the publication of the report was delayed, data validation of the report with the technical team in the Ministry of Planning and Iraq's Central Statistical Organization was done in 2015.

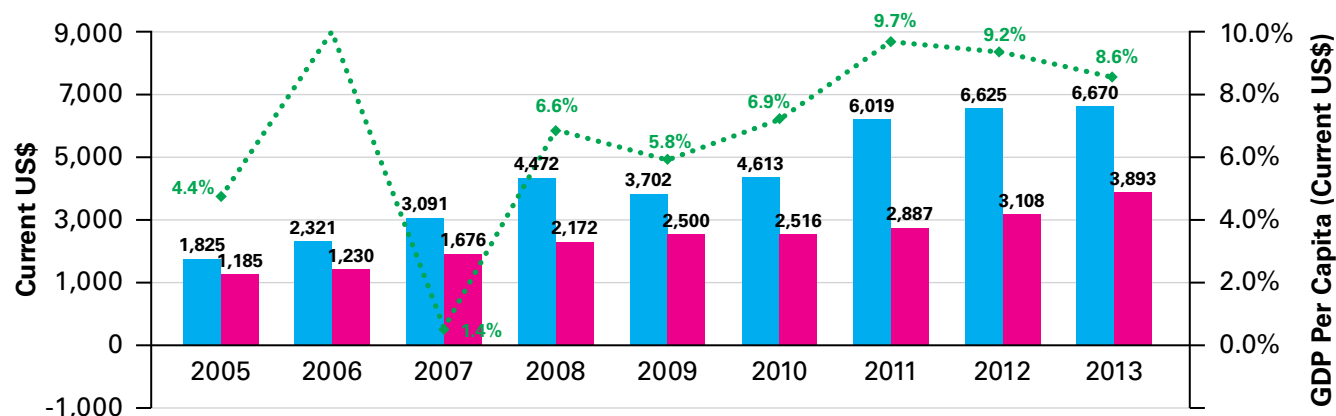
## 2 Growth, Inequality and Poverty Trends

### 2.1 Rapid and Unequal Economic Growth from 2007 to 2012

Between 2007 and 2012 Iraq experienced buoyant economic growth, according to the System of National Accounts (SNA). Cumulatively GDP grew by 64%, with an average per capita growth rate of 7.6% per year during this time period. This is a remarkable pace, and it was accompanied by a rapid population growth of +2.5% per year. The SNA shows that the accelerated economic growth resulted in an equivalent improvement in standard of living, as captured by an increase in private consumption, on average, by 9.4% per year.

Household Per Capita Expenditure (PCE) increased by an average of 5.5% per annum, equivalent to an increase of 45,000 ID/person/month between 2007 and 2012.<sup>6</sup> In 2012, large geographical disparities in PCE were evident among Iraqi governorates and regions. The southern governorates had the lowest levels of PCE, while the northern governorates of the Kurdistan region and central Iraq had the highest.<sup>7</sup>

Figure 2.1: GDP Growth, Per Capita GDP and Private Consumption - 2005-2013



Source: System of National Accounts, Iraq Central Statistical Organization

Table 2.1: Growth in PCE 2007-2012

	PCE 2012 (ID/Person/Month)	Average Annual Growth Rate 2007-2012 (%)
Baghdad	201,400	5.7
Dahuk	233,300	4.3
Ninewa	149,200	2.8
Sulaimaniyah	303,000	3.4
Kirkuk	205,700	5.9
Erbil	282,700	3.9
Diyala	174,500	8.5

6 The Iraq Household Socio-Economic Survey (IHSES) is a household survey implemented jointly by Iraq's Central Statistical Organization, Kurdistan Region Statistics Office, and the World Bank in 2007 and in 2012.

7 The geographical differences are statistically significant even after controlling for spatial price differences across governorates.

Table 2.1: Growth in PCE 2007-2012

	PCE 2012 (ID/Person/Month)	Average Annual Growth Rate 2007-2012 (%)
Anbar	172,100	4.8
Babil	185,600	9.4
Kerbela	178,300	8.2
Wassit	167,100	6.4
Salah al-Din	183,200	9.7
Najaf	211,800	9.1
Qadissiya	129,200	1.3
Muthanna	117,600	2.2
Thi-Qar	140,400	3.3
Missan	132,700	1.3
Basrah	181,000	8.2
Kurdistan Region	279,000	3.7
Baghdad	201,400	5.8
Rest of Iraq	167,800	6.0
Urban	207,700	5.5
Rural	152,900	6.5
<b>Iraq</b>	<b>190,400</b>	<b>5.5</b>

However, the economic growth from 2007-2012 was also accompanied by an increase in inequality. There was an overall divergence between the less and more developed governorates. The benefit of economic growth did not spread equally in the country between 2007 and 2012. At the national level, the Gini coefficient,<sup>8</sup> a measure of income inequality, has increased from 28.5% in 2007 to 29.5% in 2012. Although inequality has increased, it is worth noting that the level of inequality in Iraq remains among the lowest in the region.

In Iraq, despite the increase in inequality, the positive economic growth has led to fall in poverty rates. The incidence of poverty decreased from 22.9% in 2007 to 18.8% in 2012. From 2007-2012, poverty also decreased in depth and severity. The poverty gap index, a measure of the intensity of poverty among the poor, decreased from 4.5% in 2007 to 4.1% in 2012. Similarly, the squared poverty gap index, a measure sensitive to changes in both the mean PCE of the poor and the inequality of PCE among the poor, decreased from 1.39% to 1.36%.

Poverty reduction processes have not been uniform across the country. While most governorates experienced general progress, there are a few notable exceptions. For example, the fall in poverty in Baghdad was small and statistically insignificant. The same is true in the Kurdistan region, an area with the lowest poverty rates, where the fall in poverty has not been statistically significant, except in Dahuk. Similarly, the increase of the poverty rate in Muthanna from 48.8% to 52.3% is not statically significant.

<sup>8</sup> The Gini coefficient is a measure of the deviation of the distribution of income among individuals or households within a country from a perfectly equal distribution. A value of 0 represents absolute equality, a value of 100 absolute inequality.



**Table 2.2: Poverty Incidence (%) by Geographic Area, 2007-2012**

Area	2007	2012	Difference	t-stat	Significance
Dahuk	9.3	5.8	-3.5	-2.47	**
Ninewa	23.0	34.2	11.3	3.95	***
Sulaimaniyah	3.3	2.0	-1.3	-1.90	*
Kirkuk	9.8	9.1	-0.8	-0.33	
Erbil	3.4	3.6	0.2	0.26	
Diyala	33.1	20.5	-12.6	-3.94	***
Anbar	20.9	15.3	-5.6	-2.67	***
Baghdad	12.8	12.0	-0.8	-0.55	
Babil	41.2	14.5	-26.7	-8.08	***
Kerbela	36.9	12.3	-24.6	-4.46	***
Wassit	34.8	25.9	-8.8	-3.14	***
Salah Al-Din	39.9	16.5	-23.4	-9.01	***
Najaf	24.4	10.7	-13.7	-3.77	***
Qadissiya	35.0	43.8	8.7	3.32	***
Muthanna	48.8	52.3	3.5	1.21	
Thi-Qar	32.0	40.7	8.8	3.09	***
Missan	25.3	42.1	16.7	5.36	***
Basrah	32.1	14.7	-17.3	-4.12	***
Kurdistan Region	4.7	3.5	-1.2	-2.43	**
Baghdad	12.8	12.0	-0.8	-0.55	
Rest Of Iraq	30.2	24.3	-5.9	-6.56	***
Rural	39.3	30.4	-8.9	-7.96	***
Urban	16.1	13.4	-2.7	-3.32	***
<b>Iraq</b>	<b>22.87</b>	<b>18.8</b>	<b>-4.07</b>	<b>-6.12</b>	<b>***</b>

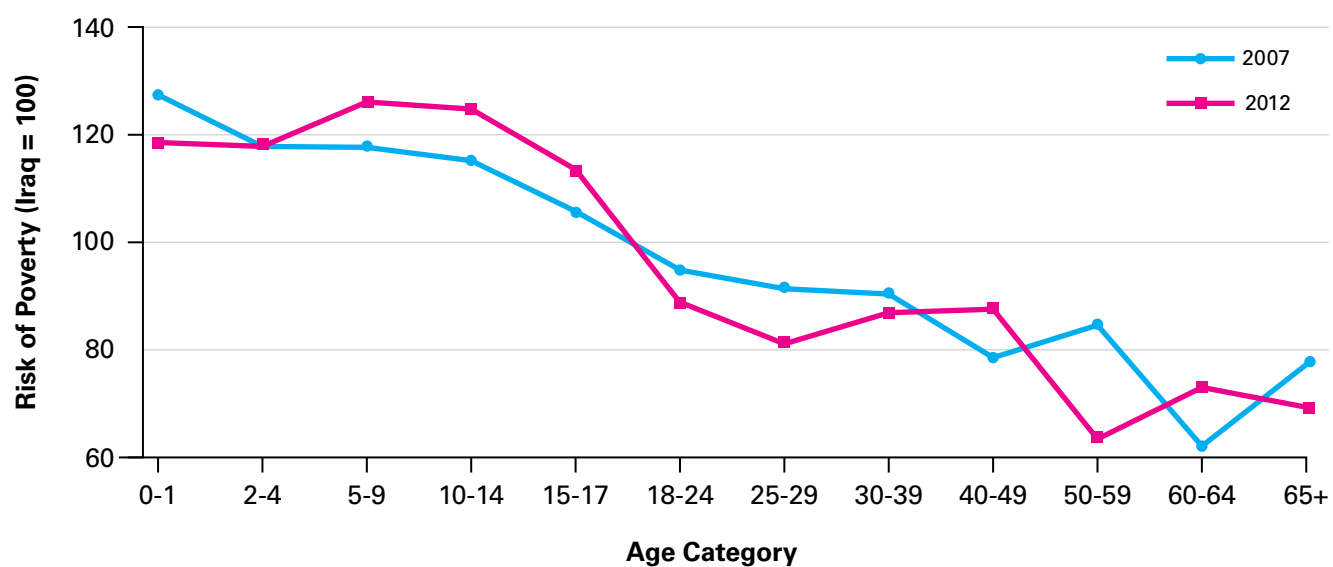
Source: UNICEF estimates on 2007 and 2012 IHSES. Notes: Standard errors have been bootstrapped taking into account the complex sampling design of the two surveys. Appendix A contains the details. Asterisks in the last column denote confidence level of the change in poverty: \*\*\* corresponds to 99%, \*\* to 95%, \* to 90%

## 2.2 Children's Risk of Poverty

Children — defined as individuals under the age of 18 — have the highest risk of poverty across all age groups in the population. A key finding of this report is that child poverty risk increased significantly between 2007 and 2012, despite a drop in the overall poverty rate. In 2012, children faced a 25% higher risk of poverty, on average, than other age groups in the population, compared to 17% in 2007. The risk of poverty in Iraq declines with age.<sup>9</sup> Both findings lead to the conclusion that children deserve the highest priority on the agenda of policymakers engaged in designing anti-poverty strategies.

<sup>9</sup> The same trend holds for both survey years.

Figure 2.2: Poverty Risks by Age, 2007-2012



Source: UNICEF estimates on 2007 and 2012 IHSES

### 3 Child Monetary Poverty

Iraq's population is disproportionately weighted towards children. By 2012, Iraq's 16.3 million children, defined as 18 years old or younger, represented 48% of its total population (IHSES 2012). The absolute number of children in Iraq increased by 2.1 million between 2007 and 2012, and nearly nine out of ten Iraqi households have at least one child.

Between 2007 and 2012, the absolute incidence of poverty among children decreased for all age categories. The national poverty headcount ratio for children decreased from 26.5% in 2007 to 22.9% in 2012. However, Iraq's rapid population growth of +2.5% to 3% per year, accompanied by a total fertility rate of 4.86 (Fayyad 2012), caused the total number of children to increase by more than two million. The net impacts of these trends are twofold. Firstly, between 2007 and 2012, the absolute number of poor children has remained constant (from 3.74 to 3.70 million). Secondly, the share of children, as a percentage, of all poor in Iraq has actually increased—from 54% in 2007 to 57.6% in 2012.

This chapter examines the distribution of child poverty and factors that contribute to increases and decreases in child poverty over the period 2007 to 2012. Overall, child poverty has remained stable, with a great deal of variance across governorates. The risk of child poverty, however, has increased. Rural children tend to be slightly poorer than their urban counterparts, and girls and boys have similar risks of poverty. Parents' workforce participation is a key predictor of child poverty, and there were high child poverty rates where the head of household is illiterate. Similarly, larger household sizes predicted higher levels of child poverty. While there are relatively low numbers of extreme poor children, the numbers are on the rise, and children are disproportionately affected.

**Table 3.1: Poverty Headcount Rates and Share by Age, 2007-2012**

Age Category	2007			2012		
	Poor	Poverty Headcount (%)	Poverty Share (%)	Poor	Poverty Headcount (%)	Poverty Share (%)
0-1	528,555	29.0	7.7	466,059	22.2	7.2
2-4	691,244	26.9	10.0	677,248	22.2	10.5
5-9	1,073,128	27.0	15.6	1,104,093	23.7	17.2
10-14	942,957	26.1	13.7	977,188	23.6	15.2
15-17	507,678	23.8	7.4	477,679	21.3	7.4
18-24	865,431	21.3	12.6	763,213	16.5	11.9
25-29	518,458	20.5	7.5	377,374	15.0	5.9
30-39	803,965	20.2	11.7	647,950	16.1	10.1
40-49	375,915	17.5	5.5	499,898	16.2	7.8
50-59	329,436	18.9	4.8	204,235	11.5	3.2
60-64	74,483	13.6	1.1	91,217	13.4	1.4
65+	172,397	17.3	2.5	144,084	12.7	2.2
<b>All ages</b>	<b>6,883,647</b>	<b>22.9</b>	<b>100.0</b>	<b>6,430,238</b>	<b>18.9</b>	<b>100.0</b>
<b>Children</b>	<b>3,743,562</b>	<b>26.5</b>	<b>54.4</b>	<b>3,702,267</b>	<b>22.9</b>	<b>57.6</b>

Source: UNICEF estimates in 2007 and 2012 IHSES

The poverty headcount rate and share by age indicate that children of all ages have benefited from efforts to reduce poverty from 2007 to 2012, with the notable exception of children aged 5-14. The proportion of children in poverty within this age group increased from 29.2% in 2007 to 32.4% in 2012, largely due to the demographic effect of population growth as more children have been born into poverty.

The depth of poverty (as measured by the poverty gap index) has diminished over time, but to a lesser extent than the incidence of poverty. This holds true especially for children between two and four years old. There are signs of deterioration in the living standards of the children between the survey years (2007-2012), in particular, the severity of poverty (poverty gap squared) failed to decrease for the youngest segments of the population. This suggests that the inequality of the distribution of income among the poor has increased, and with it the likelihood of observing pockets of extreme poverty among children.

**Table 3.2: Incidence, Depth and Severity of Poverty by Age, 2007-2012**

2007				2012		
Age Category	Incidence	Depth	Severity	Incidence	Depth	Severity
0-1	29.0	5.5	1.6	22.1	4.9	1.6
2-4	26.9	5.7	1.8	22.0	4.9	1.6
5-9	27.0	5.7	1.8	23.6	5.3	1.8
10-14	26.1	5.4	1.7	23.5	5.3	1.8
15-17	23.8	4.6	1.4	21.2	4.6	1.5
18-24	21.3	4.1	1.2	16.4	3.4	1.1
25-29	20.5	3.9	1.2	14.9	3.2	1.0
30-39	20.2	3.8	1.1	16.0	3.6	1.2
40-49	17.5	3.4	1.0	16.2	3.4	1.1
50-59	18.9	3.5	1.1	11.5	2.3	0.7
60-64	13.6	2.6	0.8	13.3	2.7	0.9
65+	17.3	3.5	1.1	12.6	2.8	0.9
<b>Population</b>	<b>22.9</b>	<b>4.5</b>	<b>1.4</b>	<b>18.8</b>	<b>4.1</b>	<b>1.4</b>
<b>Children</b>	<b>26.5</b>	<b>5.4</b>	<b>1.7</b>	<b>22.9</b>	<b>5.1</b>	<b>1.7</b>

Source: UNICEF estimates in 2007 and 2012 IHSES. Note: "Incidence" refers to the headcount ratio, "Depth" to the poverty gap index, and "Severity" to the poverty gap squared index. See Foster, Greer and Thorbecke (1984) and Ravallion (1994)

### 3.1 Geographic Differences in Child Poverty Rates

The incidence of child poverty varies a great deal among Iraqi governorates. This holds true in both survey years. In 2012, the proportion of children classified as poor ranged from less than 10% in Sulaymaniyah (2.9%), Erbil (5.1%) and Dahuk (7.5%) to more than 45% in Muthanna (56.5%), Qadissiya (48%), Missan (47%) and Thi-Qar (46.4%). The geographical gradient is impressive and even more so if governorates are broken down by urban and rural areas.

Looking at only the changes that are statistically significant, there are still big geographical disparities. At one extreme, there are governorates where child poverty rates have decreased dramatically, such as Babil (-30.7%), Kerbela (-26%) and Salah Al-Din (-25.1%). At the other extreme, there are governorates where the incidence of child poverty has increased, such as Missan (+17.8%), Ninewa (+12.2%) and Thi-Qar (+11%).

Such an unequal distribution in the regional poverty rates suggests that economic growth benefits did not flow equally across the different regions. This is a legitimate policy concern and fighting regional poverty differences is a particularly relevant dimension in the Iraqi context, given the importance of fostering social cohesion in the country.

**Table 3.3: Children Headcount Poverty Rates (%) by Governorate, 2007-2012**

Area	2007	2012	Difference	t-stat	Significance
Baghdad	14.4	14.9	0.5	0.28	
Dahuk	11.8	7.5	-4.2	-2.26	**
Ninewa	25.9	38.5	12.2	4.15	***
Sulaimaniyah	4.8	2.9	-1.9	-1.71	*
Kirkuk	11.3	12.0	0.7	0.26	
Erbil	4.7	5.1	0.5	0.48	
Diyala	39.2	24.5	-14.7	-3.34	***
Anbar	23.4	17.4	-6.0	-2.47	**
Babil	47.8	17.1	-30.7	-7.91	***
Kerbela	41.8	15.8	-26.0	-3.88	***
Wassit	39.7	29.3	-10.6	-3.14	***
Salah al-Din	44.3	19.3	-25.1	-8.89	***
Najaf	29.6	14.1	-15.6	-3.10	***
Qadissiya	39.9	48.0	7.7	2.63	***
Muthanna	54.0	56.7	2.4	0.77	
Thi-Qar	35.2	46.4	11.0	3.83	***
Missan	29.0	47.1	17.8	4.95	***
Basrah	34.3	18.8	-15.7	-3.87	***
KR-I	6.5	4.9	-1.6	-2.32	**
Baghdad	14.3	14.9	0.6	0.34	
Rest of Iraq	34.1	28.4	-5.9	-5.85	***
Rural	42.6	34.1	-8.8	-6.74	***
Urban	18.8	16.7	-2.2	-2.09	***
<b>Iraq</b>	<b>26.5</b>	<b>22.9</b>	<b>-3.8</b>	<b>-4.63</b>	<b>***</b>

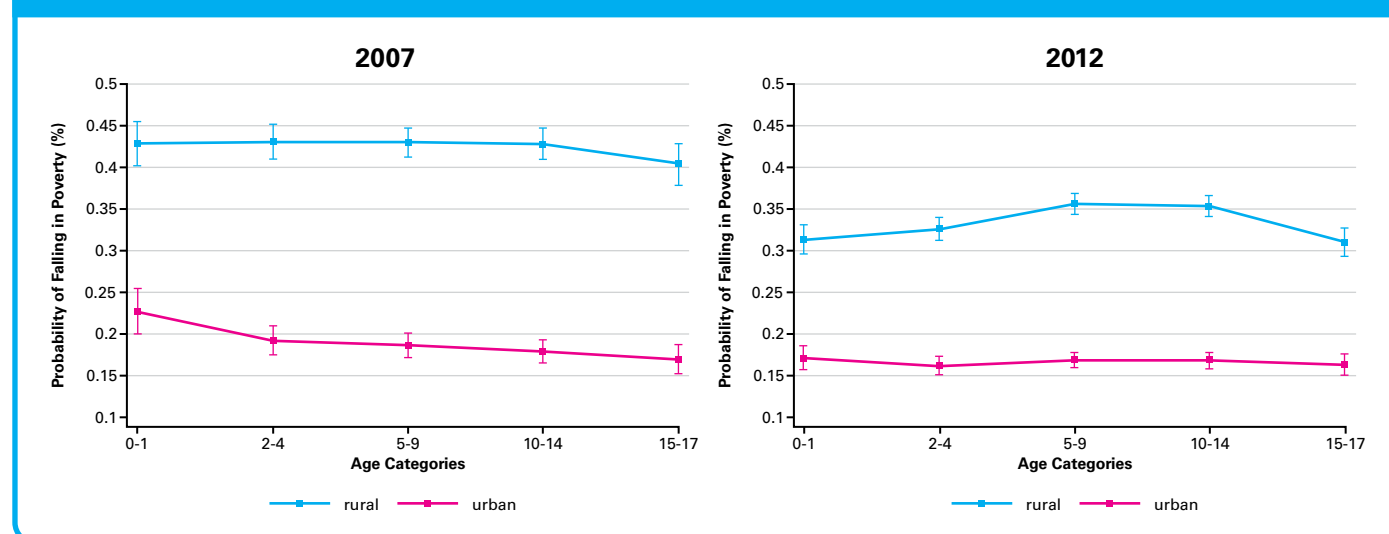
Source: UNICEF estimates in 2007 and 2012 IHSES. Notes: standard errors have been bootstrapped taking into account the complex sampling design of the two surveys. Appendix A contains the details. Asterisks in the last column denote the confidence level of the change in poverty: \*\*\* corresponds to 99%, \*\* to 95%, \* to 90%

## 3.2 Urban-Rural Divisions and Poverty Risk in Children

There are numerous reasons for regional imbalances in poverty rates and trends. Children living in urban areas in Iraq have a significantly lower poverty risk than children living in rural areas. In 2007, children in rural areas had a poverty risk more than double that of their urban peers. The “urban advantage” narrowed between 2007 and 2012, and in rural areas the risk of poverty shows a tendency to increase from infancy all the way up to the age of 14. In rural areas, the risk of poverty does not vary significantly during a child’s life. A mild decline of poverty risk with age is found in urban areas, possibly due to higher chances to engage in the informal sector.

While the youngest children in rural areas are clearly in need, there are also deprivations and exclusions specific to young children in the urban context. In an environment of high population density, for instance, toilets, ventilation, drainage, open space for play and availability of recreational facilities are all important factors in a child’s well-being. Overcrowded homes and insecurity at the neighbourhood level restricts the mobility of children and makes it difficult for them to meet with others and take part in their communities.

Figure 3.1: Poverty Risks by Age and Urban-Rural Areas, 2007 and 2012

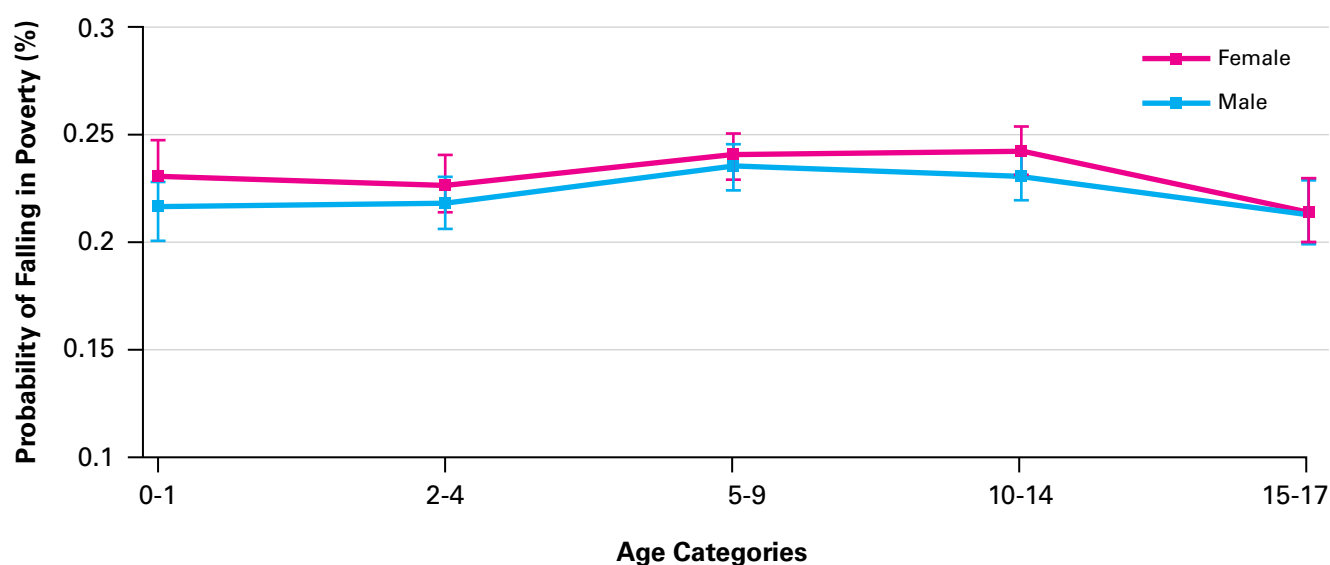


Source: UNICEF estimates in 2012 IHSES. Note: Appendix A describes the methodology

## 3.3 Gender and Poverty Risks in Children

Our analysis shows that the difference in the risk of poverty between boys and girls in Iraq is small and statistically insignificant. The predicted values of the graph have been obtained by estimating simple regression models (see Appendix A), where we allowed poverty risk to vary according to 1) the age of the children and 2) their gender. Girls tend to have a slightly higher risk of poverty than boys across all age groups; however, the difference is not significant and we conclude that the poverty risk is similar for boys and girls.

Figure 3.2: Poverty Risks by Age and Gender, 2012



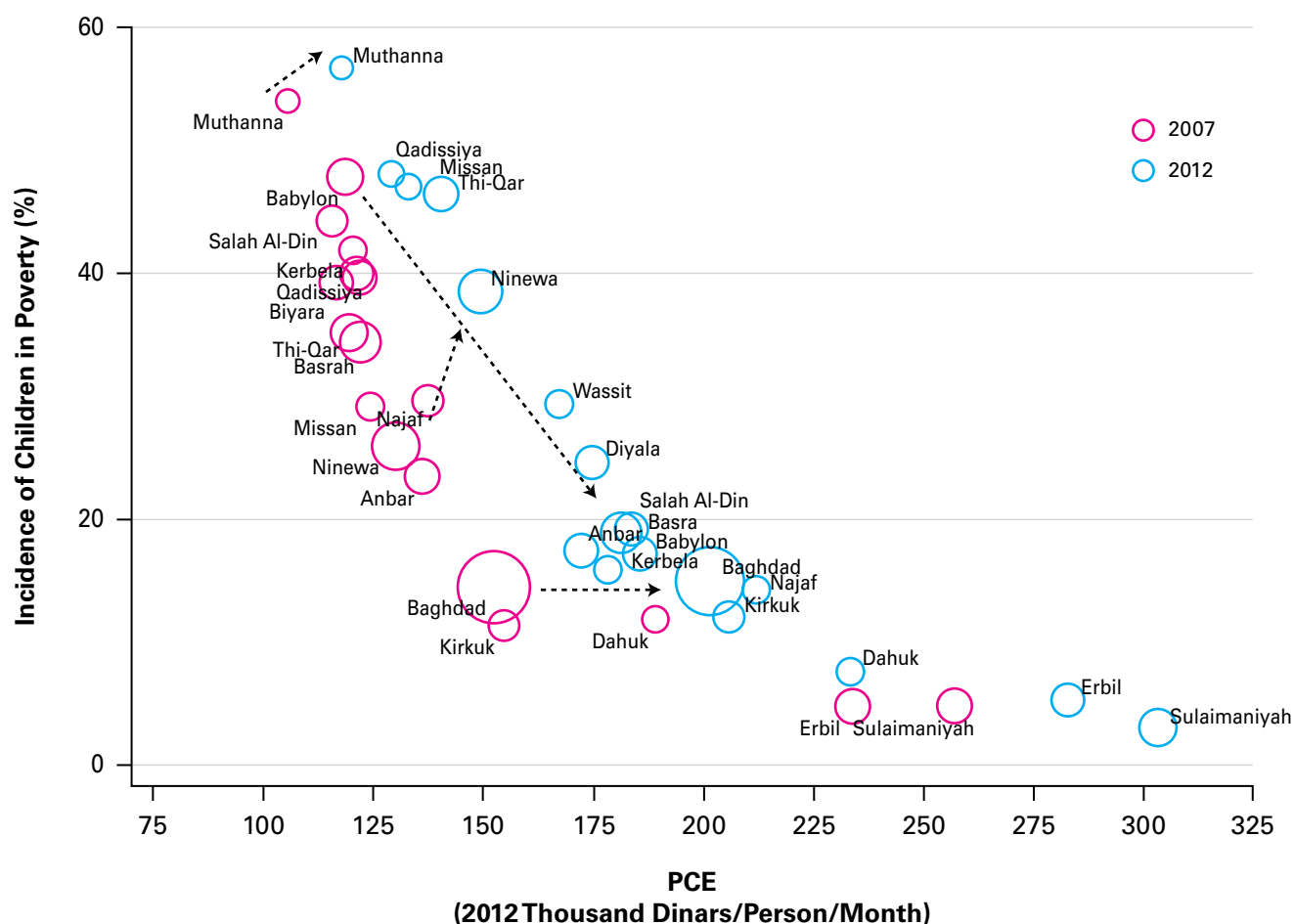
Source: UNICEF estimates in 2012 IHSES

### 3.4 Poverty Risks in Children by Governorate

The geographical dimension of child poverty deserves in-depth analysis. For instance, in 2007, with 54% of the children living in poor households, Muthanna ranked highest in the country in terms of incidence of child poverty. The outstanding position of Muthanna is clearly visible in Figure 3.3. Despite a good average growth rate, in 2012 the incidence of child poverty increased, suggesting that Muthanna deserves a high priority in the poverty reduction strategy agenda.

In another example, poor children in Ninewa almost doubled, from 382,118 children in 2007 to 662,640 in 2012. In contrast, Babil— with the highest rate of poverty reduction— reduced the number of poor children by half, from 366,047 children to 158,684 children. Baghdad did well in terms of growth but not when it came to distributing the benefits to children. In Baghdad, the share of poor children remained remarkably stable over time (approximately half a million children, corresponding to 14-15% of all children in Baghdad).

Figure 3.3: Child Poverty in Motion, 2007 and 2012

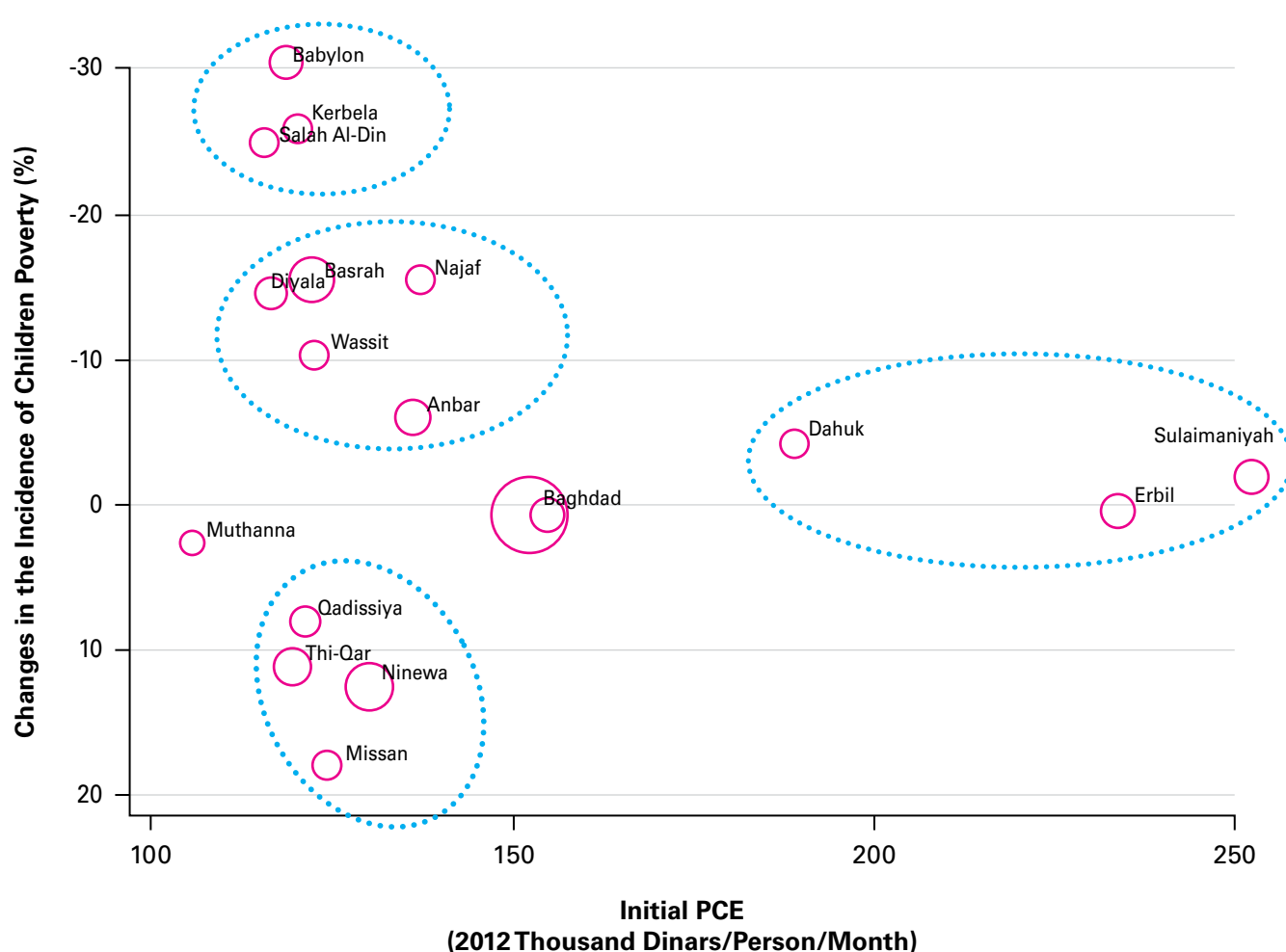


Source: UNICEF estimates in 2007 and 2012 IHSES. Note: each bubble is a governorate (the size of the circle is proportional to population). Red bubbles refer to 2007, green bubbles to 2012. When a bubble shifts horizontally, left-to-right, the interpretation is that average living standards in that governorate have increased; when a bubble shifts vertically, e.g., top-to-bottom, the interpretation is that the incidence of child poverty has decreased. The figure captures the wide a variety of governorate trajectories

Between 2007 and 2012, some poor governorates improved child poverty rates and some did not. In Figure 3.4, in the upper-left corner of the graph are the governorates with the lowest living standards in 2007 but that experienced the largest poverty reduction between 2007 and 2012. Babil, Kerbela and Salah Al-Din managed to decrease child poverty rates. In the bottom-left corner of the graph, Qadissiya, Thi-Qar, Ninewa and Missan failed to distribute the benefits of economic growth to children and child poverty increased between 2007 and 2012. The KR-I governorates which are richer on average than the rest of Iraq showed mediocre poverty reduction. Basrah, Diyala, Najaf, Wassit and Anbar governorates show a decrease in child poverty rates, even if the pace of the reduction is not as pronounced as in the first cluster.



Figure 3.4: Poverty Catching Up, 2007-2012

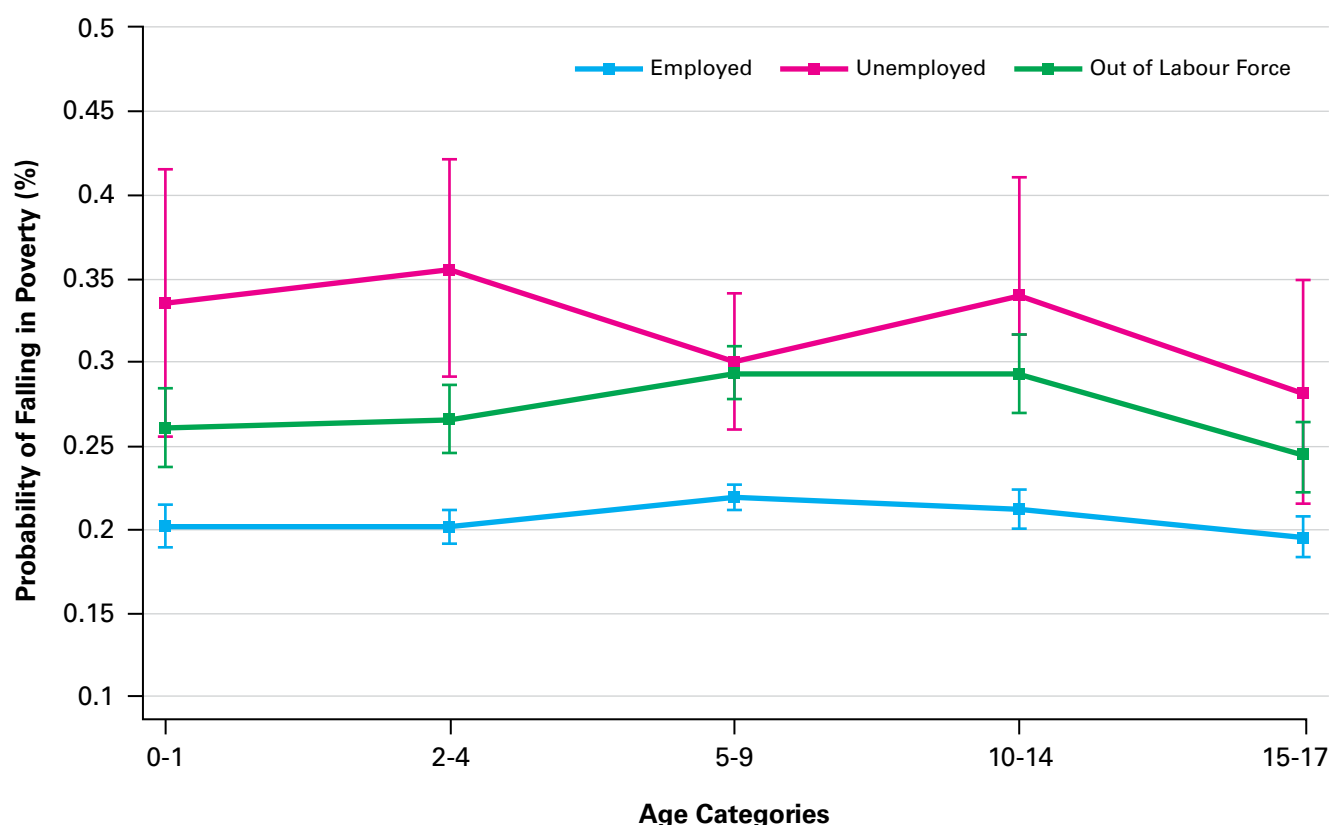


Source: UNICEF estimates in 2007 and 2012 IHSES

### 3.5 Parents' Labour Force Participation and Poverty Risks in Children

The labour force participation status of household heads has a significant impact on the probability of a child falling into poverty. The poverty risk changes with the age of the child and the occupational status of the household head. Unemployed parents or out of labour force parents increase the poverty risk of children by at least 15 percentage points. There is a 20% risk of poverty among children with employed parents compared to a 35% risk of poverty among children for unemployed parents.

Figure 3.5: Poverty Risk by Age and Labour Force Status of the Household Head, 2012



Source: UNICEF estimates in 2012 IHSES

The largest share of poor children live in households headed by individuals employed in agriculture. While the poverty rate among children living agriculture has decreased from 43.9% in 2007 to 35.9% in 2012, the poverty risk of children has barely changed (from 175 to 169). In fact, in the construction sector, often separated by a blurred line from the agricultural sector, the risk of poverty has increased significantly (from 130 in 2007 to 164 in 2012).

Table 3.4: Child Poverty Rates by Economic Sector of Activity of the Household Head, 2007-2012

	2007			2012		
	Population	Headcount (%)	Poverty Risk	Population	Headcount (%)	Poverty Risk
Agriculture	1,843,042	43.9	175	1,416,769	35.9	169
Mining	1,012,385	25.0	99	1,340,804	13.9	66
Construction	1,168,444	32.7	130	1,367,350	34.8	164
Trade	2,011,785	19.2	76	1,855,085	13.4	63
Transport	1,546,516	23.3	92	1,871,808	26.7	126
Financial interm.	579,172	10.8	43	1,548,524	15.7	74

**Table 3.4: Child Poverty Rates by Economic Sector of Activity of the Household Head, 2007-2012**

	2007			2012		
	Population	Headcount (%)	Poverty Risk	Population	Headcount (%)	Poverty Risk
Public admin.	1,168,578	15.4	61	1,169,922	16.5	78
Education	601,343	18.9	75	636,904	11.8	56
Health	324,303	16.7	66	264,066	9.9	47
Other	645,849	21.9	87	1,135,248	19.6	92
<b>Total</b>	<b>10,901,417</b>	<b>25.2</b>	<b>-</b>	<b>12,606,480</b>	<b>0.0</b>	<b>-</b>

Source: UNICEF estimates in 2007 and 2012 IHSES

### 3.6 Education and Poverty Risks in Children

Uneducated parents are associated with higher poverty risks for their children. Children living in households where adults are uneducated face the highest risk of poverty. The risk of poverty decreases when the level of education of the household head increases. For example, the completion of secondary education by the household head abates child poverty risk by about 20% when compared to the children living in households with illiterate parents in 2012. Remarkably, the structure of the poverty risks associated with education has remained stable over time.

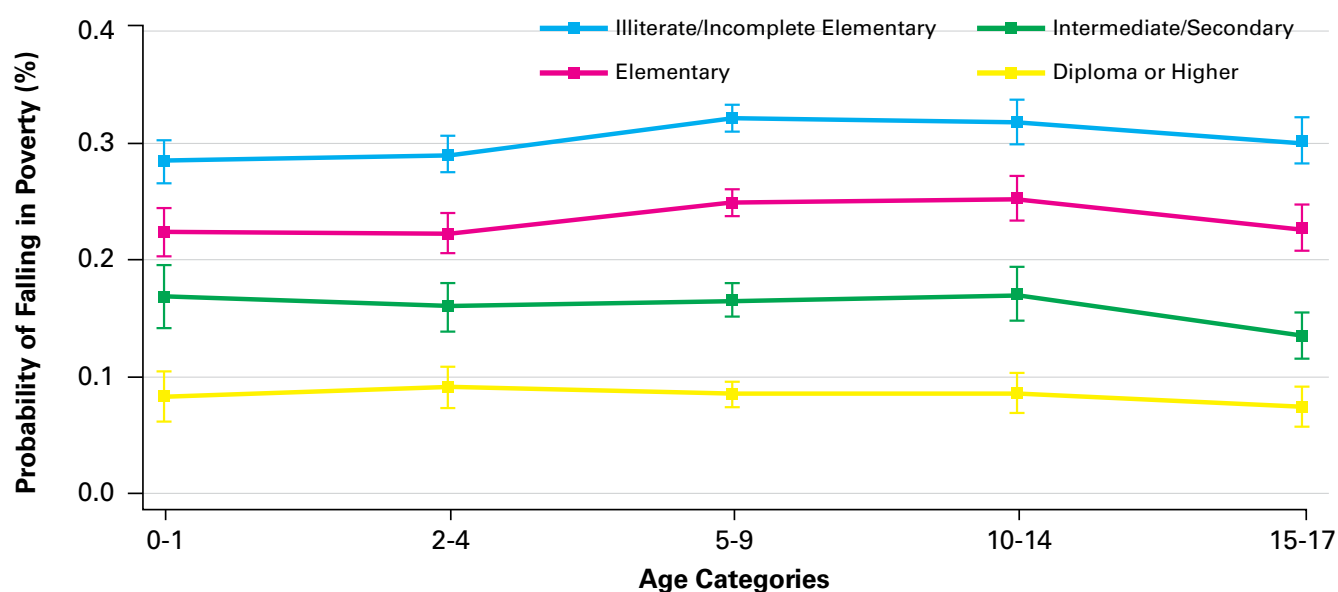
**Table 3.4: Child Poverty Rates by Economic Sector of Activity of the Household Head, 2007-2012**

	2007			2012		
	Population	Headcount (%)	Poverty risk	Population	Headcount (%)	Poverty risk
Illiterate	2,939,864	36.3	137	3,492,177	33.3	146
Incomplete elem.	2,122,947	33.1	125	2,523,401	27.7	121
Elementary	4,014,890	28.7	108	4,975,919	23.9	104
Intermediate	1,684,758	19.7	74	1,732,564	18.2	80
Secondary	1,386,904	16.4	62	1,288,100	13.2	58
Diploma	988,693	15.1	57	1,117,457	10.7	47
Bachelor	960,880	11.6	44	1,124,633	5.7	25
Postgraduate	7,850	26.0	98	23,880	29.3	128
<b>Total</b>	<b>14,106,786</b>	<b>26.5</b>	<b>16,278,130</b>	<b>-</b>	<b>22.9</b>	<b>-</b>

Source: UNICEF estimates in 2007 and 2012 IHSES

The probability of being poor changes with the educational level of the head of household and the age of the child. For all age categories, children living in educated households are one third less at risk of poverty than children with uneducated parents. Education is clearly a substantial dimension of fighting poverty in Iraq.

**Figure 3.6: The Poverty Risk of Children as a Function of the Education of the Household Head, 2012**

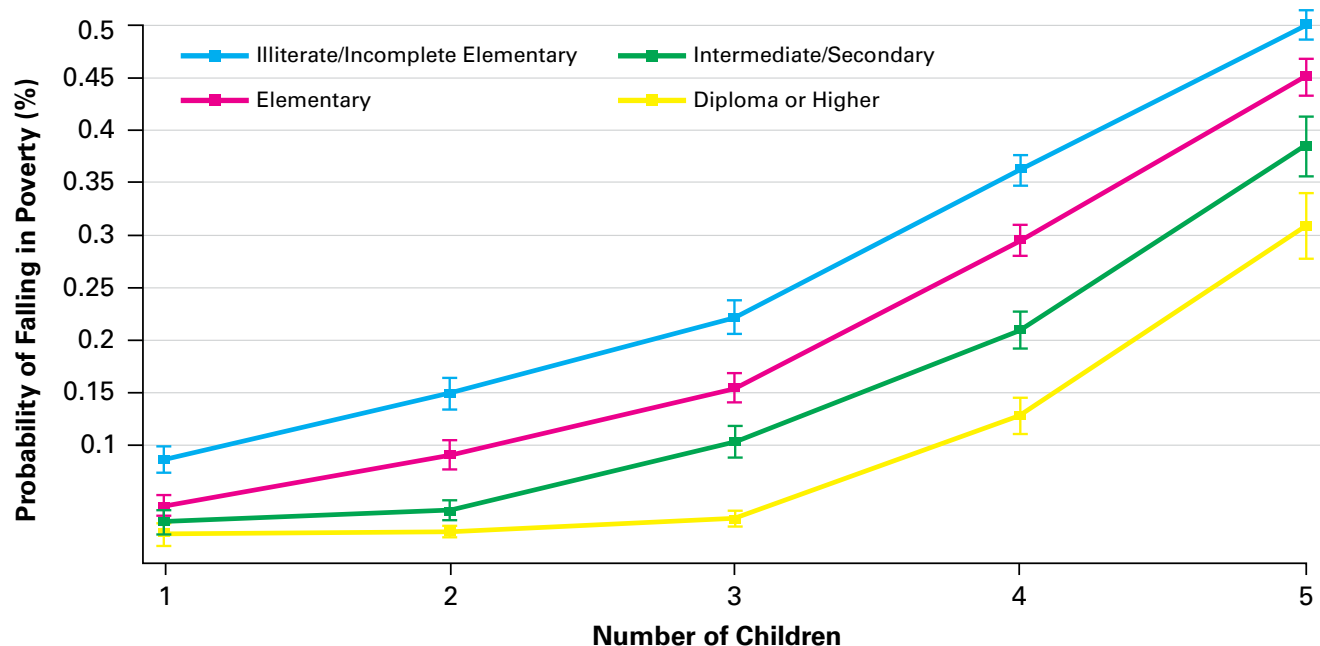


Source: UNICEF estimates in 2012 IHSES

### 3.7 Household Size and Poverty Risks in Children

We looked at the probability of being poor for children living in households with different number of siblings, separately by educational level of the household head. There is a steep gradient of the poverty risks, where irrespective of the educational level of the parents, the risk of a child being poor increases significantly as the number of siblings increases.

**Figure 3.7: The Poverty Risk of Children as a Function of the Education of the Household Head and the Number of Children in the Household, 2012**



Source: UNICEF estimates in 2012 IHSES

### 3.8 Extreme Poverty in Children

The extreme poor are people who fall below the food poverty line. First, both the incidence and the depth of extreme poverty in Iraq are low. This is most likely the effect of the PDS, which provides nearly 1,000 kilocalorie/person/day to nearly the entire Iraqi population (World Bank 2011, CSO 2014).

Second, among the different age groups, children show the highest incidence of extreme poverty. According to UNICEF estimates, the incidence of extreme poverty among children is almost twice as much than among adults. This is clear evidence in support of the claim that children deserve a high position on the agenda of policymakers.

Third, extreme poverty among children is on the rise: between 2007 and 2012 the incidence of extreme poverty has increased for all age categories and more than proportionally for children compared to adults. This is most likely the combined effect of many factors. The general increase in economic inequality is certainly consistent with this finding. The reform of the PDS between 2007 and 2012 meant that a significant reduction in the free provision of food items to the population - in terms of energy, households in 2012 received half of what they used to receive in 2007. All this translates into a surge of the depth of poverty: the poverty gap index has doubled between 2007 and 2012.

### 3.9 Roots and Determinants of Child Poverty

We aimed to estimate the factors that have an impact on the risk of child poverty within the limitations of the data available in IHSES. We modeled the probability  $p$  of a child to be poor as a function of characteristics specific to the child (e.g. age, gender), to the household where the child lives (e.g. educational attainment of the head of the household, household PCE), and to the environment where children live (e.g. governorate of residence, whether in urban or rural area), and calculated the average marginal effects (AMEs) or coefficients that measure the average probability for a child to be classified as poor when a given explanatory variable changes (see Appendix A).

In 2012, the probability of being poor is highest in households headed by breadwinners under 30 years old, generally uneducated (either illiterate or with primary school completed), and in rural large households.

The risk of poverty increases dramatically with both the size of the household and its demographic structure: in particular, the higher the age dependency ratio (here proxied by the total number of children in the family), the higher the poverty risk. Children living in households with 4-5 siblings are twice as likely to be poor than children in households where there is only one child.

Household size and fertility is strictly related to household living standards (i.e., the probability of being poor). This is a complex and dynamic relationship, which is mediated by the so-called economic dependency ratio—the ratio between inactive and active household members.

Labour force participation of adults in the household stands out as a key factor to prevent children from falling into poverty: the risk of poverty decreases dramatically when the number of earners increases in the household. In the absence of economically active adults, children face a probability of being poor as high as 31%. The probability decreases to 20% in the presence of two earners, and further decreases to 10% with five or more earners.

There is a noticeable absence of gender differences when estimating child poverty and across-age gradients are often quite flat. Regression results confirm that while both household- and environment-level factors do explain child poverty risks, child-specific variables do not seem to have a direct impact on the children's poverty status. This was not the case in 2007, when the risk of poverty tended to decrease with the age of the child.

Geography does matter to child poverty in Iraq. According to the regression for 2012, the governorates of Dahuk and Sulaimaniyah have the lowest probability of child poverty in the country (7%). Children in Baghdad have a risk of poverty that is almost triple (20.6%). The poverty risk for children living in Qadissiya, Muthanna, Thi-Qar or Missan is dramatically high, both compared to the KR-I region and by absolute standards, Qadissiya (44.6%), Muthanna (41%), Missan (40%), Thi-Qar (38%), and Diyala (32.6%). These are large and statistically significant effects associated with governorates, not captured by the other variables included in the model.

The comparison between the datasets from 2007 and 2012 does not show major differences in the distribution of child poverty risks among the analysed categories. Households living in urban areas had a significantly lower child poverty risk in 2007 when compared to households from rural area, meaning that in 2012 child poverty risks between urban and rural areas became more similar. Similarly gender, neither of the head of household nor of the child, has a significant effect on child poverty risk. As for differences over time of child poverty risks among governorates, the Kurdistan region still has the lowest risks (with Erbil being a notable exception). The governorates of Diyala and especially those of Babil, Kerbela and Salah al-Din all have reduced the poverty risk between 2007 and 2012, whilst the governorates of Qadissiya, Muthanna, Thi-Qar and Missan show a reverse pattern.

The single most striking feature is the magnitude of the regional disparities in the probability of child poverty. Equally striking is the degree of persistence over time of this geographical effect. Those governorate-specific characteristics need to be examined: area characteristics must drive this pattern, but we have not identified them. Lack of security, for instance, may entail a lower income-generating capacity, which might be consistent with the observed geographic pattern of poverty rates. A poor endowment of local infrastructures may be another factor at play. In order for speculation to be replaced by facts, further analysis is required on the drivers of child poverty risk.

## 4 Multidimensional Child Poverty

Child poverty cannot be captured solely in monetary terms, as children do not directly access income and expend it. Instead, child poverty is measured by the deprivation of rights to health, education, water and sanitation, basic living standards, and protection from neglect, exploitation and abuse. The multidimensional poverty framework introduced by Alkire and Foster (2009), which resulted in the Multidimensional Poverty Index (MPI), allows us to extend the analysis beyond monetary indicators. Iraq has implemented the MPI in the 2011 Iraq Knowledge Network Survey, identifying the key dimensions of poverty deprivation in the Iraqi population. The MPI framework, however, does not focus on children, but rather on the household as a unit of analysis. It also does not make any allowance for the violation of children's basic rights. Due to these limitations, the UNICEF Office of Research has developed a new tool—the Multiple Overlapping Deprivation Analysis (MODA) (De Neubourg et al. 2012).

Unlike the MPI, MODA focuses on children and explicitly adopts a rights-based approach to child well-being. MODA recognizes that children are not homogenous across their childhood and therefore uses a life-cycle approach, analyzing separate age groups and allowing needs and rights to vary over the years of childhood. Like the MPI, MODA focuses on multidimensional deprivations, explicitly recognizing that well-being cannot be compartmentalized into single dimensions of deprivation (e.g. nutrition, education, health etc.). Moreover both indices are based on an equity approach because they concentrate on highly deprived persons, who suffer more violations of basic rights simultaneously.

The original MODA application was designed to be a cross-country measure based on the use of either Multiple Indicator Cluster Survey (MICS) or Demographic and Health Survey (DHS) datasets. These surveys do not capture monetary poverty in terms of expenditures per capita, and therefore preclude the possibility of integrating deprivations of rights with monetary income. However, MODA is a flexible tool that can be adapted to local contexts and survey availability, and household income/expenditure surveys can be used to define child deprivation, provided that they contain enough suitable indicators. Therefore, in this analysis we decided to explore the application of MODA methodology using IHSES 2012 data, which gives us a unique opportunity to complement the analysis of child deprivation (in terms of non-monetary indicators) with an analysis of monetary child poverty.

Given the specific characteristics of MODA methodology, the childhood life stages, the indicators of children's fundamental rights, and the thresholds needed to identify a violation of these rights, clearly play a key role in the analysis. Through close consultations with government counterparts and Iraqi academia, a consensus was reached on the choice of age groups. This study includes life stages consisting of three age groups: 1) birth and early childhood (children less than 60 months old); 2) primary childhood (children aged 5-14); and 3) adolescence (children aged 15-17). For each of these groups, given the available information in the IHSES and in compliance with the child well-being dimensions defined in the Convention of the Rights of the Child (CRC), we identified up to eight dimensions depending on the children's age, shown in Figure 4.1. Two dimensions—information and education—are specific to school-age children (5-17 years), while protection, although relevant for children of all ages, was only applied to children aged 5-14 due to data limitations.

**Figure 4.1: Dimensions for the MODA, by Life-Cycle Stage**

Age 0-4	Age 5-14	Age 15-17
Nutrition	Nutrition	Nutrition
Health	Health	Health
Water	Water	Water
Sanitation	Sanitation	Sanitation
Housing	Housing	Housing
	Information	Information
	Education	Education
	Protection	

Source: UNICEF elaboration based on De Neubourg et al. (2014)

In selecting the indicators and thresholds to adopt for any of the above dimensions, a number of criteria were previously developed (De Neubourg et al. 2012). A general recommendation is to adopt a similar number of indicators for each dimension so as to avoid weighting problems and double counting. The main principles in choosing the indicators were relevance to child well-being and a clear attribution to the dimension, variance, scalability and coverage, as summarized in Table 4.1.

**Table 4.1: MODA Dimensions and Indicators, by Age Group**

Dimensions	Birth and Early Childhood (0 – 4 years)	Primary Childhood (5 – 14 years)	Adolescence (15 – 17 years)
Nutrition	Stunting Underweight Wasting	Diet variety	
Health	Skilled birth attendance	-	
	Access to health care Time to health facilities		
Education	-	School attendance	School attainment
		School attainment	
Housing	Overcrowding Type of dwelling		
Water	Access to an improved water source		



**Table 4.1: MODA Dimensions and Indicators, by Age Group**

Dimensions	Birth and Early Childhood (0 – 4 years)	Primary Childhood (5 – 14 years)	Adolescence (15 – 17 years)
Sanitation	Access to improved sanitation facilities		
Access to information	-	Availability of information devices	
Protection	-	Child labour Early marriage	-

Source: UNICEF elaboration

**Table 4.2: MODA Definition of Indicators and Cut-off Points**

Life-cycle Stage	Dimension	Indicator	Deprivation Cut-off
Birth and early childhood (0-59 months)	Nutrition	Stunting	Stunting is defined as a “low” height-for-age (H/A) ratio, where “low” means that a height z-score is lower than 2 <sup>10</sup>
		Underweight	A child is classified as underweight if his/her z-score of weight-for-age is lower than 2 <sup>11</sup>
		Wasting	Wasting or thinness is defined as a “low” body weight (W) for height (H) ratio
	Health	Skilled birth attendance	Children whose mother, when delivering her last child, was not assisted by trained personnel (WHO 2004)
Primary childhood (5-14 years)	Nutrition	Diet variety	Given seven macro-groups of food items: 1) cereals, roots and tubers; (2) pulses and legumes; (3) dairy products; (4) oils and fats; (5) meat, fish, eggs; (6) fruit; (7) vegetables, we considered a child that lives in a household where only four or less groups are consumed to be deprived
	Education	Primary school attendance	Children in age of compulsory schooling (6-14 for KR-I regions, 6-11 for the rest of Iraq) are considered deprived if they are not currently attending school at any level
		Time to reach school facilities	A child is considered deprived if s/he is attending school and takes more than 30 minutes to reach the closest primary school
	Access to information	Availability of information devices	Availability of phones, computer and other information devices for children
	Protection	Child labour	We consider children aged between 5 and 14 as deprived, plus children reporting not being able to go to school due to family obligations
		Early marriage	Children are considered deprived if married and younger than 15

<sup>10</sup> WHO standard definition.

<sup>11</sup> WHO standard definition.

**Table 4.2: MODA Definition of Indicators and Cut-off Points**

Life-cycle Stage	Dimension	Indicator	Deprivation Cut-off
Adolescence (15-17 years)	Nutrition	Diet variety	Given seven macro-groups of food items: 1) cereals, roots and tubers; (2) pulses and legumes; (3) dairy products; (4) oils and fats; (5) meat, fish, eggs; (6) fruit; (7) vegetables, we considered a child that lives in a household where only four or less groups are consumed to be deprived
	Education	Primary school achievement	Children older than 14 are considered deprived if they failed to achieve any formal achievement (i.e., primary school certificate) and are no longer in education
	Access to information	Availability of information devices	Availability of phones, computer and other information devices for children
All children	Health	Access to health care in case of need	Children of any age that reported any injury, disability and/or diseases and did not receive any health care are considered deprived
		Time to reach public health facilities	A child is considered deprived if s/he lives in a household that needs more than 30 minutes to reach the nearest public hospital or medical centre
	Housing	Overcrowding	Children living in households with more than three people per room are considered deprived <sup>12</sup>
		Shelter type	Children are deprived if living in dwellings made by bamboo, clay or other natural material
	Water	Access to clean water	A child is considered as deprived if s/he lives in a household without access to the public network; this is consistent with WHO (2008) definition of “improved” water source, and even more restrictive
	Sanitation	Access to improved sanitation	Children are considered deprived if they live in a house without a flushed sanitation service (consistent with WHO, 2008), and also without a toilet inside the house at exclusive disposal of the family

## 4.1 Deprivation in Children's Rights

### 4.1.1 Nutrition

Among the essential needs of children is adequate nutrition, both in terms of energy intake and a balanced diet. Prolonged food deprivation may prevent children from living a healthy life and impair their cognitive development. Most indicators, available from the IHSES survey, to identify food deprivation are based on anthropometric measures, which monitor the body's response to inadequate nutrition. In children, the three most commonly used anthropometric indicators are, stunting (height-for-age), underweight (weight-for-age), and wasting (weight-for-height). As a fourth indicator, we also consider an index of diet diversity.

<sup>12</sup> UN Habitat (2007).

We performed a regression analysis to understand the variables that most impact stunting, underweight, wasting and dietary diversity.<sup>13</sup>

**Indicator 1: Stunting in children aged 0-60 months.** One of the first consequences of nutritional deprivation is growth retardation, where children's heights fall below the average height of children who do not suffer from any deprivation (or a normative value). Stunting is defined as a "low" height-for-age (H/A) ratio, where "low" means that a height z-score is lower than 2.

**Findings:** The profile of the "average" stunted child in Iraq is mainly boys less than three years old who live in poor households. Stunted children tend to concentrate in rural households with a low number of working members and where the household head works in the agriculture sector, is relatively young (<29 years old) and illiterate. Other things being equal, the probability of observing a stunted child in a household headed by someone aged 30-39 is 23%.

**Indicator 2: Underweight in children aged 0-60 months.** According to WHO, a child aged 0-4 is classified as underweight if his/her z-score of weight-for-age is lower than 2. Table 4.3 shows the prevalence of underweight children by governorate. The negative relationship between monetary poverty and proportion of underweight children is less pronounced than with stunting.

**Findings:** Underweight children are mainly boys, less than two years old, living in households where the head is employed in the agricultural or the service sectors. The risk increases when the head is below 39 years old or above 70 years old; the risk also increases for households in the poorest quintile of expenditures and receive public social transfers. The latter circumstance may indicate a good targeting.

**Indicator 3: Wasting in children aged 0-60 months.** Wasting or thinness is defined as a "low" body weight-for-height ratio.

**Findings:** Children suffering from wasting represent 7.4% of the Iraqi population of children less than five years old. WHO regards 5% as an alarming threshold. Table 4.3 shows that these children are concentrated in the southern governorates. Children suffering from wasting show the highest risk for boys less than two years old who come from poor families with a relatively large size (10-11 members). No other profiling variables turn out to be significantly associated with this indicator.

**Indicator 4: Diet diversity in children aged 5-17 years old.** For children older than five years old, the IHSES 2012 did not collect anthropometric measures. For this age bracket, therefore, we built a fourth indicator. We defined a deprived child as one who lives in a household where four or less macro-groups of food are consumed (of the seven macro-groups identified as 1) cereals, roots and tubers, (2) pulses and legumes, (3) dairy products, (4) oils and fats, (5) meat, fish, eggs, (6) fruit, (7) vegetables).

**Findings:** Looking at the determinants of scarcity in diet variety, the highest probability of being deprived is experienced by children living in households with a very elder person and female head of household employed in the agricultural sector or out of the labour force, with only one family member currently in employment and with five or six children.

13 The method implemented for the regression analysis can be briefly summarized as follows. The first step consists in short listing the variables candidate to explain the outcome (i.e. if a child suffers from stunting). Given a large set of explanatory factors (socio-demographic characteristics of the household head, the characteristics of the household as well as those specific to children), which ones matter the most in explaining the pattern observed in stunting? The answer is obtained by testing the relevance of each variable by using standard tools such as the Kolmogorov-Smirnov test and the Pearson's chi-squared test. The second step consists in estimating a logistic regression model: the dependent variable is the deprivation outcome (e.g. 1 if deprived, and 0 otherwise), and the explanatory variables are those identified in step 1 (e.g. the age of the household head, household size, the region of residence, the PCE quintile, etc.). The third step consists in fine-tuning the specification of the model by dropping those variables that are not significant in the initial regression: by means of a stepwise procedure, the model is repeatedly re-estimated on the basis of a restricted set of significant variables. In order to facilitate the interpretation of the regression estimates we have reported the so-called average marginal effects (see Appendix A for a detailed explanation).

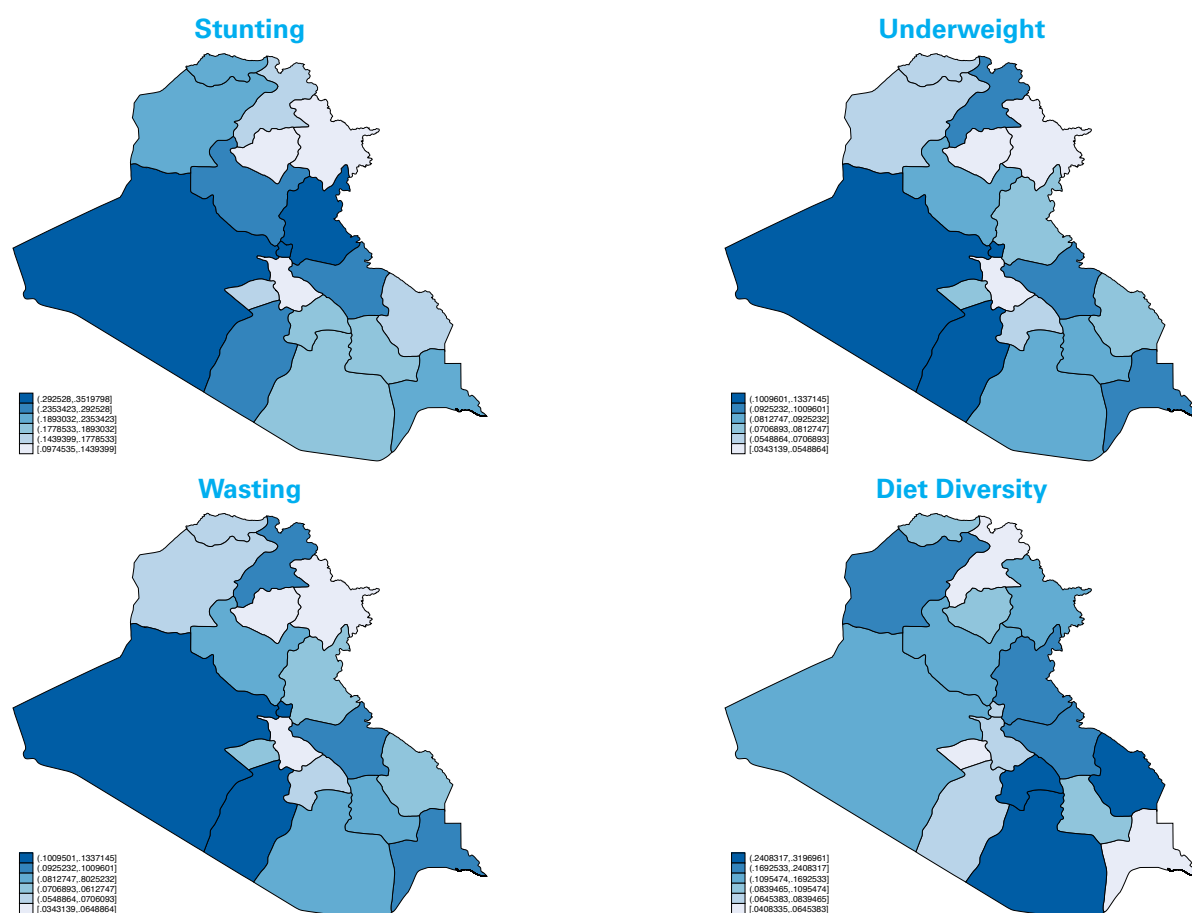
**Table 4.3: Prevalence of Deprivation in Selected Indicators for Nutrition, 2012**

Stunting (%)				Underweight (%)				Wasting (%)				Diet Diversity			
Anbar	35.2			Anbar	13.4			Muthanna	15.0			Missan	32.0		
Baghdad	32.0			Baghdad	11.2			Baghdad	12.2			Qadissiya	25.7		
Diyala	30.1			Najaf	10.4			Anbar	9.5			Muthanna	24.8		
Najaf	28.5			Basrah	9.8			Wassit	7.8			Wassit	23.3		
Salah Al-Din	24.6			Wassit	9.4			Thi-Qar	7.7			Ninewa	17.9		
Wassit	23.6			Erbil	9.3			Erbil	7.2			Diyala	17.3		
Ninewa	23.5			Salah Al-Din	9.2			Basrah	7.2			Salah Al-Din	16.5		
Basrah	21.6			Muthanna	8.6			Salah Al-Din	7.2			Anbar	12.2		
Dahuk	19.0			Thi-Qar	8.6			Najaf	7.1			Sulaimaniyah	11.1		
Qadissiya	18.9			Missan	7.4			Qadissiya	6.6			Thi-Qar	10.8		
Muthanna	18.9			Diyala	7.3			Diyala	6.2			Dahuk	9.7		
Thi-Qar	18.1			Kerbela	7.2			Missan	6.1			Kirkuk	8.6		
Erbil	17.5			Qadissiya	7.1			Kerbela	5.4			Babil	8.1		
Missan	16.9			Ninewa	6.1			Ninewa	4.4			Baghdad	6.7		
Kerbela	16.2			Dahuk	5.8			Babil	4.0			Najaf	6.5		
Babil	12.6			Babil	5.1			Dahuk	4.0			Erbil	6.4		
Kirkuk	11.0			Sulaimaniyah	4.1			Sulaimaniyah	3.4			Basrah	4.5		
Sulaimaniyah	9.7			Kirkuk	3.7			Kirkuk	1.8			Kerbela	4.1		
Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total
Baghdad	31	37.1	32.0	Baghdad	10.4	14.5	11.1	Baghdad	10.5	16.7	11.5	Rest of Iraq	8.9	26.9	14.1
Rest of Iraq	20	26.3	21.7	Rest of Iraq	7.8	8.4	8.0	Rest of Iraq	5.8	7.2	6.2	KR-I	8	28.9	9.1
KR-I	14	25.1	15.1	KR-I	6.4	7.7	6.4	KR-I	4.9	3.5	4.9	Baghdad	4.7	18.6	6.7
Rural	26	29.3	27.1	Rural	8.1	9.3	8.5	Rural	5.8	8.4	6.7	Rural	10.3	32.8	18.1
Urban	19	26.2	20.7	Urban	8.2	9.4	8.4	Urban	7.5	9.4	7.8	Urban	6.8	18.2	8.7
Iraq	23.0			Iraq	8.4			Iraq	7.4			Iraq	12.0		

Source: our elaboration based on IHSES 2012

Table 4.3 shows the prevalence of the four indicators for the reference population by governorate (ordered high to low). Figure 4.2 provides a visual summary of the geographical pattern.

Figure 4.2: Deprivation in Nutrition<sup>14</sup>



Source: our estimates based on IHSES 2012

#### 4.1.2 Health

Health needs particular support by local administrative and infrastructural systems. Each year, approximately nine million children worldwide die from preventable and treatable illnesses: five of these, pneumonia, diarrhea, malaria, measles, and HIV/AIDS, account for around half of all under five deaths. Malnutrition is, of course, related to health outcomes with prenatal care as an important intervention to prevent a range of these issues. While the MICS4 survey and IHSES 2007 contained data on vaccinations, IHSES 2012 does not. We constructed three indicators for the health dimension.

**Indicator 5: Access to health care in case of need for all children.** Children of any age that reported any injury, disability and/or diseases and did not receive any health care are considered deprived.

**Findings:** Family background plays a major role: children between 10 and 14 years old, living in a poor family with 10 or more members (and seven children or more), and with a head of household with at most an elementary school certificate and out of the labour force, are the ones more likely to be deprived in the access to health care.

<sup>14</sup> A better understanding of factors at work to determine the pattern observed in Figure 4.2 can be achieved by carrying out regression analysis. The method implemented can be briefly summarized as follows. The first step consists in short listing the variables candidate to explain the outcome (i.e. if a child suffers from stunting). Given a large set of explanatory factors (socio-demographic characteristics of the household head, the characteristics of the household as well as those specific to children), which ones matter the most in explaining the pattern observed in stunting? The answer is obtained by testing the relevance of each variable by using standard tools such as the Kolmogorov-Smirnov test and the Pearson's chi-squared test. The second step consists in estimating a logistic regression model: the dependent variable is the deprivation outcome (e.g. 1 if deprived, and 0 otherwise), and the explanatory variables are those identified in step 1 (e.g. the age of the household head, household size, the region of residence, the PCE quantile, etc.). The third step consists in fine-tuning the specification of the model by dropping those variables that are not significant in the initial regression: by means of a stepwise procedure, the model is repeatedly re-estimated on the basis of a restricted set of significant variables. In order to facilitate the interpretation of the regression estimates we have reported the so-called average marginal effects (see Appendix A for a detailed explanation).

**Indicator 6: Time to reach public health facilities for all children.** A child is considered deprived if s/he lives in a household that needs more than 30 minutes to reach the nearest public hospital or medical center.

**Findings:** This measure depends both on external factors, such as the governorate's investments in hospitals and connections, and on idiosyncratic factors, such as the private means of transportation. Children more at risk of deprivation are those living in poor rural households with a female head, employed in agriculture.

**Indicator 7: Skilled birth attendance for all children.** IHSES 2012 did not collect information on pre-natal care. As a proxy, we used information on the last delivery of mothers. We considered deprived all children whose mother, when delivering her last child, was not assisted by trained personnel, as defined by WHO (2006).

**Findings:** Children of female household heads between 30 and 39, with low education and out of the labour force, are the children most at risk of deprivation in skilled attendance at birth.

**Table 4.4: Prevalence of Deprivation in Selected Indicators for Health, 2012**

Access to Public Health Facilities				Time to Reach Health				Skilled Birth Attendance			
Najaf	15.8			Thi-Qar	8.2			Kirkuk	8.6		
Kerbela	14.7			Babil	6.5			Wassit	7.7		
Anbar	14.6			Ninewa	6.2			Muthanna	7.3		
Dahuk	13.3			Wassit	6.2			Diyala	5.4		
Thi-Qar	8.8			Salah Al-Din	5.2			Qadissiya	4.9		
Erbil	8.6			Anbar	4.4			Salah Al-Din	4.4		
Kirkuk	8.4			Diyala	3.7			Baghdad	4.4		
Basrah	8.2			Erbil	3.4			Sulaimaniyah	2.5		
Ninewa	7.6			Baghdad	3.3			Erbil	2		
Muthanna	7.6			Qadissiya	2.6			Anbar	1.6		
Qadissiya	7.3			Missan	2.6			Thi-Qar	1.5		
Sulaimaniyah	7			Basrah	2.6			Ninewa	1.3		
Babil	5.2			Kerbela	1.8			Basrah	1.3		
Baghdad	4.4			Sulaimaniyah	1.6			Najaf	1		
Diyala	4.1			Dahuk	0.9			Dahuk	0.6		
Wassit	3.7			Muthanna	0.8			Babil	0.6		
Missan	2.1			Kirkuk	0.3			Missan	0.6		
Salah Al-Din	1.9			Najaf	0.2			Kerbela	0		
Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total
KR-I	8.9	17.2	9.3	Rest of Iraq	3.2	6.8	4.2	Baghdad	3.4	9.5	4.4
Rest of Iraq	6.8	10.5	7.9	Baghdad	2.5	8.1	3.3	Rest of Iraq	2.5	3.9	2.8

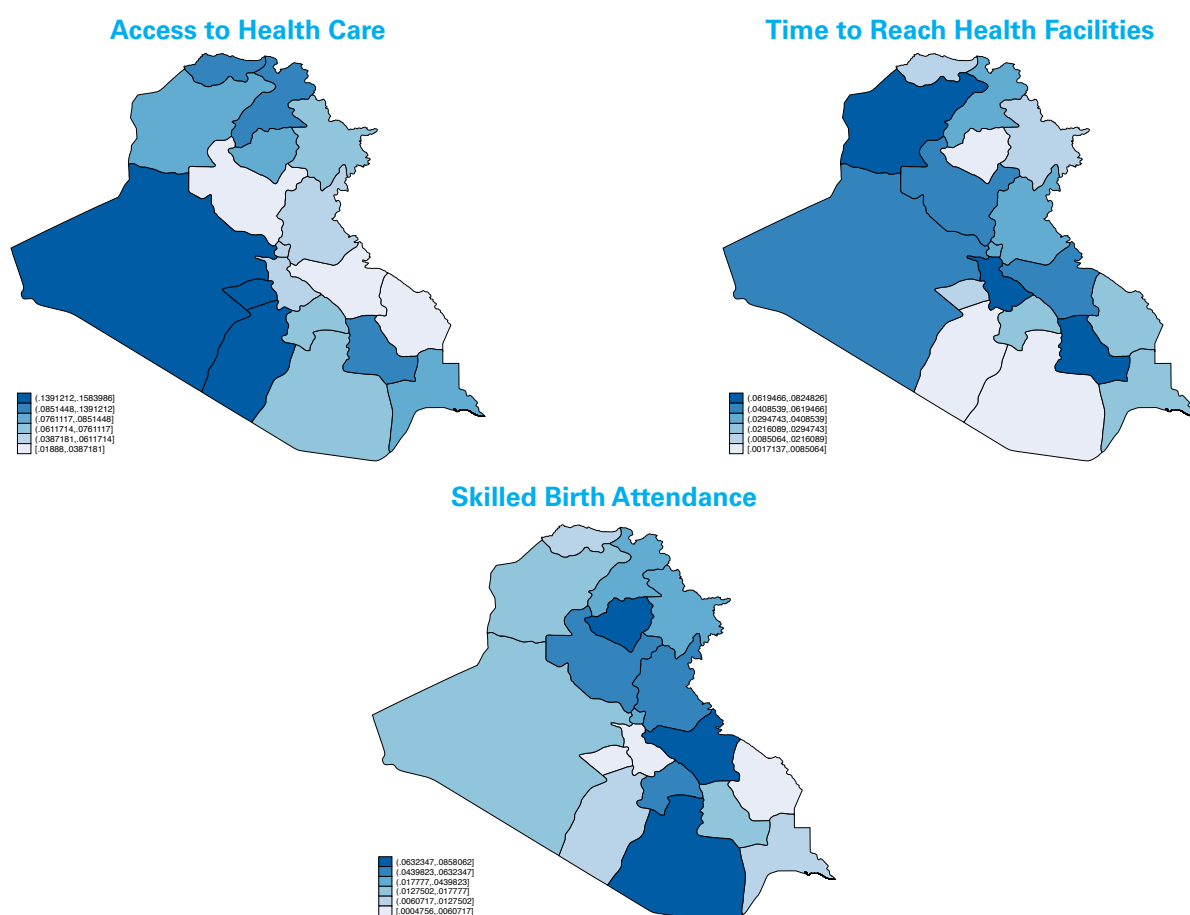
**Table 4.4: Prevalence of Deprivation in Selected Indicators for Health, 2012**

Access to Public Health Facilities				Time to Reach Health				Skilled Birth Attendance			
Baghdad	3.6	9.1	4.4	KR-I	1.9	3.6	2	KR-I	1.6	6.8	1.8
Rural	7	11.5	8.5	Rural	8.6	12.1	9.8	Rural	4.5	7.1	5.3
Urban	6.2	9.3	6.7	Urban	0.3	1.1	0.4	Urban	1.7	2.1	1.8
Iraq	6.4	10.5	7.4	Iraq	2.8	6.9	3.7	Iraq	2.5	4.7	3

Source: our elaboration based on IHSES 2012

Table 4.4 shows the prevalence of the three indicators for the reference population by governorate (ordered high to low). Almost 7.5% of Iraqi children did not have access to health in case of need, even though we observed geographical variation (from 15.8% in Najaf, to less than 2% in Salah Al-Din). A small fraction of children live further than 30 minutes from a public facility (3.7% at the national level), but this indicator shows wide gap between rural (9.8%) and urban areas (0.4%). To a lesser extent, this is also the case for skilled birth attendance.

**Figure 4.3: Deprivation in Health**



Source: our estimates based on IHSES 2012

In Table B2 in Appendix B, we present the regressions outputs; here we summarize the main findings.

### 4.1.3 Education

Education helps to develop “the child’s personality, talents and mental and physical abilities to their fullest potential.” (CRC, article 29) Free and compulsory attendance to primary school is required by CRC (article 28) to State Parties. In order to verify actual enforcement, we used information on distances to schools, which represent an effective right violation for children required by law to attend them.

**Indicator 8: Primary school attendance for children aged 6-14.** Children in age of compulsory schooling (6-14 for KR-I region, 6-11 for the rest of Iraq) are considered deprived if they are not currently attending school at any level.

**Findings:** We find moderate deprivation when looking at attendance (10.8%). Education clearly depends on the characteristics of the family and the children: boys closer to working age, members of large household (10-11 people, 7+ children) with a head of household employed in agriculture and with low (primary) educational attainment, are more likely to leave school before compulsory education (and therefore to enlarge the number of employed family members).

**Indicator 9: Primary school achievement for children aged 15-17.** Children older than 14 are considered deprived if they failed to achieve any formal achievement (i.e. primary school certificate) and are no longer in education.

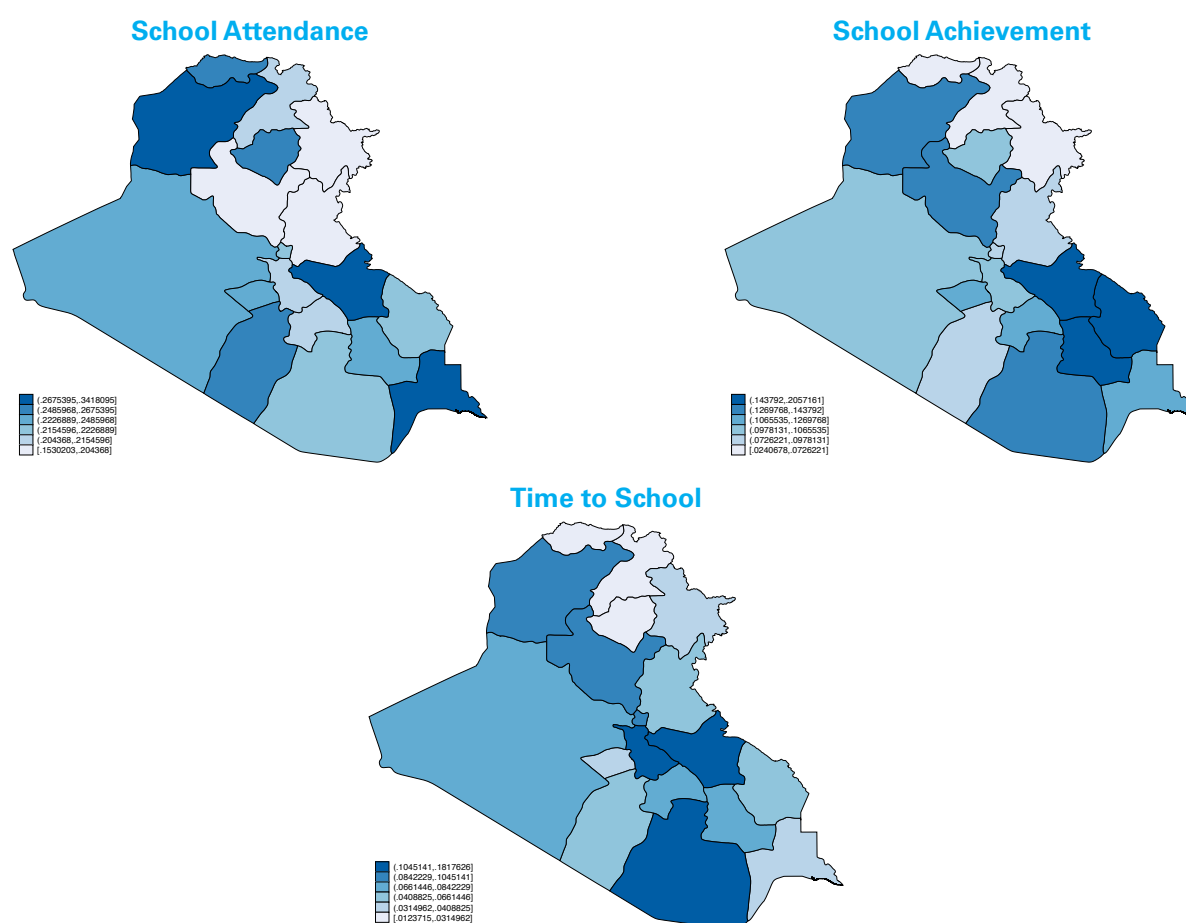
**Findings:** The profile of children unlikely to complete primary school is boys living in small, poor families with an unemployed household member living in urban areas. The effective completion of primary school turns out to be a relevant issue for Iraqi children, with almost one out of four children deprived with respect to this indicator (29.2% in rural areas, and a peak of 34.2% in Ninewa).

**Indicator 10: Time to reach school facilities for children aged 6-17.** This indicator is based on the time distance to reach the closest elementary school. A child is considered deprived if s/he is attending school and it takes more than 30 minutes to reach the closest primary school.

**Findings:** With the exception of household head employment in agriculture, we did not find the idiosyncratic determinants discussed for the “twin” Indicator 6 on distance to a health facility. We found moderate deprivation when looking at distance to school (7.5%).



Figure 4.4: Deprivation in Education



Source: our estimates based on IHSES 2012

Monetary poverty is clearly linked to access to education. All around the country, poor children show lower enrolment rates (-10 percentage points for primary school and -20 percentage points for secondary). Moreover, as shown by Table 4.5, when asked, the causes of early dropouts differ between poor and non-poor children. Among children leaving school before completing primary school, more than one in five children point to economic reasons as the key determinant for dropping out; one in two children does not even desire to study, probably as a consequence of the quality of education and learning. As highlighted in Table 4.5, poor households tend to not encourage their children to continue education, as it is considered not useful for improving economic and social status.

Table 4.5: Causes of Dropouts in Iraq by Poverty Status

Reason for Not Attending	Primary (6-11 years)			Secondary (12-17 years)		
	Poor	Non-poor	Total	Poor	Non-poor	Total
No easily accessible school	6.3	6.1	6.2	5.9	5.8	5.9
Teaching not good and serious	0.3	3.0	1.7	1.0	1.1	1.1
School time is not flexible	N/A	N/A	N/A	0.0	0.4	0.3
Mistreatment by the teacher	0.7	2.8	1.8	0.8	1.2	1.1

**Table 4.5: Causes of Dropouts in Iraq by Poverty Status**

Reason for Not Attending	Primary (6-11 years)			Secondary (12-17 years)		
	Poor	Non-poor	Total	Poor	Non-poor	Total
Must work to support family	0.8	3.0	2.0	9.7	9.0	9.2
Household could not afford	20.4	9.0	14.3	13.5	7.2	9.0
Household thought it is not useful	0.3	2.8	1.6	0.5	0.7	0.6
Going to school is hazardous	1.0	1.7	1.4	1.1	2.6	2.2
Social reasons	14.2	22.8	18.8	26.4	25.7	25.9
Early Marriage	N/A	N/A	N/A	0.7	3.6	2.8
Sickness or disabilities	1.2	10.9	6.4	2.0	3.1	2.8
No desire to continue education	48.6	31.1	39.3	34.2	34.1	34.1
Must help in house chores	5.3	2.8	4.0	3.4	4.2	4.0
Other	1.0	4.0	2.6	0.7	1.4	1.2

Source: our estimates based on IHSES 2012

Table B3 in Appendix 2 reports average marginal probabilities of being at risk of educational deprivation.

**Table 4.6: Prevalence of Deprivation in Selected Indicators for Education, 2012**

Primary School		Primary School Attainment		Time to School Facilities (%)	
Missan	20.6	Ninewa	34.2	Muthanna	18.2
Wassit	16.5	Basrah	28.7	Babil	16.4
Thi-Qar	14.8	Wassit	27.1	Wassit	11.0
Muthanna	14.0	Dahuk	26.4	Salah Al-Din	9.9
Salah Al-Din	13.7	Najaf	26.3	Ninewa	9.7
Ninewa	13.6	Kirkuk	25.5	Baghdad	9.4
Qadissiya	11.8	Thi-Qar	24.2	Anbar	7.5
Basrah	11.6	Kerbela	23.1	Thi-Qar	7.2
Kerbela	10.7	Anbar	22.7	Qadissiya	7.2
Babil	10.6	Missan	21.9	Missan	6.1
Anbar	10.2	Baghdad	21.7	Najaf	4.2
Kirkuk	10.0	Muthanna	21.7	Diyala	4.2
Najaf	9.5	Erbil	21.4	Basrah	4.0
Baghdad	8.9	Babil	21.3	Sulaimaniyah	3.5
Diyala	7.9	Qadissiya	20.7	Kerbela	3.4

Dahuk	6.6	Diyala	20.2	Dahuk	2.9
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**Table 4.6: Prevalence of Deprivation in Selected Indicators for Education, 2012**

Primary School				Primary School Attainment				Time to School Facilities (%)			
Erbil				Salah Al-Din				Erbil			
Sulaimaniyah				Sulaimaniyah				Kirkuk			
Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total
KR-I	8.9	17.2	9.3	Rest of Iraq	3.2	6.8	4.2	Baghdad	3.4	9.5	4.4
Rest of Iraq	6.8	10.5	7.9	Baghdad	2.5	8.1	3.3	Rest of Iraq	2.5	3.9	2.8
Baghdad	3.6	9.1	4.4	KR-I	1.9	3.6	2	KR-I	1.6	6.8	1.8
Rural	7	11.5	8.5	Rural	8.6	12.1	9.8	Rural	4.5	7.1	5.3
Urban	6.2	9.3	6.7	Urban	0.3	1.1	0.4	Urban	1.7	2.1	1.8
Iraq	6.4	10.5	7.4	Iraq	2.8	6.9	3.7	Iraq	2.5	4.7	3

Source: our elaboration based on IHSES 2012

#### 4.1.4 Housing, Water and Sanitation

A good place for living is clearly part of child well-being which provides a quiet space to do homework, to play, to sleep and enjoy (UN HABITAT, 2007). For this reason, we adopted the two indicators suggested by De Neubourg et al. (2012) for Cross-National MODA analysis. These are crowding or housing density, and the presence of non-natural material in either floor or roof of the dwelling.

Access to safe water is part of a healthy environment for children. MICS surveys usually include indicators of distance from water source, but IHSES 2012 did not. However, we were able to obtain an indicator of access to improved water source. We also devised an indicator consistent with WHO standards for sanitation.

**Indicator 11: Overcrowding for all children.** According to UN Habitat (2007), we consider that children are deprived if they are living in households with more than three people per room. We adjusted the indicator assigning a 0.5 weight to children younger than five years old.

**Findings:** Seven percent of Iraqi children suffer from overcrowding - more than one in 10 in rural areas. Notably, Sulaimanyiah has low rates of overcrowding at 1.5%, compared to higher rates in Wassit, Missan, Qadissiya, Najaf and Kirkuk, which are in line with rural percentages. The main drivers of children's risk of deprivation in housing are the family composition (many children – seven or more; few household members in employment – one or two; and poor economic condition) and the head of household status (younger than 50, female, with no more than primary education).

**Indicator 12: Shelter type for all children.** IHSES 2012 includes a question on the type of household unit. The categories are a house or flat, versus a shelter made of bamboo, clay or other natural material. Children are deprived if they are living in a shelter made of bamboo, clay or other natural material. Findings were consistent with overcrowding. However, while overcrowding is clearly associated with “big families”, children living in households with no more than six members – and with the head of household not in the labour force, or employed in the primary sector – are more likely to suffer from shelter deprivation.

**Findings:** There are similar numbers for incidence of natural shelter as with overcrowding. At the national level 8.2% of households are deprived, ranging from 22.3% in Kirkuk to almost zero in Najaf.

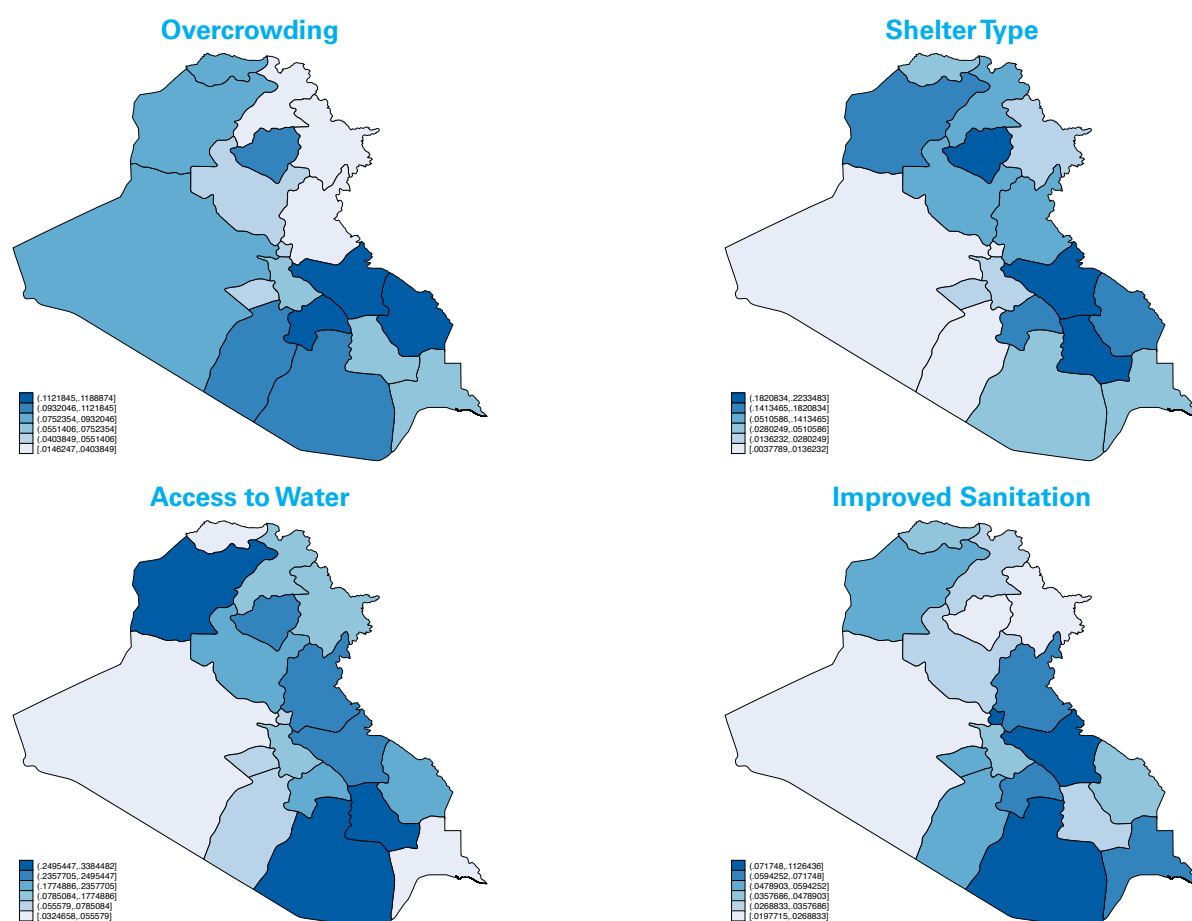
**Indicator 13: Access to clean water for all children.** A child is considered as deprived if s/he lives in a household without access to the public water network. This is consistent with the WHO (2008) definition of “improved” water source.

**Findings:** Our findings show that 15% of Iraqi children suffer from water deprivation, with the usual, huge variance across governorates. Almost four rural children out of 10 have no public water network connection, while this holds true only for 2.9% of their urban peers. Children living in poor households with the head employed in agriculture are more at risk of water deprivation, together with ones with female headed households, younger than 40 and not in the labour force.

**Indicator 14: Access to improved sanitation for all children.** Children are considered deprived if they live in a house without a flushed sanitation service (consistent with WHO 2008), and also without a toilet inside the house at exclusive disposal of the family.

**Findings:** Lower rates of deprivation are found in sanitation, compared to water access. In this dimension, the urban-rural divide is almost insignificant (less than one percentage point). Most deprived children live in households with a female head aged 30-39, employed in agriculture and having only an elementary school certificate. Notably, at the household level the relationship between sanitation and PCE is not so evident as when we look at the governorate level PCE and sanitation.

**Figure 4.5: Deprivation in Housing, Water and Sanitation**



Source: our estimates based on IHSES 2012

**Table 4.7: Prevalence of Deprivation in Housing, Water and Sanitation, 2012**

Overcrowding (%)				Shelter Type (%)				Water (%)				Sanitation (%)			
Wassit	11.9			Kirkuk	22.3			Thi-Qar	33.8			Muthanna	11.3		
Missan	11.8			Wassit	20.1			Ninewa	31.7			Baghdad	7.5		
Qadissiya	11.4			Thi-Qar	18.5			Muthanna	25.4			Wasit	7.2		
Najaf	11.0			Ninewa	17.9			Wassit	24.5			Basrah	7.1		
Kirkuk	10.4			Qadissiya	16.3			Kirkuk	24.4			Diyala	6.4		
Muthanna	9.9			Missan	14.5			Diyala	24.2			Qadissiya	6.2		
Ninewa	8.8			Salah Al-Din	13.7			Missan	22.9			Ninewa	5.7		
Anbar	8.4			Diyala	11.3			Salah Al-Din	21.7			Najaf	5.3		
Dahuk	7.5			Erbil	5.5			Qadissiya	19.2			Kerbela	4.9		
Thi-Qar	7.5			Basrah	4.7			Babil	16.3			Babil	4.7		
Basrah	7.0			Muthanna	4.6			Sulaimaniyah	14.7			Missan	4.2		
Babil	6.1			Dahuk	3.4			Erbil	7.9			Dahuk	3.7		
Baghdad	4.9			Kerbela	2.2			Najaf	7.8			Erbil	3.5		
Salah Al-Din	4.7			Babil	1.8			Kerbela	5.9			Salah Al-Din	3.4		
Kerbela	4.2			Sulaimaniyah	1.6			Baghdad	5.7			Thi-Qar	3.0		
Diyala	3.9			Anbar	1.2			Basrah	5.4			Sulaimaniyah	2.4		
Erbil	3.0			Baghdad	1.1			Dahuk	3.3			Anbar	2.0		
Sulaimaniyah	1.5			Najaf	0.4			Anbar	3.2			Kirkuk	2.0		
Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total
Rest of Iraq	4.7	17.0	8.1	Rest of Iraq	7.1	21.4	11.1	Rest of Iraq	14.0	33.9	19.7	Baghdad	7.5	7.5	7.5
Baghdad	2.8	16.9	4.9	KR-I	2.7	16.6	3.4	KR-I	8.8	18.1	9.2	Rest of Iraq	4.2	7.3	5.1
KR-I	3.3	10.1	3.7	Baghdad	1.0	1.5	1.1	Baghdad	4.2	14.7	5.7	KR-I	2.9	8.0	3.1
Rural	6.6	18.8	10.7	Rural	13.0	28.6	18.3	Rural	31.5	52.7	38.7	Rural	4.9	8.0	5.9
Urban	2.9	14.5	4.9	Urban	1.7	7.6	2.7	Urban	2.2	6.8	2.9	Urban	4.7	6.6	5.0
Iraq	4.1	16.8	7.0	Iraq	5.1	18.7	8.2	Iraq	11.1	31.0	15.6	Iraq	4.7	7.4	5.3

Source: our elaboration based on IHSES 2012

#### 4.1.5 Access to Information and Protection from Exploitation

Access to information is also an important right for children (see CRC, article 17). While it is generally agreed that this dimension applies to school-aged children or older, a common practice for measuring deprivation is based on household information on ownership of informational devices as televisions, satellite dishes or phones. IHSES collects detailed information on these commodities.<sup>15</sup>

<sup>15</sup> IHSES collects information on individual time spent on internet. However, following Technical Notes on CC-MODA, we decided not to include an indicator of individual access to the Internet, as scarcely diffused among Iraqi households.

An important dimension of child rights is protection from economic exploitation and, moreover, from interference in a child's private life. However, it is hard to find good indicators in this dimension, due to reluctance of respondents and the sensitivity of the topic. Underestimation is also clearly a serious concern. Among a few possibilities, we have focused on child labour and early marriage.

**Indicator 15: Availability of information devices for children aged 5-17.** Considering the great diffusion of televisions in Iraq, we concentrated on "active" devices, such as phones. We used data on monthly expenditure on devices and related bills in order to understand their real availability to the household.<sup>16</sup> A child between six and 18 is considered deprived if s/he does not live in a household spending "enough" on this.

**Findings:** According to our indicator, more than one out of 10 Iraqi children have insufficient access to information. The urban-rural divide is not relevant, while some governorates reach much higher rates of deprivation in access to information (Qadissiya 26.2%, Missan 20.1%) and Dahuk emerges as best performer (4.9%). Among Iraqi children, the most at risk of information deprivation are members of poor families, with head of household employed in unemployed or out of the labour force. Moreover, older head (70 years or more) employed in agriculture also explains the family consumption pattern.

**Indicator 16: Child labour for children aged 6-14.** In Iraq, working status is legal only for children older than 14. Therefore, we consider working children in the age between six and 14, plus children reporting not to attend school due to family obligations, as deprived.

**Findings:** IHSES 2012 data shows that in Iraq almost 8% of children between six and 14 years are working. However, there is a great variation in how different Iraqi provinces are able to tackle this deprivation – from the very good performances of Thi-Qar and Diyala to the "unexpected" high rates in Kirkuk, Babil and Wassit, given their relative low rating in child monetary poverty. The profile of a child at risk of working before legal age is a boy, older than 10, living in a big household (10-11) with many children (7+) and with a household head unemployed or employed in agriculture and poorly educated. Not surprisingly, we find some similarities with the "identikit" of indicators of primary school attendance and completion.

**Indicator 17: Early marriage for children aged 6-14.** In Iraq, the legal age for marriage is 16. Therefore, children are considered deprived if married and younger than 15.

**Findings:** Our sample reveals few early marriages among Iraqi children, with some exceptions such as Najaf (3.9% in the headcount). Children living in very big households (more than 15 members), with middle-age household head (40-49 years) who is not in the labour force are more likely to be households with early marriage. Most of the other dimensions were found not relevant or give unclear predictions.

**Table 4.8: Prevalence of Deprivation in Access to Information and Protection from Exploitation, 2012**

Access to Information Devices (%)		Child Labour (%)		Early Marriage (%)	
Qadissiya	26.2	Missan	18.3	Najaf	3.9
Missan	20.1	Babil	15.8	Missan	3.1
Thi-Qar	18.0	Wassit	13.7	Muthanna	2.8
Najaf	16.3	Kirkuk	12.3	Basrah	2.6
Wassit	16.0	Basrah	8.1	Babil	2.5
Ninewa	14.4	Ninewa	8.0	Wassit	2.4
Kirkuk	14.2	Kerbela	7.7	Kerbela	2.3

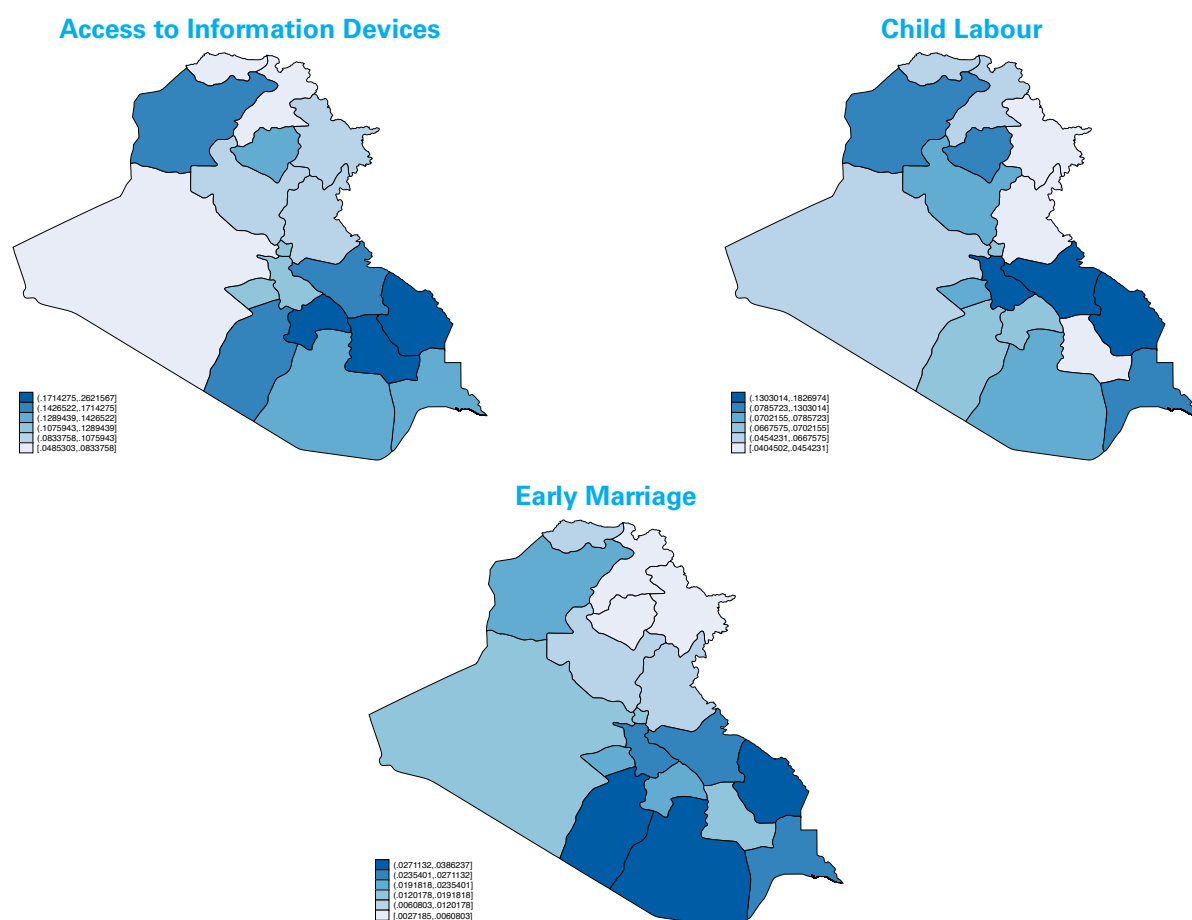
<sup>16</sup> As an instance, for mobile cards, we considered 15,000 dinar per month as a reasonable threshold.

**Table 4.8: Prevalence of Deprivation in Access to Information and Protection from Exploitation, 2012**

Access to Information Devices (%)				Child Labour (%)				Early Marriage (%)			
Muthanna	13.9			Salah Al-Din	7.3			Ninewa	2.3		
Basrah	13.6			Muthanna	7.2			Qadissiya	1.9		
Kerbela	12.2			Najaf	6.8			Baghdad	1.9		
Babylon	11.8			Qadissiya	6.8			Thi-Qar	1.3		
Baghdad	11.6			Baghdad	6.8			Anbar	1.2		
Salah Al-Din	9.9			Dahuk	6.5			Diyala	1.2		
Diyala	8.4			Anbar	5.5			Salah Al-Din	0.9		
Sulaimaniyah	8.4			Erbil	4.9			Dahuk	0.8		
Anbar	8.3			Sulaimaniyah	4.2			Erbil	0.4		
Erbil	7.9			Diyala	4.1			Kirkuk	0.4		
Dahuk	4.9			Thi-Qar	4.0			Sulaimaniyah	0.3		
Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total	Region	Non-poor	Poor	Total
Rest of Iraq	10.9	22.7	14.3	Rest of Iraq	7.5	11.6	8.7	Rest of Iraq	1.9	2.4	2.1
Baghdad	9.8	22.4	11.6	Baghdad	6.2	10.6	6.8	Baghdad	2.0	1.3	1.9
KR-I	6.5	20.6	7.3	KR-I	4.8	10.1	5.1	KR-I	0.5	0.0	0.5
Rural	12.2	22.0	15.6	Rural	11.7	14.1	12.5	Rural	2.0	1.7	1.9
Urban	9.0	23.3	11.4	Urban	4.7	8.2	5.2	Urban	1.6	2.7	1.8
Iraq	10.0	22.6	12.9	Iraq	6.8	11.4	7.9	Iraq	1.7	2.2	1.8

Source: our elaboration based on IHSES 2012

Figure 4.6: Deprivation in Access to Information and Protection from Exploitation



Source: our estimates based on IHSES 2012

## 4.2 MODA Analysis

In this section we construct the MODA for Iraq, based on the 2012 IHSES, and more precisely on the set of indicators discussed in the previous section. All indicators belonging to the same dimension have been aggregated with a union approach. Hence, we classify a child as “deprived in terms of nutrition”, if s/he is either stunted or wasted or underweight. The rationale of the union approach is that indicators of the same domain are seen as components of a particular right; hence, all children showing any sign of deprivation in a specific dimension are considered deprived of that specific universal right.<sup>17</sup>

### 4.2.1: Analysis of Children’s Multiple Deprivations

About 30% of Iraqi children under the age of five suffer from food deprivation, the single most important dimension for this age category. Children of primary education age are deprived of water and protection from exploitation at around 15%. Almost one out of three adolescents are deprived of education and 15% of them do not have adequate access to information. Table 4.9 shows the deprivation headcount ratios for each dimension and age group.

<sup>17</sup> An implication of this aggregation method is that the probability for a child to be deprived increases with the number of indicators used in a given dimension. For this reason, it is advisable to use a similar number of indicators for each dimension; an unbalanced number of indicators per dimension would imply an unbalanced indicator weighting schemes, and dimensions would not be equally weighted as prescribed by the MODA conceptual framework.



**Table 4.9: Deprivation Headcount Ratios (%) by Dimension and Age Group**

	0-4 years	5-14 years	15-17 years
<b>Nutrition</b>	29.9	12.4	10.7
<b>Health</b>	12.3	11.4	10.5
<b>Water</b>	15.3	16.2	14.1
<b>Sanitation</b>	5.8	5.2	4.7
<b>Housing</b>	13.8	14.1	11.8
<b>Information</b>	-	9.4	15.0
<b>Education</b>	-	6.6	31.6
<b>Protection</b>	-	15.6	-

Source: UNICEF estimates on 2012 IHSES data

Less than half of Iraq's children do not suffer from any deprivations, while about one third suffers from one deprivation. The risk of suffering from two deprivations increases with age. According to UNICEF estimates, 12.4% of infants suffer from two deprivations, compared to 13.1% for children of primary school age and 15.3% for adolescents. Severe deprivations (three or more deprivations experienced simultaneously) double with age: about 5% of younger children suffer from three or more deprivations, compared to about 10-11% for older children. This result is consistent with the findings on extreme poverty highlighted in earlier sections of this report. Table 4.10 shows the percentage of children in each age group that suffer multiple deprivations.

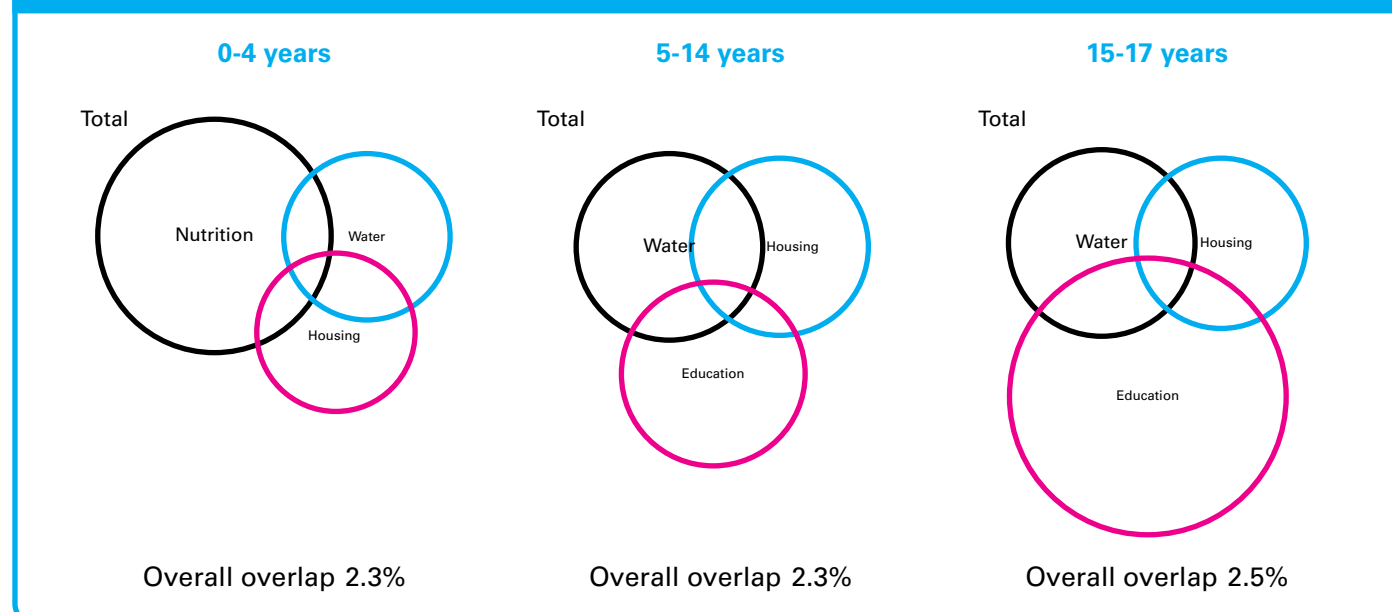
**Table 4.10: Children Suffering from Multiple Deprivations by Age Group (%)**

Number of Simultaneous Deprivations	0-4 years	5-14 years	15-17 years
0	47.7	48.8	42.1
1	34.4	27.6	32.6
2	12.4	13.1	15.3
3	4.4	6.2	6.3
4	1.1	2.9	2.5
5	0.1	0.9	0.9
6	-	0.3	0.2
7	-	0.1	0.1
8	-	0.0	-

Source: UNICEF estimates on 2012 IHSES data

For children aged 0-4, the three dimensions with the largest overlap are nutrition, water and housing. Children suffering from these three deprivations simultaneously represent 2.3% of all children in the same age cohort. For children aged 5-14, we observe both a change in the three dimensions with the largest overlap - water, housing and education - and a change of the relative importance of the three components. Figure 4.7 shows (proportional) Venn diagrams visualising the overlap of three deprivations with the highest overlap, separately by age group.<sup>18</sup>

**Figure 4.7: Deprivation Overlap Analysis Based on Three Dimensions, by Age Group**



*Source: UNICEF estimates based on 2012 IHSES. Note: The total overlap is obtained by summing up the three bi-dimensional overlaps and subtracting the three-dimension overlap in order to avoid double counting*

This analysis shows that 22.3% of children aged 0-4 years are deprived of nutrition, 6.1% are water-deprived and 5.3% are housing-deprived. Looking at children with two simultaneous deprivations, 3% of children aged 0-4 years are simultaneously nutrition-deprived and water-deprived, and 3.9% are simultaneously deprived in water and housing. Finally infants that are deprived in the three dimensions simultaneously are 2.3%. Hence, overall, infants deprived in nutrition are about 30% ( $22.3+3.0+2.4+2.3$ ), which is consistent with the headcount ratio.

Table 4.11 shows in greater detail the percentages used to construct the Venn diagrams in Figure 4.7. For simplicity, we included only two sets of deprivations; those corresponding to the top two largest overlap of the three dimensions, and do so separately by age group.<sup>19</sup>

<sup>18</sup> A proportional Venn diagram is a diagram in which the circles are proportioned to the effective amount of deprivation in each dimension. The outside rectangular area is equal to the percentage of children not deprived in any of the three dimensions.

<sup>19</sup> Venn diagrams are suited to represent up to three of the eight dimensions considered in the MODA. In our context, a full representation of multiple deprivations would require as many as 64 different Venn diagrams—this is the number that one obtains by calculating the number of possible combinations of eight dimensions taken three at a time without repetition.

**Table 4.11: Multiple Deprivation Analysis, by Age Group**

	A	B	C	AB	AC	BC	ABC	NONE
<b>0-4 years</b>								
<b>Nutrition (A), Water (B), Housing (C)</b>	22.3	6.1	5.3	3.0	2.4	3.9	2.3	54.8
<b>Health (A), Water (B), Housing (C)</b>	6.8	6.9	6.3	2.2	1.3	4.2	2.0	70.3
<b>5-14 years</b>								
<b>Water (A), Housing (B), Education (C)</b>	7.0	6.0	9.0	4.2	2.7	1.5	2.3	67.2
<b>Nutrition (A), Water (B), Housing (C)</b>	7.5	7.7	6.4	2.0	1.2	4.8	1.7	68.7
<b>15-17 years</b>								
<b>Water (A), Housing (B), Education (C)</b>	4.7	3.9	22.3	2.8	4.1	2.7	2.5	57.0
<b>Health (A), Water (B), Education (C)</b>	4.9	6.4	22.6	1.0	2.5	4.5	2.2	56.1

Source: UNICEF estimates on 2012 IHSES data

Children of primary school age present a relatively big overlap in the dimensions of water, housing and education with no major imbalance between the three components. As for adolescents, their three main deprivations are the same as children aged 5-14, but education plays, by far, the largest role.

The analysis so far makes it clear that Iraqi children who suffer from multiple deprivations do not suffer from the same deprivations when we distinguish children by age categories. Dimensions of deprivation are different over the life cycle of individuals before they pass the age that marks the threshold to adulthood. Not only do dimensions change over a child's life cycle, but the extent of deprivation changes.

#### 4.2.2 MODA Methodology

By focusing on multidimensionally deprived children, the MODA succeeds in identifying the most deprived among the deprived and two key decisions must be taken. Firstly, a threshold of deprivation must be identified, and secondly, a suitable deprivation index must be adopted. Both choices are discussed in detail in Alkire and Foster (2008), from which we draw most of the discussion in this section.

With regard to the choice of the threshold, we use the so-called cut-off approach. Put simply, a child is considered deprived if the number of dimensions in which s/he is deprived is equal or larger than a certain value  $k$ ; the value  $k$  is referred to as the cut-off point. If this value is set at 2, this means that children with at least two deprivations in any of the dimensions listed in Table 4.8 will be classified as multidimensionally deprived and the analysis will focus on children that suffer from two deprivations or more.

With regard to the choice of the index, we use three indicators.<sup>20</sup> The first and simplest index is the headcount ratio ( $H$ ). This is a simple count of multidimensionally deprived children—the number of children deprived in at least  $k$  dimensions as a share of the child reference population to whom the index refers. The problem with this indicator is that it is insensitive to the number of dimensions in which a child is deprived: “if a poor person becomes deprived in a dimension in which that person had previously not been deprived,  $H$  remains unchanged” (Alkire and Foster, 2008: 9).

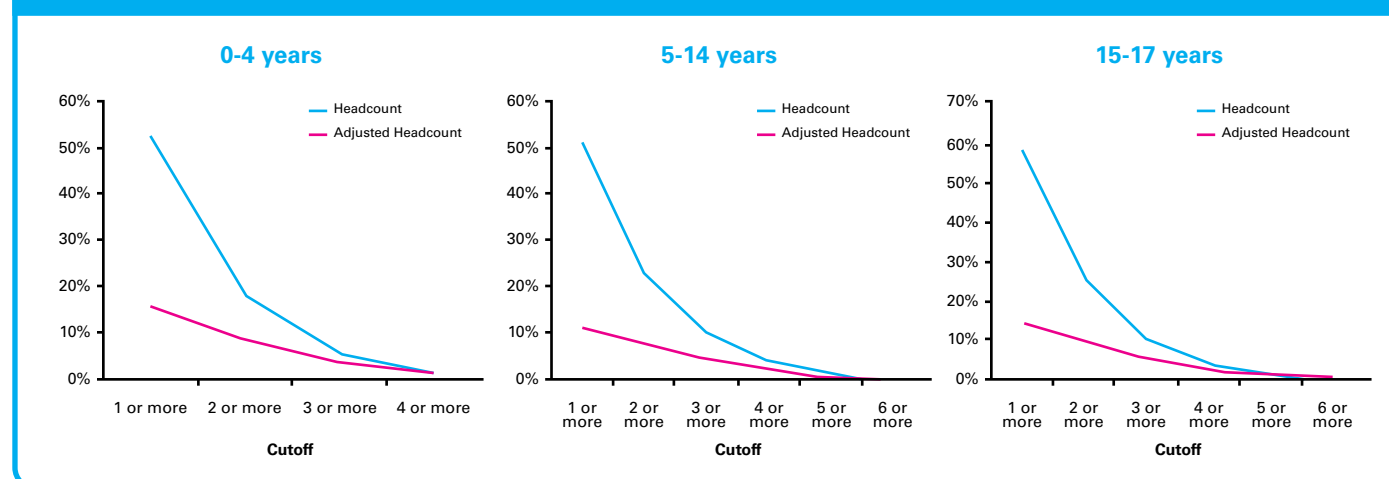
A second indicator, meant to overcome  $H$ 's drawbacks, is the average deprivation share ( $A$ ). This index is calculated as the average of the ratios of the total number of deprivations suffered by each child out of the total number of dimensions (that is the maximum number of possible simultaneous deprivations).

<sup>20</sup> Alkire and Foster (2008) provide an extensive and technical discussion.

The third indicator is the so-called adjusted headcount ratio ( $M_o$ ). This is calculated as the product of  $H$  times  $A$ . A number of advantages are associated with  $M_o$ . In the first place,  $M_o$  is sensitive to both the frequency and the intensity of multidimensional poverty. The single most important characteristic of the  $M_o$ , however, is that it satisfies the axiom of “dimensional monotonicity,” which “suggests that in a situation where a multidimensionally poor child increases his or her poverty by becoming deprived in a dimension on which he or she was previously not deprived, overall poverty levels will increase.” (Alkire and Foster, 2008: 11) A second advantage is that  $M_o$  is decomposable, which suggests that “overall poverty to be a weighted average of subgroup poverty levels, where weights are subgroup population shares.” (*ibid*) As we will see shortly, these properties are key to profiling the poor and helping policymakers to design anti-poverty policies.

### 4.2.3 Identifying Pockets of Multidimensional Child Poverty

Figure 4.8: Multidimensional Deprivation Headcounts as a Function of Different Cut-offs, by Age Group



Source: UNICEF estimates based on 2012 IHSES

According to UNICEF estimates (Figure 4.8, left panel), 52.3% of children aged 0-4 suffer from one or more deprivations. The incidence of multiple deprivations remains at a similar level for children aged 5-14 (51%, central panel), but reaches a high at 58% for the older age group (right panel). Interestingly, while  $H$  is similar between the first and the second age group when  $k=1$  (52% versus 51%, respectively),  $M_o$  is high for the infants, meaning that the average deprivation share is particularly high for this group. Figure 4.8 shows the estimated values for  $H$  and  $M_o$  for each age group, and for different cut-off points used to identify the multidimensionally deprived children in Iraq.

Our analysis shows that 18% of children in the youngest age group are deprived with a cut-off of (at least) two dimensions. For older children about one out of four children suffer from multi-dimensional poverty (if we consider  $k=2$ ), with an average deprivation share between 30-37%. The prevalence of multiple deprivations is lower among infants than among older children, but for older children the depth of multiple deprivations is significantly higher.

Finally, we consider deprivation defined when a child is deprived in at least three (instead of two) dimensions, the  $H$  index reduces sharply, while the  $A$  index increases. The net result is that  $M_o$  reduces by almost a half, but the pattern and the ranking across age groups are unaffected. Table 4.12 shows the estimated values of  $H$ ,  $A$  and  $M_o$  for different cut-off points (together with the corresponding minimum dimensions a child must be deprived in to be considered multi-dimensionally deprived).

**Table 4.12: MODA Results by Cut-off and Age Group**

Age Group	Number of Dimensions	<i>H</i>	<i>A</i>	<i>M<sub>0</sub></i>
0-4 years	At least 2	18	48	9
	At least 3	6	65	4
5-14 years	At least 2	24	34	8
	At least 3	10	45	5
5-17 years	At least 2	25	37	9
	At least 3	10	50	5

Source: UNICEF estimates based on 2012 IHSES

#### 4.1.4 Multiple Deprivations Across Age Groups in Nutrition, Housing and Water

A key finding is that nutrition, water and housing are the dimensions that contribute the most to the overall index for the youngest group. When we focus on more severely deprived children, (three or more deprivations) water and housing increase their relative importance (and the relative importance of nutrition decreases). As for children aged 5-14, education, water, housing and health play a key role (and the results are robust when switching from two to three deprivations). As for adolescents, the most relevant dimensions are the same as those of the primary-school aged children, with the exception of information, which now becomes more relevant than health. For the most deprived among adolescents, education reduces its relevance, whilst the relevance of water and housing increases. Table 4.13 shows the contribution of single dimensions to the overall index (*M<sub>0</sub>*) when the cut-off changes from two to three dimensions.

**Table 4.13: Contribution to *M<sub>0</sub>* by Group Age and Cut-off**

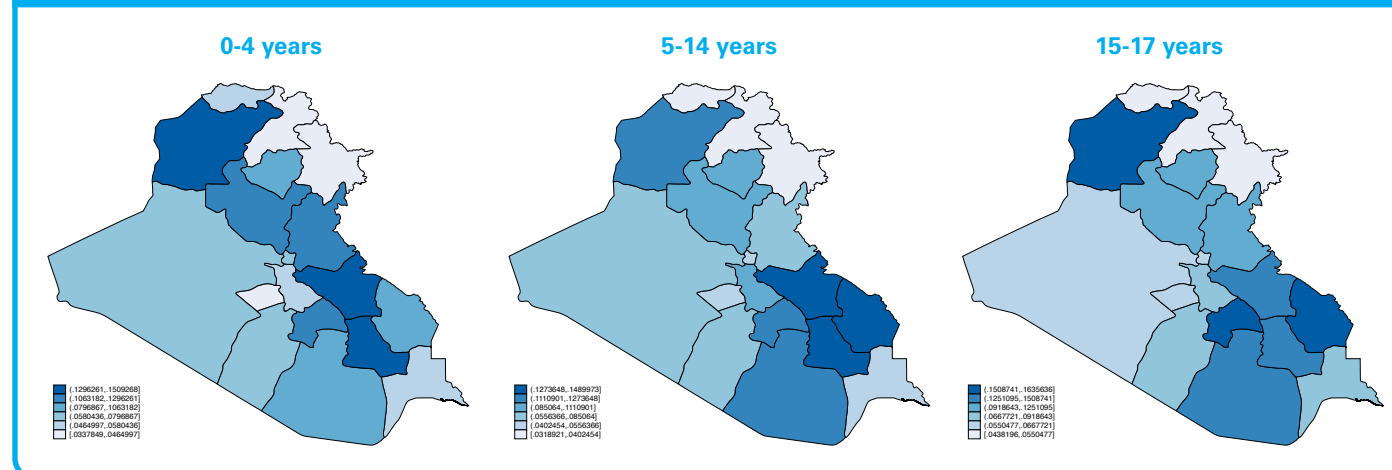
Age Group						
	0-4 years		5-14 years		15-17 years	
	<i>K</i> =2	<i>K</i> =3	<i>K</i> =2	<i>K</i> =3	<i>K</i> =2	<i>K</i> =3
<b>Nutrition</b>	25.8	21.7	11.6	11.5	11.6	11.7
<b>Health</b>	18.3	18.7	11.7	11.8	10.7	11.9
<b>Water</b>	25.6	27.2	19.7	19.8	17.3	19.1
<b>Sanitation</b>	7.8	8.0	4.7	4.9	4.8	4.4
<b>Housing</b>	22.5	24.4	16.4	16.7	14.5	16.5
<b>Information</b>			7.4	7.4	15.9	14.8
<b>Education</b>		17.9	17.6	25.3	21.7	
<b>Protection</b>		10.5	10.3			
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: UNICEF estimates on 2012 IHSES

### 4.2.5 Multidimensional Deprivation by Governorate

Figure 4.9 shows, for each age group, the value of  $M_0$  by governorate. Multi-dimensional poverty is concentrated in certain governorates—notably, Ninewa and Wassit—while others, such as, Erbil, Kerbela and Sulaimaniyah, show lower values across all the age groups.

Figure 4.9:  $M_0$  Deprivation Rates by Age Group and Governorate



Source: UNICEF estimates based on 2012 IHSES. Note: the dark colour denotes high  $M_0$  rates. The cut-off is  $k=2$ , that is, at least two deprivations

Table 4.14 shows that the Kurdistan region systematically has the lowest values for both  $H$  and  $M_0$ .

Table 4.14:  $H$ ,  $A$  and  $M_0$  Deprivation Rates (%) by Region

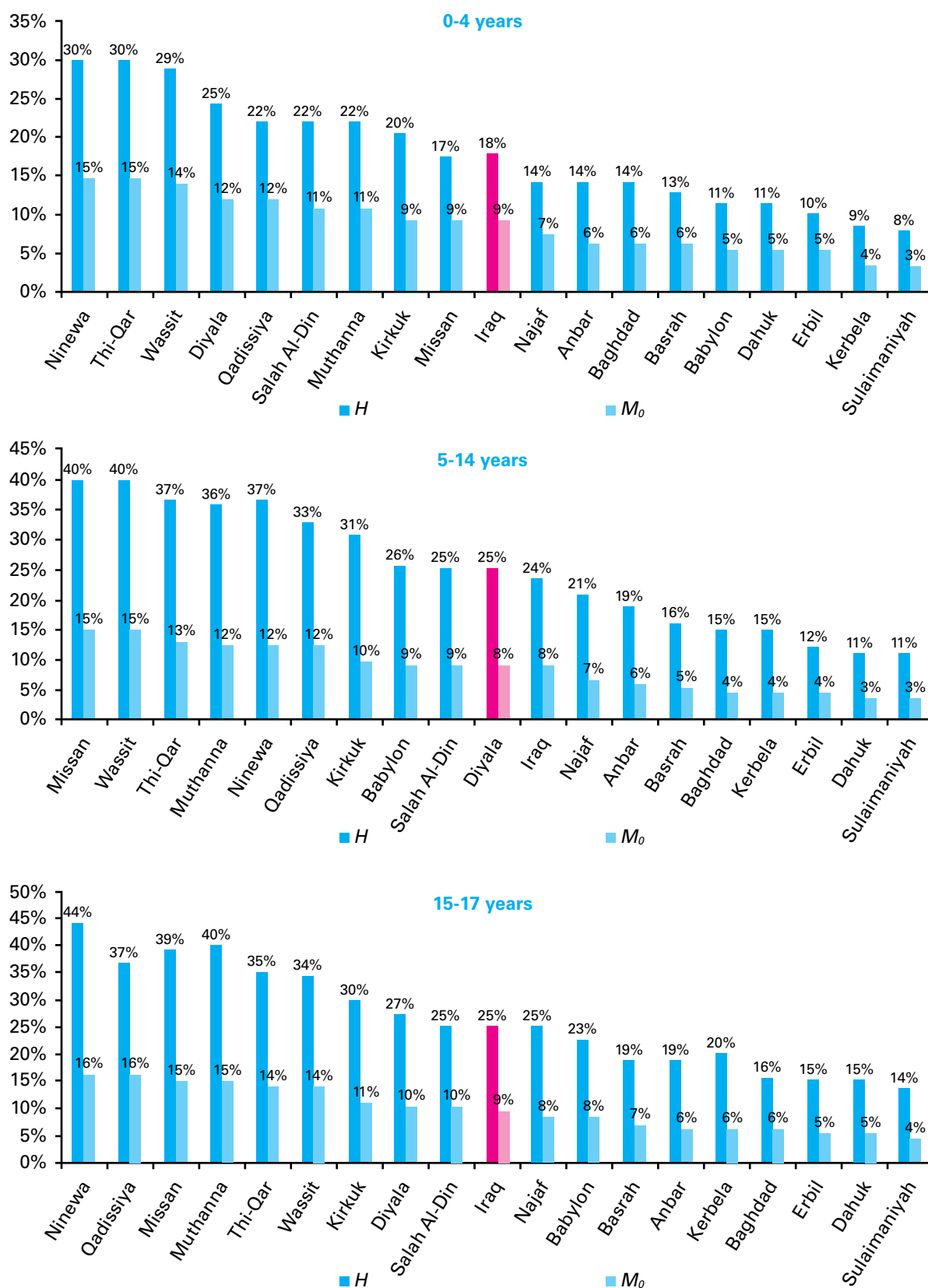
	0-4 years			5-14 years			15-17 years		
	$H$	$A$	$M_0$	$H$	$A$	$M_0$	$H$	$A$	$M_0$
KR-I	9	44	4	11	30	3	15	33	5
Baghdad	14	43	6	15	30	4	16	35	6
Rest of Iraq	20	49	10	28	34	10	30	38	11
Iraq	18	48	9	24	34	8	25	37	9

Source: UNICEF estimates based on 2012 IHSES. The cut-off is  $k=2$ , that is, at least two deprivations

The governorates of Ninewa, Thi-Qar and Wassit have the highest indices of multidimensional deprivation for children under five years old. For primary-school aged children, Missan, Wassit and Thi-Qar stand out for the high levels of both indices. Ninewa, Qadissiya and Missan have the highest levels of multidimensional deprivation for children aged 15-17. In contrast, Sulaimaniyah, Dahuk and Erbil show the lowest values for all indices, irrespective of age group. Figure 4.10 shows the values of both  $H$  and  $M_0$  for each governorate and age group, after sorting the governorates by the decreasing values of  $M_0$  (red bars represent Iraq overall).

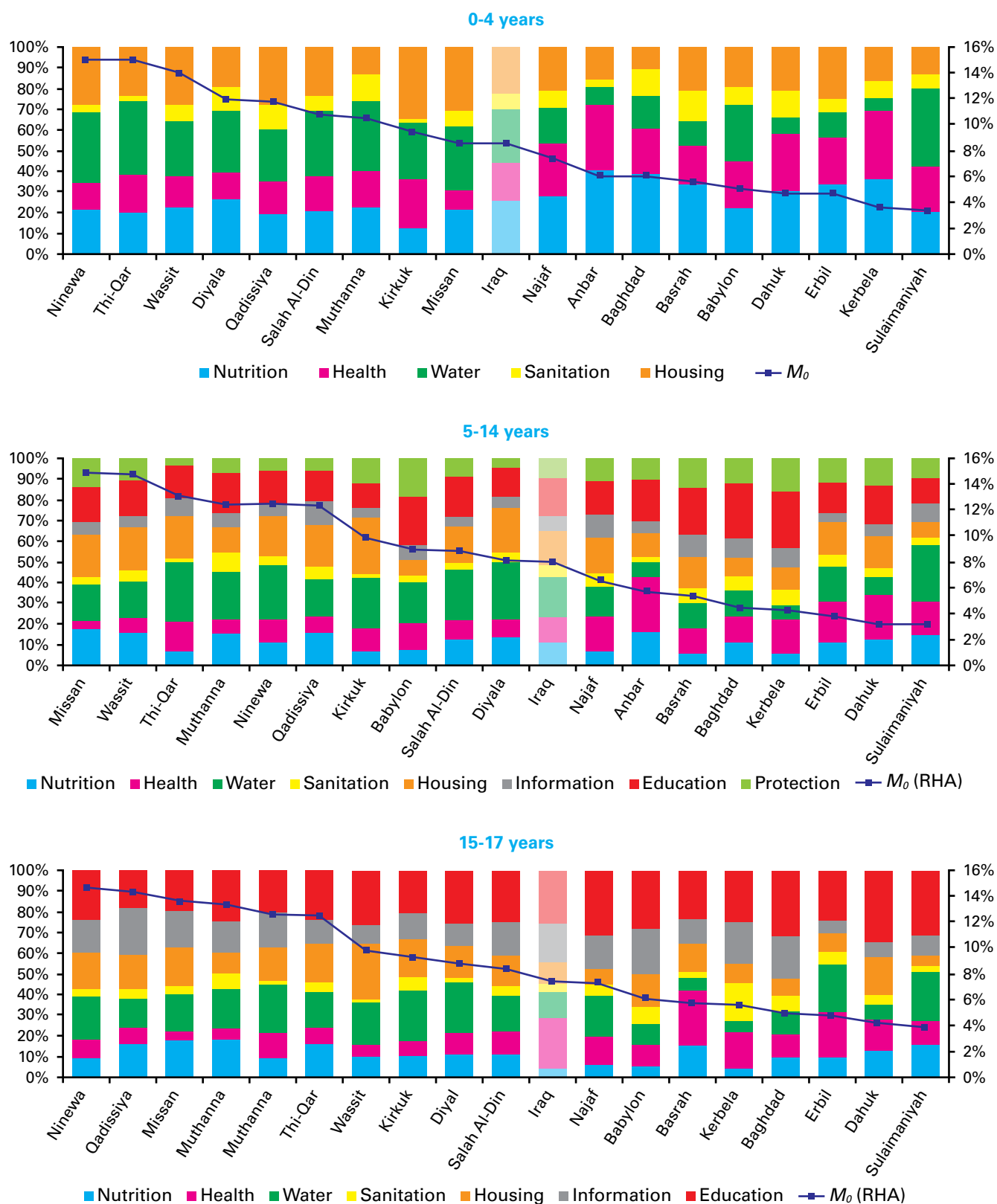
For each governorate and for different age categories, there is a single dimension to the overall  $M_0$  index. Despite the apparent complexity of the figure, a clear pattern emerges. Water and housing stand out as the most relevant dimensions associated with child deprivation in governorates characterized by high overall levels of the adjusted headcount ( $M_0$ ). Water and housing are responsible for the high levels of multidimensional poverty observed in the worse off governorates. Interestingly, nutrition increases its relevance in those governorates where  $M_0$  is relatively low, especially for infants. Nutritionally deprived children are more often found in those governorates where children do not suffer from multiple deprivations simultaneously. If we focus on the second and third age groups, the deprivation in information is more relevant in governorates with the highest levels of multidimensional deprivation.

Figure 4.10:  $H$  and  $M_0$  (%) by Age Group and Governorate



Source: UNICEF estimates based on 2012 IHSES. The cut-off is  $k=2$ , that is, at least two deprivations

Figure 4:11: Contribution of a Single Dimension to the Overall  $M_0$  by Governorate



Source: UNICEF estimates based on 2012 IHSES. The cut-off is  $k=2$ , that is, at least two deprivations



### 4.2.6 Urban-Rural Dimensions of Child Poverty

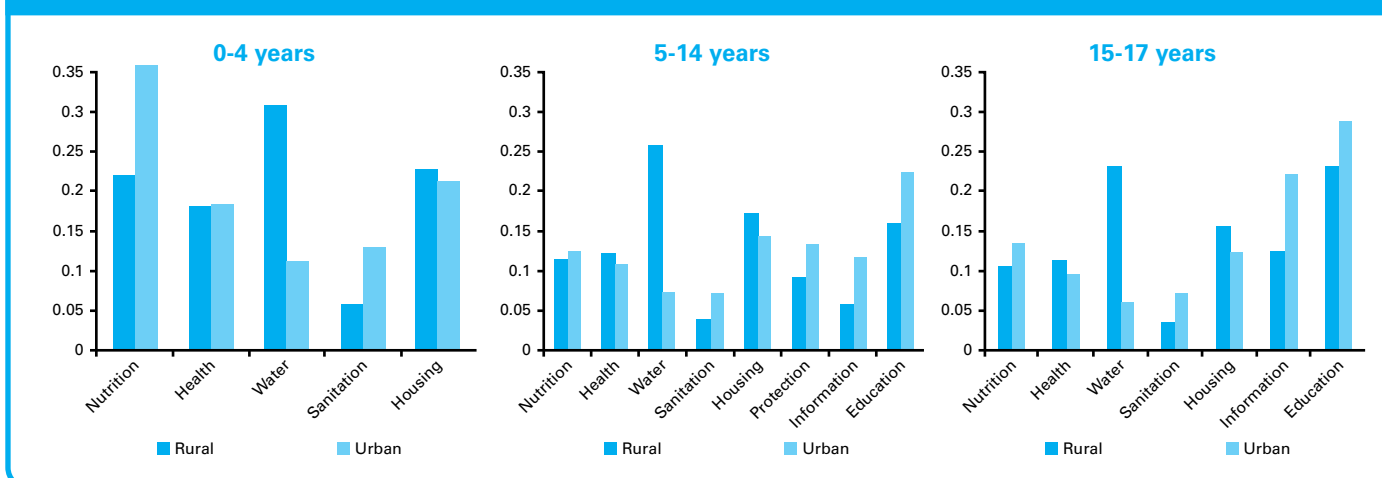
Table 4.15 shows the extent that the three MODA indices differ between urban and rural areas.

Table 4.15: $H$ , $A$ and $M_o$ (%), by Urban and Rural Areas									
	0-4 years			5-14 years			15-17 years		
	$H$	$A$	$M_o$	$H$	$A$	$M_o$	$H$	$A$	$M_o$
Rural	35	50	18	45	36	16	47	40	19
Urban	8	43	4	12	29	3	15	33	5
Iraq	18	48	9	24	34	8	25	37	9

Source: UNICEF estimates based on 2012 IHSES. The cut-off is  $k=2$ , that is, at least two deprivations

Young children ages 0-4 years old in rural areas are mostly affected by deprivation in water, while those in urban areas are mainly affected by food deprivation. Primary-school aged children in urban areas are particularly deprived in the dimensions of education, protection from exploitation and access to information, whilst those from rural area are deprived in the dimensions of housing and access to improved water sources. For children aged 15-17, education and access to information play a key role in urban areas, while water is again the most important deprivation domain in rural areas. The main conclusion here is that access to improved water sources is the single most important driving factor behind the urban-rural gap as measured by the MODA. Figure 4.12 shows which deprivation is driving the urban advantage by estimating the contribution to the overall index of each dimension.

Figure 4.12: Contribution of Single Dimensions to the Overall Index by Environment



Source: UNICEF estimates based on 2012 IHSES

## 4.3 Profile of Multi-Dimensionally Deprived Children

In this section, we conclude the MODA analysis by investigating, via a standard logistic model, the probability of being multidimensionally deprived. We analyze which factors have more power in explaining the observed (adjusted) incidence of multidimensional poverty. We regressed the index  $M_o$  on a set of socio-economic variables in order to seek answers.

The age of the household head is a particularly significant variable in explaining the probability to be multi-dimensionally deprived in children under 14 years old. For children aged 0-14, the highest risk is associated with the fact that they live in households headed by young breadwinners. The risk then decreases linearly with the age of the household head.

The education level of the household head plays a key role. The risk of multidimensional poverty linearly decreases with the degree educational attainment of the household head. When the head of household has a diploma or a higher degree the risk of multidimensional deprivation reduces sharply, from about 30% when the head is illiterate to 17.5% in the presence of a head of household with at least a diploma.

The employment status of the head of household is particularly significant for children under 14 years old, while for the oldest group the risk seems similarly distributed among different labour statuses. In general, a higher risk of multidimensional deprivation is observed when the head of household is out of the labour force for children ages 0-4 years old. For primary-school aged children, the highest risk is observed when the head of household is unemployed. For all three age groups, the risk of deprivation significantly increases when the head of household is employed in the agricultural sector and reduces sharply when the head of household works in a governmental sector.

Among household characteristics, size is the single most important factor. In small households, (one to four members) the risk of children suffering multidimensional deprivations is almost half than in large households. The risk is higher when several children (more than three) live in the same household. Interestingly, the risk follows a u-shape when it comes to the analysis of the number of household members in employment, meaning that the risk is higher in households without an employed member or in households with several adults that declare to have worked at least one hour during the last week. This result is quite common in other countries and can be related to job quality and productivity: multidimensionally deprived children tend to concentrate either in households with high economic dependency ratios or in households where most adults work but in unskilled and low-paid sectors.

Children living in rural areas have a significantly higher risk of being multidimensionally deprived. The governorates with the highest risk are Thi-Qar, Kirkuk and Wassit for children under five years old, Wassit, Kirkuk and Ninewa for primary-school aged children and Ninewa, Kirkuk and Najaf for adolescent boys and girls (aged 15-17). Gender plays a significant role only for primary-school children, where the girls show a significantly higher risk of deprivation than boys.

Regression estimates suggest that the risk of poverty is significantly higher for children who live in households that do not receive any public social transfer or public pensions, which might be interpreted as the need of better targeting of cash transfers targeting poor households. There is a clear negative and significant gradient between the risk of children experiencing multidimensional deprivation and real PCE. Children living in monetary-poor households have a significantly higher risk than children living in relatively monetary-rich households. This is a clear sign that monetary and material deprivation are strongly related.

**Table 4.16: Average Marginal Probabilities for the Risk of Multidimensional Deprivation**

	0-4 years	5-14 years	15-17 years
<b>Age</b>			
0-29 (reference category)	0.220	0.273	
30-39	0.187***	0.24***	
40-49	0.189***	0.239***	
50-59	0.137***	0.223***	
60-69	0.139***	0.207***	
70+	0.135***	0.175***	
<b>Education</b>			
No title (reference category)	0.206	0.270	0.285

**Table 4.16: Average Marginal Probabilities for the Risk of Multidimensional Deprivation**

	0-4 years	5-14 years	15-17 years
Elementary	0.180***	0.226***	0.243***
Intermediate/secondary	0.129***	0.204***	0.227***
Diploma or higher	0.109***	0.160***	0.176***
<b>Employment Status</b>			
Employed (reference category)	0.174	0.223	
Unemployed	0.124***	0.270***	
Not in labour force	0.198***	0.263***	
Diploma or higher	0.109***	0.160***	
<b>Job Sector: Agriculture</b>			
No (reference category)	0.169	0.223	0.245
Yes	0.246***	0.316***	0.298***
<b>Job Sector: Industry</b>			
No (reference category)			0.254
Yes			0.208***
<b>Type of Sector: Governmental</b>			
No (reference category)	0.182	0.242	0.261
Yes	0.161***	0.207***	0.216***
<b>Household Size</b>			
1-4 (reference category)	0.241	0.340	
5-6	0.191***	0.304**	0.341
7-9	0.169***	0.24***	0.267***
10-11	0.162***	0.222***	0.234***
12-14	0.127***	0.156***	0.178***
15+	0.193**	0.186***	0.164***
<b>Number of Children</b>			
1 (reference category)		0.173	0.183
2	0.149	0.178	0.217**
3	0.155**	0.187	0.225***
5-6	0.168***	0.24***	0.262***
7+	0.247***	0.301***	0.318***

**Table 4.16: Average Marginal Probabilities for the Risk of Multidimensional Deprivation**

	0-4 years	5-14 years	15-17 years
<b>Number of Members in Employment</b>			
0 (reference category)	0.222	0.227	0.284
1	0.175***	0.21	0.238***
2	0.167***	0.227	0.22***
3	0.179***	0.29***	0.261
4	0.156***	0.273***	0.274
5+	0.19	0.374***	0.371***
<b>Environment</b>			
Rural (reference category)	0.291	0.355	0.381
Urban	0.098***	0.146***	0.174***
<b>Governorate</b>			
Baghdad (reference category)	0.209	0.224	0.220
Dahuk	0.143***	0.15***	0.207
Ninewa	0.222	0.294***	0.351***
Sulaimaniyah	0.16***	0.198***	0.246
Kirkuk	0.23	0.307***	0.306***
Erbil	0.183	0.224	0.253
Diyala	0.222	0.228	0.228
Anbar	0.112***	0.164***	0.181**
Babil	0.086***	0.188***	0.167***
Kerbela	0.102***	0.176***	0.208
Wassit	0.227	0.304***	0.295***
Salah al-Din	0.173***	0.218	0.235
Najaf	0.142***	0.223	0.293***
Qadissiya	0.158***	0.234	0.248
Muthanna	0.114***	0.192***	0.214
Thi-Qar	0.229	0.273***	0.269***
Missan	0.142***	0.308***	0.302***
Basrah	0.166***	0.203**	0.236

**Table 4.16: Average Marginal Probabilities for the Risk of Multidimensional Deprivation**

	0-4 years	5-14 years	15-17 years
<b>Gender</b>			
Girl (reference category)		0.242	
Boy		0.224***	
<b>Family Receives Public Social Transfers</b>			
No (reference category)	0.156	0.222	
Yes	0.183***	0.236***	
<b>Family Receives Public Pensions</b>			
No (reference category)	0.184	0.237	
Yes	0.146***	0.215***	
<b>Quintile of Real PCE</b>			
1 (reference category)	0.251	0.362	0.451
2	0.172***	0.226***	0.275***
3	0.152***	0.184***	0.2***
4	0.116***	0.133***	0.137***
5	0.113***	0.121***	0.086***

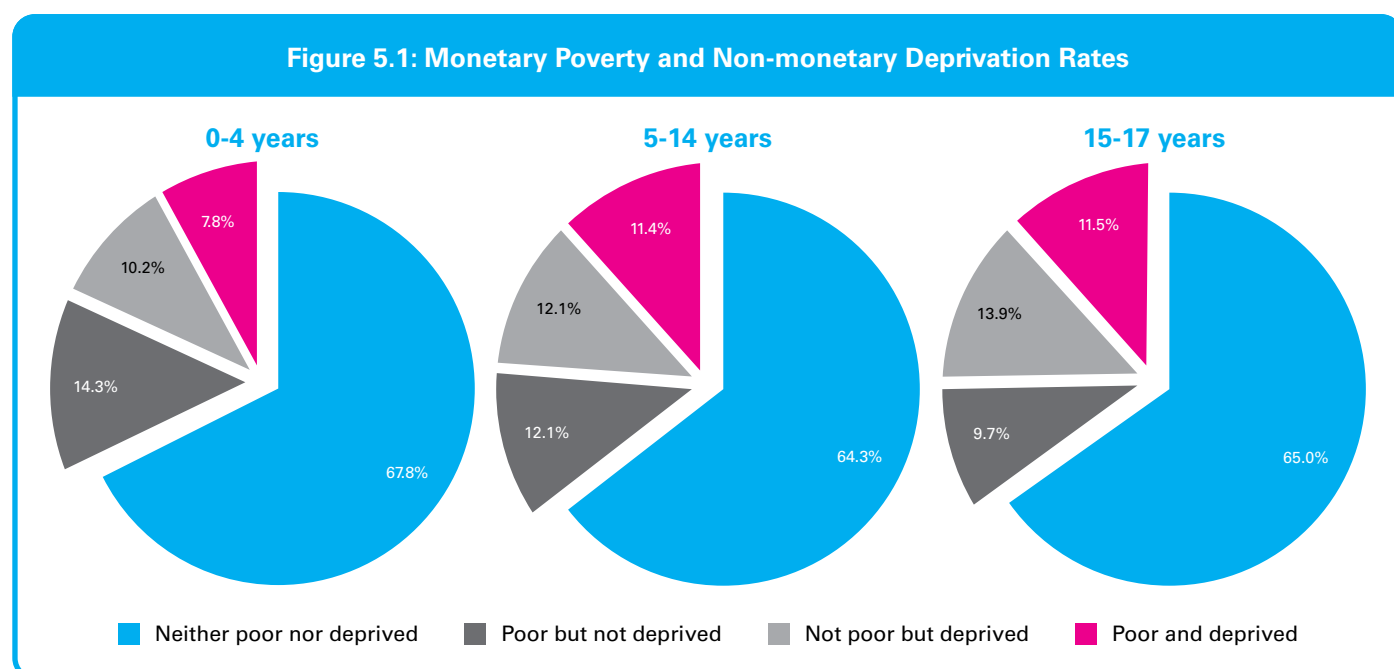
Source: UNICEF estimates based on 2012 IHSES. Notes: \*\*\* (\*\*) means that the average marginal probability is statistically different from that of the reference category at 95% (90%) confidence. Standard errors computed with the Delta method

## 5 Linkages Between Child Monetary Poverty and Child Deprivation

Our findings show that there is a group of children who are deprived, but according to conventional analyses, are not considered monetary poor. Traditional analyses focus on the poverty line, but tend to miss this important group of children. In this section we further investigate the relationship between monetary and non-monetary child poverty by means of an innovative regression-based method inspired by Calderón-Mejía and Evans (2014). The key idea is to compare the overall consumption distribution of households with and without deprived children, in order to avoid the typical comparison between poor and not-poor children - a comparison that often fails to capture the complex relationship among different kinds of deprivations. The use of dichotomous indicators for the monetary-poor status and material deprivation status typically leads researchers to group children into four groups: (1) children who are both monetary poor and deprived; (2) children who are deprived but not monetary-poor; (3) children who are monetary poor but not deprived; and finally (4) children who are neither monetary poor nor deprived.

### 5.1 Methodology for a New Regression Model

Figure 5.1 shows the results applied to Iraqi children when the national poverty line of 105,500 ID/person/month is used as a benchmark to identify monetary-poor children and multi-dimensionally deprived children (suffering two or more deprivations, as defined in the previous section). In order to develop policy recommendations about improvements of targeting tests, we need to capture the real standard of living of children. In this section, we explore a new method where monetary poverty is integrated with non-monetary deprivation analysis.

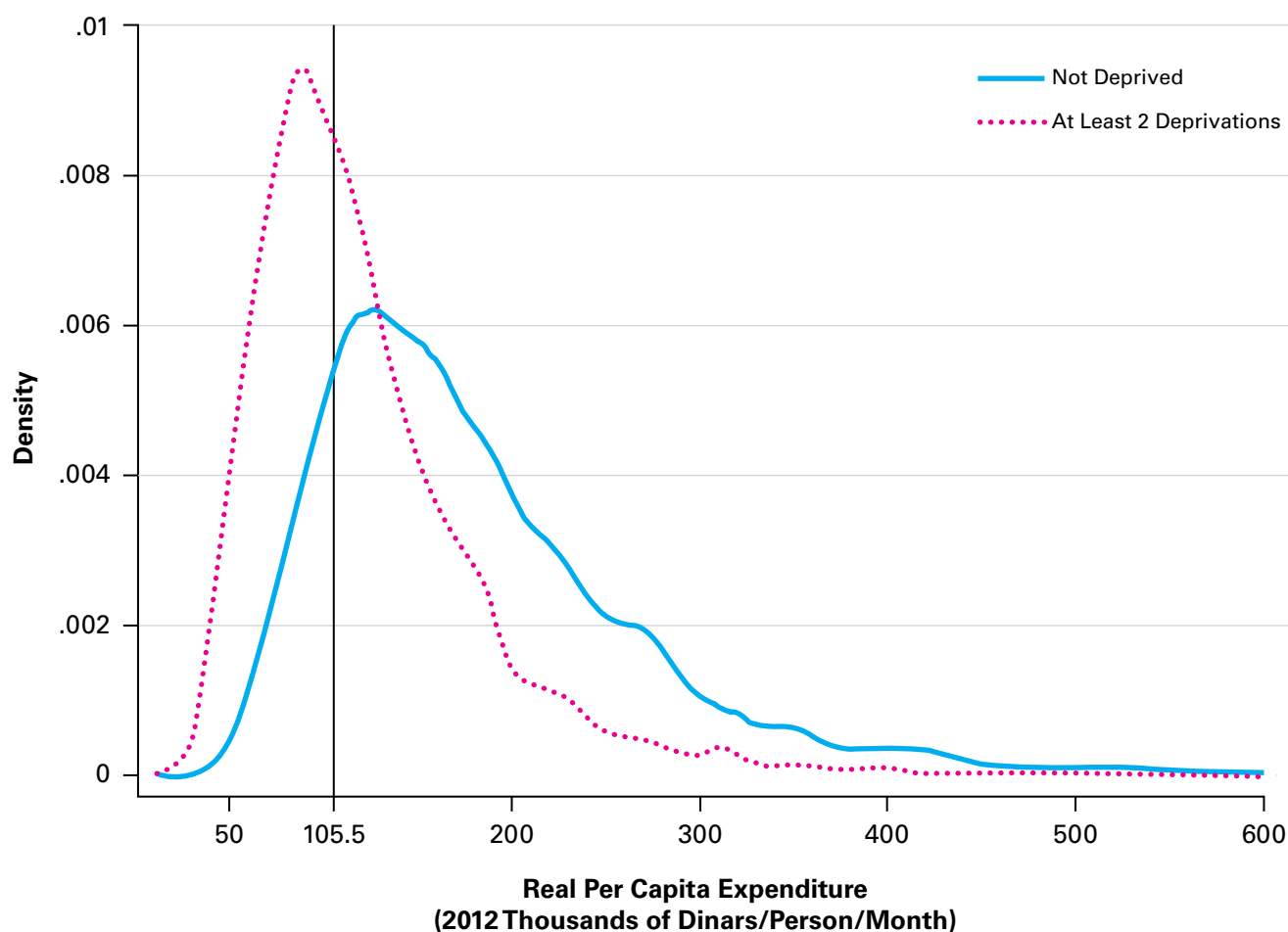


*Source: UNICEF estimates based on 2012 IHSES. Note: A child is considered deprived here if s/he is deprived in at least two dimensions (as defined in the previous sections)*

Calderón-Mejía and Evans (2014) suggest comparing the overall distribution of household expenditures between deprived and non-deprived households, because this can be more informative in terms of identifying the differences in the well-being of the four categories.

In Figure 5.2, we illustrate this methodology. The figure compares the distribution of PCE for two categories of children: those that are multidimensionally deprived in two or more dimensions (red dashed line) and those that are not deprived (black solid line). The vertical line in the graph represents the Iraqi National Poverty Line (NPL).

Figure 5.2: Kernel Densities of Expenditure by Deprivation Status



Source: UNICEF estimates based on 2012 IHSES

The two densities are clearly different. The distribution of PCE of the deprived children is more skewed to the right, which means that these children's households have lower expenditures, on average, than non-deprived children. However, the peaks of the two densities are close to each other, and the overlap between the two is substantial. Moreover, the poverty line happens to fall in-between the peaks of the two distributions, implying that a small change of its value would significantly change the number of children defined as "monetary poor."

## 5.2 The "Near Poor" Children

The overall distribution of expenditure between deprived and non-deprived children can be used to identify a set of thresholds for means tests. Calderón-Mejía and Evans (2014) use the above framework to identify a new poverty line that aims to identify children that are not monetary poor but deprived in material terms. They refer to this category as the "near poor."

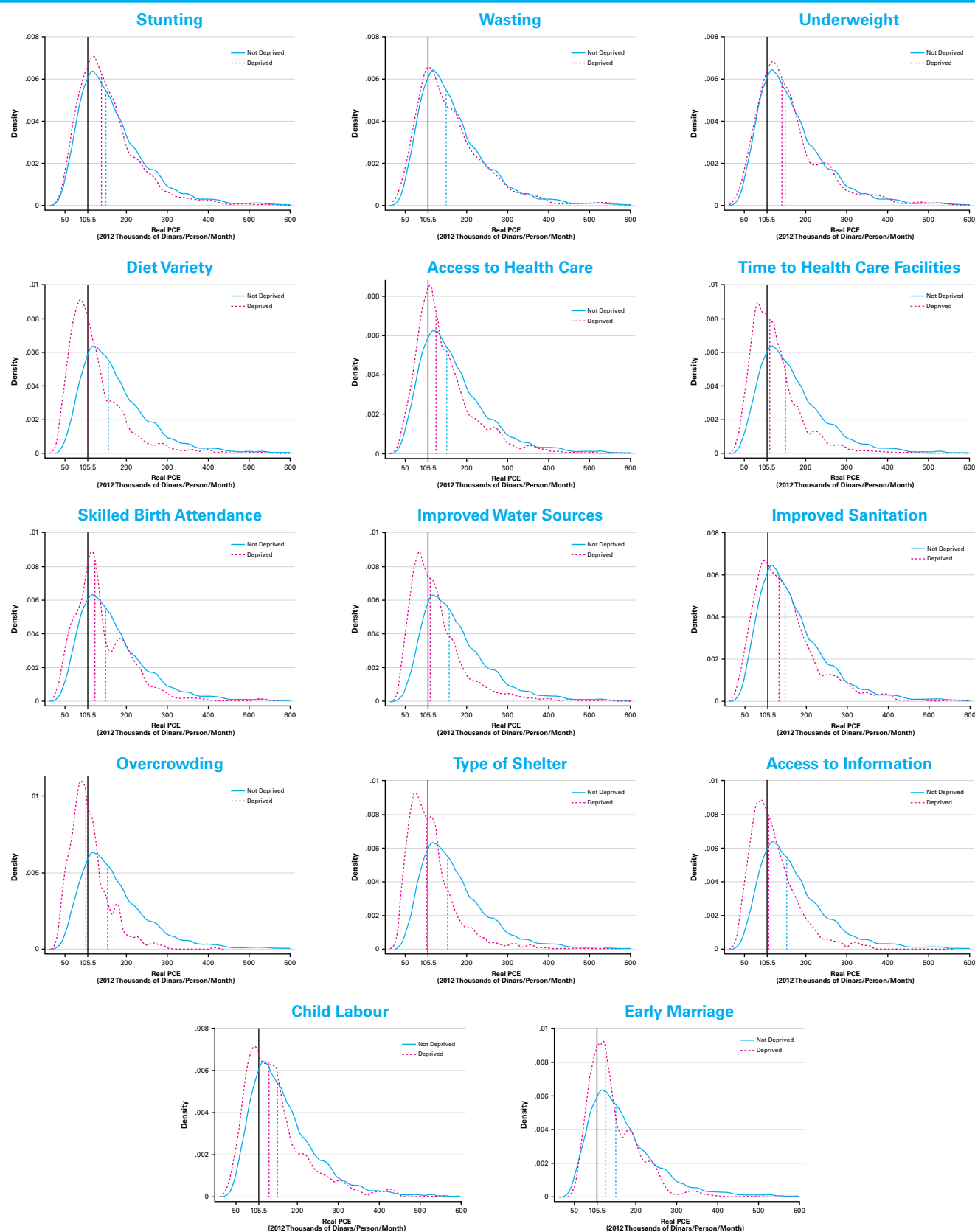
While attention to the near poor is not new, Calderón-Mejía and Evans (2014) have come up with an ingenious method that leads to the identification of an expenditure cut-off, which marks the upper limit of consumption after which a child is likely to be defined as not poor. Near poor households are therefore those households with consumption levels above the poverty line but below the upper limit found by comparing the deprived with non-deprived consumption density distributions. In the following pages, we build on the methodology of Calderón-Mejía and Evans (2014) and apply it to Iraqi children.

The pattern common to all graphs in Figure 5.3 is that non-monetary deprived households have a lower PCE than households which are not deprived: the dotted vertical bars denote the mean PCE of each distribution and show that, without exception, deprived households achieve—on average—a lower monetary living standard than non-deprived households. Further, first-order stochastic dominance (FOD) is observed for all pairwise comparisons: without exception, the non-deprived stochastically dominate the deprived in the first order.

A larger number of poor children are found below the poverty line, once an allowance is made for non-monetary deprivation. Figure 5.4 illustrates the case of stunting. The main implication of this result is that monetary poverty only captures part of the story: the FOD implies that irrespective of the poverty line, the incidence of poverty among deprived households is higher than non-deprived households.

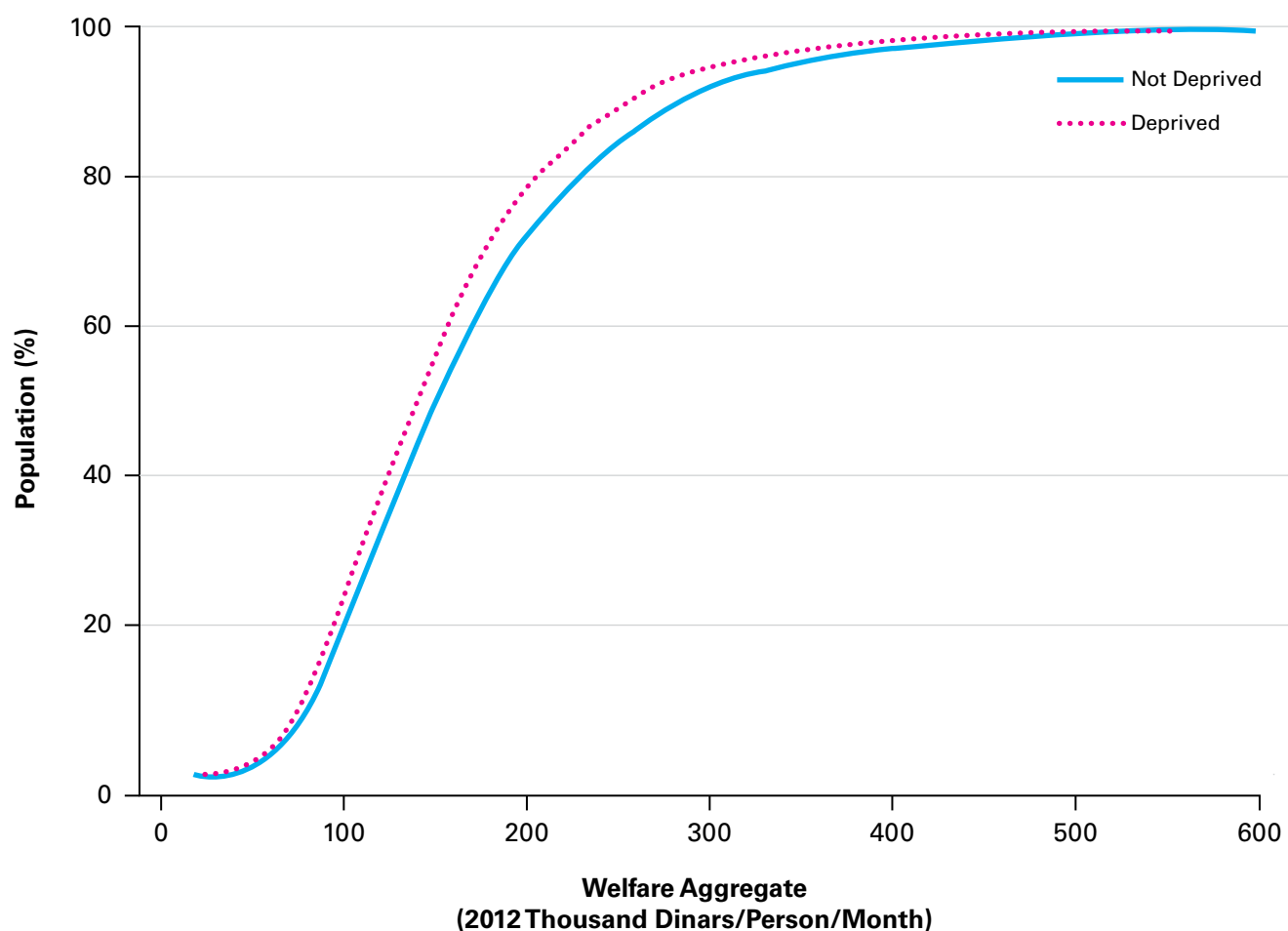


Figure 5.3: Kernel Densities of Expenditure by Deprivation Status



Source: UNICEF calculations in 2012 IHSES

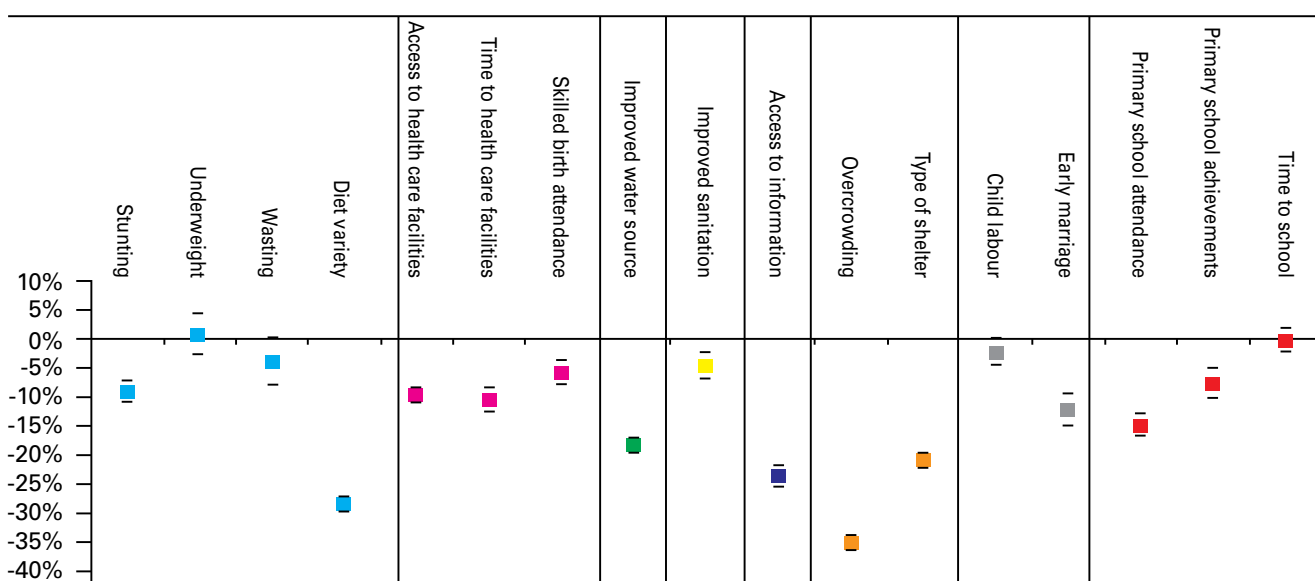
**Figure 5.4: Cumulative Density Functions for Nutrition-deprived and Non-deprived Children (Stunting)**



Source: UNICEF calculations on 2012 IHSES

We looked at whether the number of monetary poor households increases significantly after accounting for non-monetary deprivation. We estimated the monetary impact of non-monetary deprivations. To this purpose we calculate the elasticity of PCE to each deprivation by means of a simple OLS (i.e., ordinary least squares) regression of (log) per capita consumption on the set of deprivation indicators. Figure 5.5 shows the estimated coefficients. The average percentage variation of consumption associated with each deprivation is negative and significantly different from zero for all indicators but one (underweight, which is not significantly different from zero).

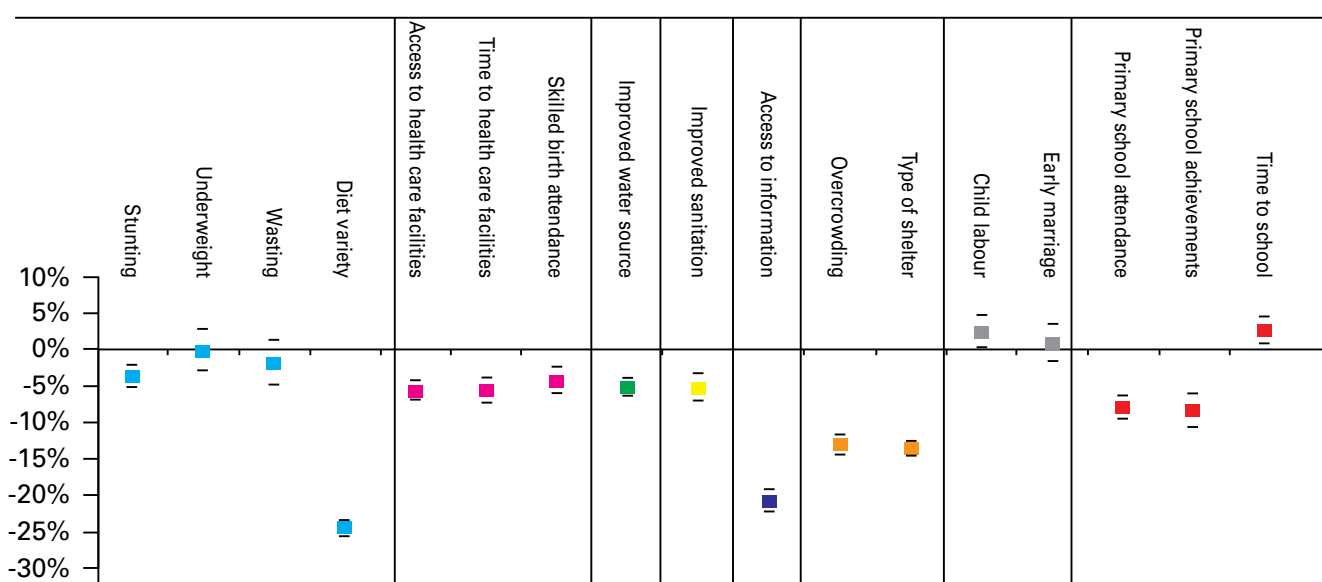
**Figure 5.5: Elasticities of Consumption to Deprivation Conditional to the Whole Set of Deprivations**



Source: UNICEF calculations on 2012 IHSES, sample of all children. The horizontal bars above and below each indicator represent the 95% confidence interval.  $R^2 = .19$

Here, it is worth pointing out that the deprivations associated with low levels of consumption are especially those related with overcrowding, type of dwelling, primary school attendance, access to information and diet diversity. Therefore, children subject to these kinds of deprivations should be targeted, given that they are more likely to be deprived in these dimensions (nutrition, housing, education and information), and they face a more significant risk of monetary poverty.

**Figure 5.6: Elasticities of Consumption to Deprivation Conditional to the Whole Set of Deprivations and a Large Set of Socio-economic Variables**



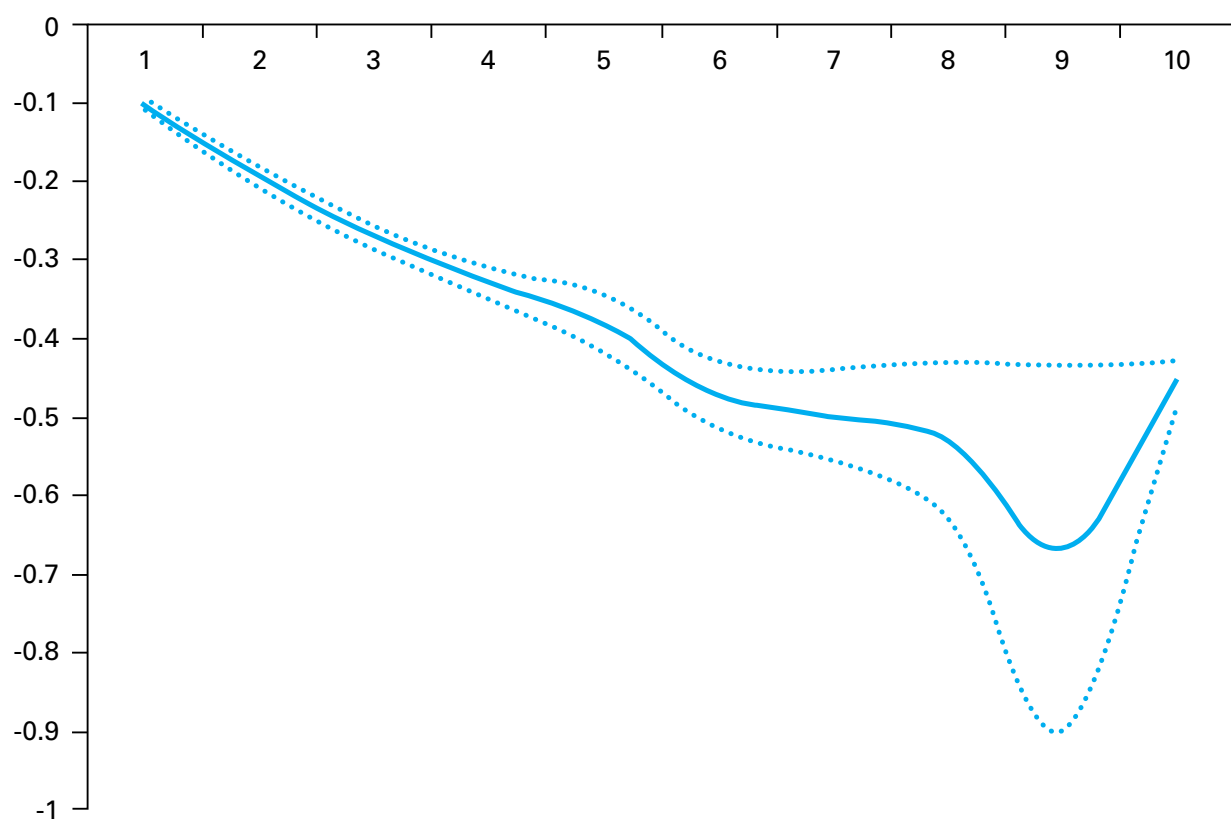
Source: UNICEF calculations on 2012 IHSES, sample of all children. The horizontal bars above and below each indicator represent the 95% confidence interval.  $R^2 = .495$

Most elasticities are still highly significant and negative, but with a lower magnitude with respect to the previous estimates. This is due to the fact that we are now netting out the effects of other characteristics that jointly (and positively) interact with the deprivation status and the consumption level.<sup>21</sup>

We sought to identify and account for households who escape the count of the poor when a traditional poverty line is considered. Schematically our method can be described as follows: in step 1, a (log) consumption regression model is estimated as a function of standard socio-demographic and economic characteristics (the same we used for the estimates showed in Figure 5.6) plus a categorical variable for the number of total overlapping deprivations experienced by the child. This variable enters the regression model as a set of binary variables, the reference group being always a child without any kind of deprivation.

The coefficients associated with the dummies, with the total number of overlapping deprivations, play a central role in our method. Their economic interpretation is straightforward, as they measure the impact on (log) consumption associated with suffering more and more simultaneous deprivations regarding the baseline case where no deprivation is experienced. Figure 5.7 illustrates that a child suffering from only one deprivation is associated with a lower PCE of about 10% than a child without any deprivation. Two deprivations, no matter in which dimension, are associated with a 19% reduction in PCE, and so forth. Children with seven simultaneous deprivations live in households with PCE 47% lower than the average of households without deprivations.

**Figure 5.7: Impact of an Increasing Number of Simultaneous Deprivations on Living Standards**



Source: UNICEF calculations on 2012 IHSES. Dotted lines represent a 95% confidence interval

Once the relationship between consumption and the severity of deprivation has been established, it is possible

<sup>21</sup> Note that the elasticity of consumption to child labour changes its sign and becomes (slightly) significant. The regression model now contains a number of explanatory variables that are negatively correlated with child labour and positively correlated with household consumption. Hence, when these variables are not included they end up in the error term of the regression creating a downward bias in the estimated coefficient. If, for example, we exclude from the model specification the education level of the household head, the estimated coefficient of child labour becomes again close to zero and not significant.

to come up with an overall estimate of the extra expenditure needed to compensate for the deprivation. The idea is based on the concept of estimated compensating variations (ECV): we use the estimated coefficients plotted in Figure 5.7 to compute the expected consumption levels associated with each degree of deprivation. Next, we derive the average level of consumption of deprived children by simply computing a weighted average of the predicted levels of their consumption, with weight given by the share of children that experience each specific level of deprivation.

Table 5.1 shows how to do it in practice. The key result is in the last row: the average consumption of deprived children is 130,840 ID/person/month, a value that is 24% higher than the Iraqi National Poverty Line. This value represents our reference number to derive a new poverty line for near-poor children.

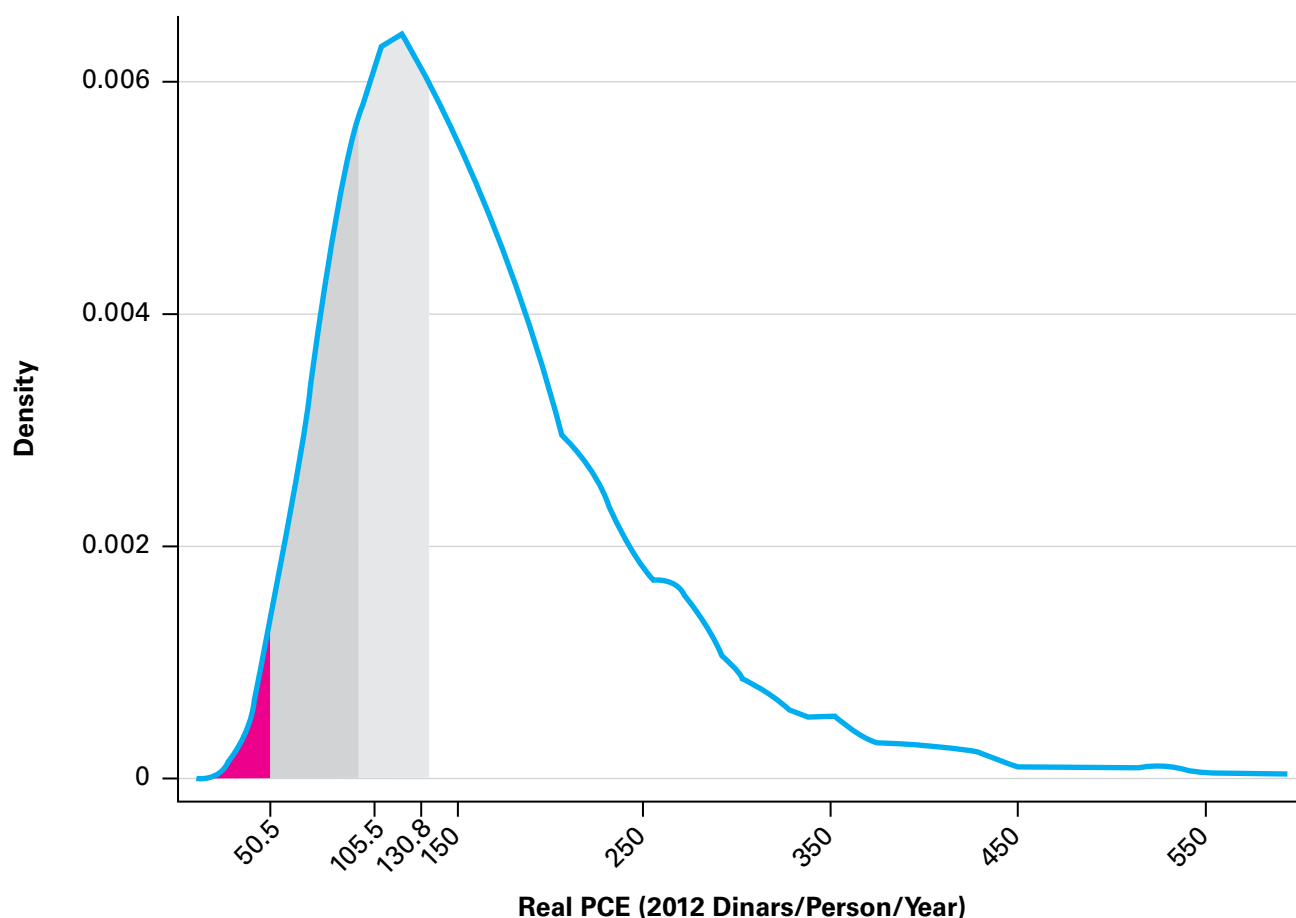
**Table 5.1: Estimated Compensating Variations (ECV) by Number of Deprivations**

Number of Simultaneous Deprivations	Predicted PCE	Share of Deprived Children	ECV
0	179.0	0.000	0.0
1	148.3	53.013	30.7
2	124.6	25.152	54.4
3	109.8	12.408	69.2
4	98.2	5.804	80.9
5	89.4	2.377	89.6
6	78.9	0.842	100.1
7	74.2	0.310	104.8
8	66.7	0.078	112.3
9	51.4	0.016	127.6
10	68.8	0.001	110.3
<b>All</b>	<b>130.84</b>	<b>100.0</b>	

Source: UNICEF estimates on 2012 IHSES

Figure 5.8 illustrates the result. In the presence of three poverty lines (food, total, and near poor), the population can be partitioned into four groups: the extremely poor (children who live in households that fall short of the food poverty line, 50,500 ID/person/year); the poor (children below the total poverty line, 105,500 ID/person/month); the near poor (children above the poverty line, but with less than 130,800 ID/person/month); and the non-poor (children with more than 130,800 ID/person/month).

Figure 5.8: Extreme Poor, Poor and Near Poor (in 1,000 IQD)



Source: UNICEF estimates in 2012 IHSES. In 1,000 IQD

Table 5.2 provides basic summary statistics of the overall number of at-risk-of-poverty children when we consider simultaneously the three poverty lines.

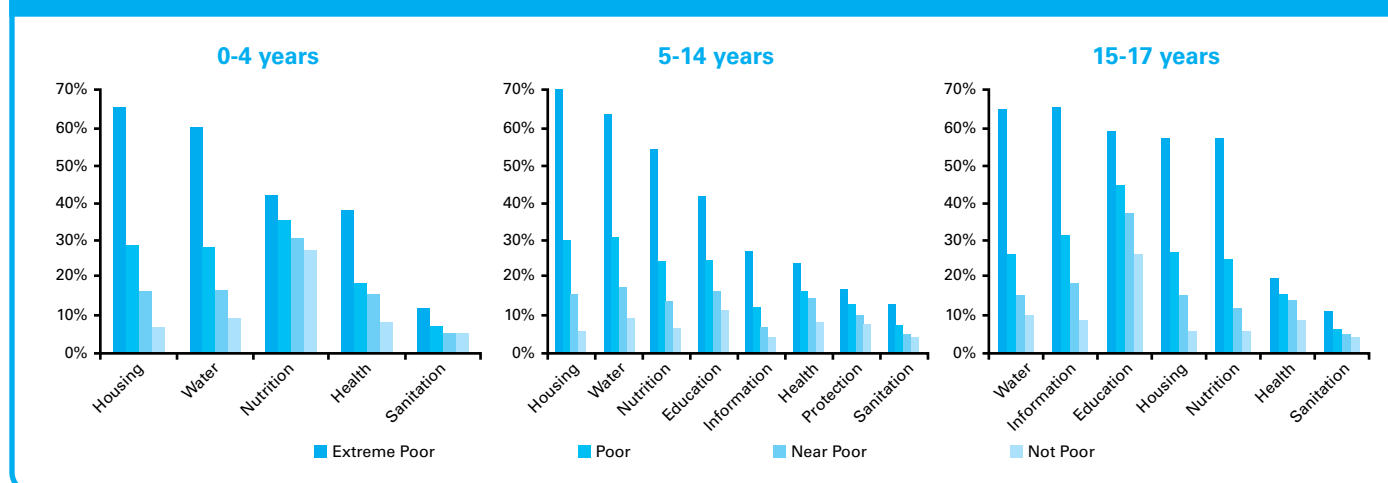
Table 5.2: Distribution of Children by Poverty Status (%)

	0-4 Years	5-14 Years	15-17 Years	Total
<b>Extremely poor</b>	1.1	1.3	1.0	1.2
<b>Poor</b>	21.0	22.2	20.2	21.6
<b>Nearly poor</b>	16.7	16.3	14.6	16.2
<b>Not poor</b>	61.2	60.2	64.2	61.1
<b>Total children at risk</b>	38.7	38.8	39.8	35.8

Source: UNICEF estimates on 2012 IHSES

The poverty groups introduced in Table 5.2 can be cross-tabulated against the eight dimensions, thereby profiling child poverty in a truly integrated way. Following Calderón-Mejía and Evans (2014), we shall refer to these graphs as to the “child deprivation gradients across poverty ranges”.

Figure 5.9: Child Deprivation Gradients Across Poverty Ranges



Source: UNICEF estimates based on IHSES 2012

Figure 5.9 shows that the likelihood of deprivation in each domain decreases linearly across poverty ranges. If we consider the first two age groups, we can see that there is a steep negative gradient in the nutrition and water dimensions: these two dimensions should therefore be given the highest priority for a policy aimed at targeting the poorest among the poor. For primary school age children, education and nutrition show a steep negative gradient, meaning that these two dimensions also deserve a high priority. Finally, for the last group, water and information emerge as high-priority domains to fight child poverty.

The last step of the analysis consists of exploring the previous results through econometric modeling. To this end, we have estimated a multinomial logistic regression for the probability of child deprivation in any of the four poverty statuses, conditioned on the same set of covariates we used to estimate the near-poor poverty line.<sup>22</sup>

Table 5.3 shows the so-called “relative risk ratios” (RR) estimated by the model. RR ratios represent the (relative) probability of being in a given category (e.g., the extremely poor, the poor or the near poor) with respect to the baseline category, which in our case is non-poor children.<sup>23</sup> Thus, whenever the value is higher than one, the risk is higher than that of the reference category; the bigger the value, the higher the risk.

For instance, for children who are deprived in nutrition, 6.6 represents the relative odds of being extremely poor with respect to non-poor children, a very high value if compared with that of poor children (2.6) and to that of near-poor children (1.6). The multivariate model succeeds in identifying a precise and clear gradient among the poverty categories, with extremely poor children at significantly higher risk of deprivation compared to children in a less severe poverty status.

<sup>22</sup> We first tried to estimate a typical order logic model so as to account for the natural order of the dependent variable (the poverty range). However, all the specifications we tried did not pass simple tests for the null of proportional odds. The proportional odds is a (strong) underlying assumption of ordered models as it implies that the coefficients that describe the relationship between, say, the lowest versus all other categories of the dependent variable (e.g., being extremely poor versus all other categories) are the same as those that describe the relationship between the next lowest category (poor) and all other categories, etc.

<sup>23</sup> The whole set of estimates is available upon request.

**Table 5.3: Relative Risk Ratios**

	Extremely Poor	Poor	Near Poor
Nutrition	6.6	2.6	1.6
Health	1.9	1.4	1.4
Water	1.8	1.3	1.2
Sanitation	1.0	1.5	1.1
Housing	6.8	2.7	1.6
Protection	0.9	0.9	0.9
Information	9.6	3.3	1.9
Education	2.0	1.4	1.1

Source: UNICEF estimates based on IHSES 2012. In grey values that are not statistically significant

Once the model has proven to work well, one can use it to provide policy recommendations. Table 5.4 shows the average marginal probabilities (AMP) for the risk of transitioning into each poverty category when the deprivation appears.

**Table 5.4: Average Marginal Probabilities**

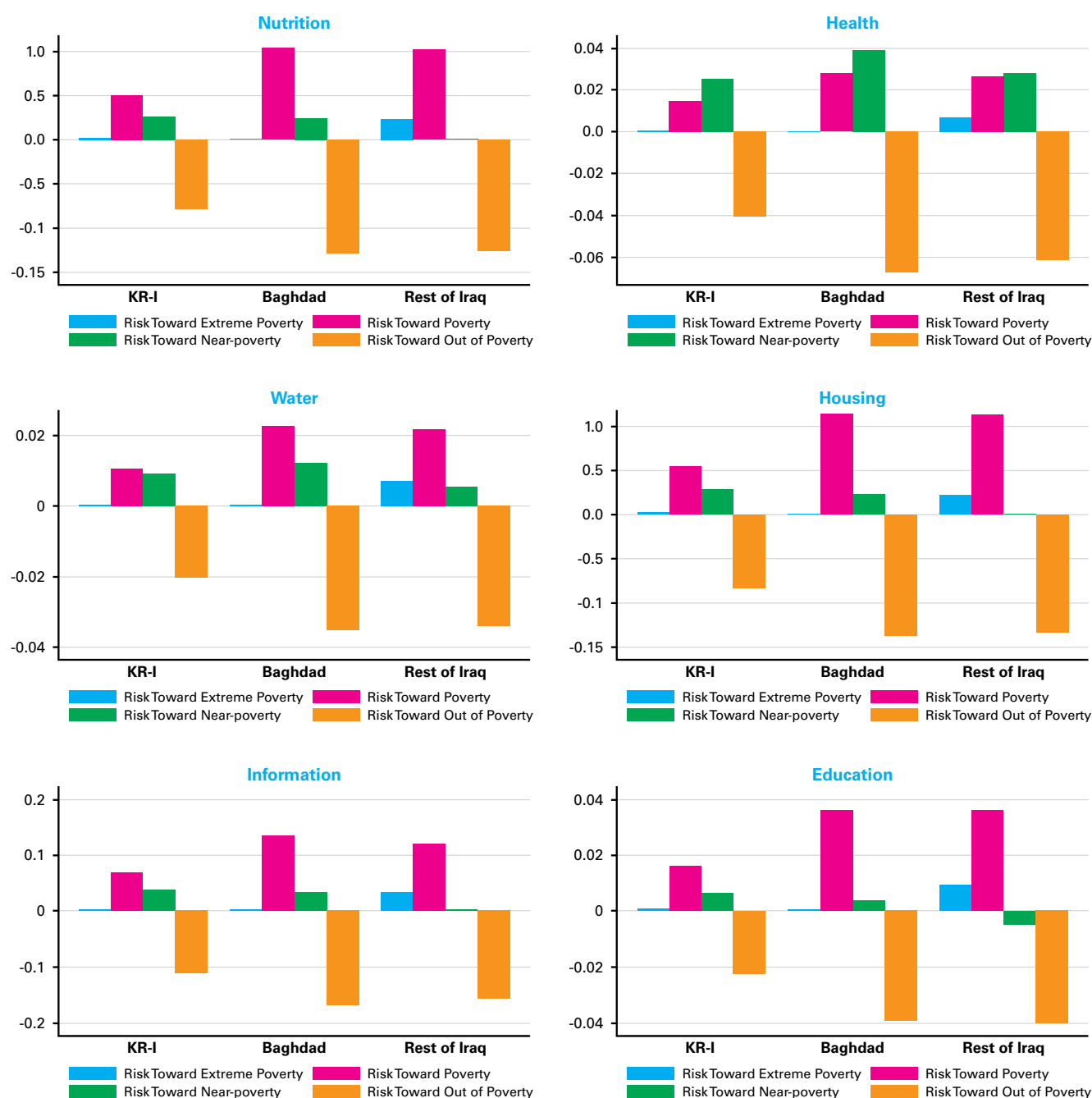
	Outcome 1: Extremely Poor	Outcome 2: Poor	Outcome 3: Near Poor	Outcome 4: Not Poor
Nutrition	1.2%	9.5%	1.3%	-12.0%
Health	0.3%	2.6%	3.1%	-6.0%
Water	0.4%	2.1%	0.9%	-3.3%
Sanitation	-0.2%	4.6%	-0.4%	-3.9%
Housing	1.1%	10.5%	1.2%	-12.8%
Protection	0.0%	-0.5%	-1.0%	1.5%
Information	1.7%	11.8%	1.7%	-15.2%
Education	0.4%	3.3%	0.0%	-3.8%

Source: UNICEF estimates based on IHSES 2012. In grey values that are not statistically significant

As the results show, children deprived in the dimensions of nutrition, housing and information have the highest probability of falling into poverty and, more importantly, extreme poverty. On the other hand, deprivation in health is more associated with a likelihood of falling into the category of near poor. The average marginal probabilities can be further decomposed by relevant socio-demographic variables. Figure 5.10 shows the results for the region of residence.



Figure 5.10: Average Marginal Probabilities by Region of Residence



Source: UNICEF estimates based on IHSES 2012. Only statistically significant effects are reported in the figure

If a child is deprived in nutrition, water and education, the risk of falling into extreme poverty increases significantly, especially in the rest of Iraq (blue bars). Meanwhile, deprivation in health increases the risk of falling into the near-poor category, especially in Baghdad. Deprivation in housing is strongly associated with the probability of becoming poor, especially in Baghdad and in the rest of Iraq, but not in the Kurdistan region. Deprivation in water is associated with a high probability of falling into the near-poor category, especially in the Kurdistan region and in the governorate of Baghdad. In general, residents of the Kurdistan region has the lowest probability of falling into any poverty status compared with other parts of the country, with the only exceptions being deprivation in water, housing and information, which increases the probability of falling into the near-poor category, which is still the least severe category among the poverty range.

## 6 The Role of Social Transfers

### 6.1 Benefit Incidence of Social Protection Schemes

Social protection in Iraq is composed of a universal Public Distribution System (PDS) providing basic food rations, and a set of social cash transfers including the Social Safety Net. Using the datasets of IHSES 2007 and 2012, this section analyses the coverage of various schemes, profiles beneficiaries by poverty status, examines the share of government spending reaching the poor, and assesses the impact on poverty risk.

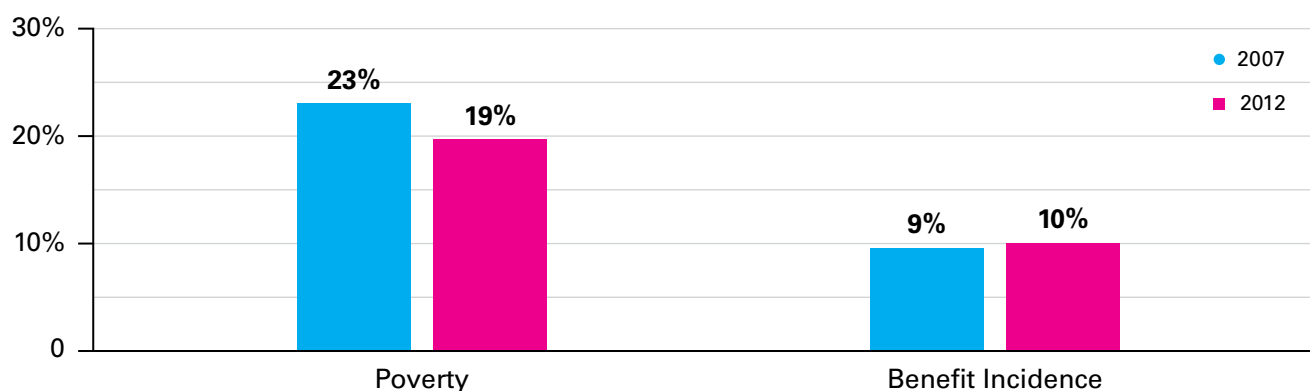
Our analysis uses the household as the unit of measurement for social transfers, following standard poverty and income measurements. The amount received by an individual adds to the household income and hence is shared by all household members. In this analysis, a beneficiary household is one where at least one member is receiving a form of social cash transfer. The same applies to the PDS, where the shares are distributed based on household size. The benefit incidence is the ratio between the total number of beneficiaries and the total population.

#### 6.1.1 Social Cash Transfers

The results of our analysis show that in Iraq, one in ten individuals (3.3 million) lives in a household receiving one form of social cash transfer. The incidence of social transfers slightly increased (0.7%), over the period 2007-2012. The same period has witnessed a fall in poverty of 4%, an economic growth of 8-9% annually, and an increase in inequality with the Gini coefficient (a standard measure of income inequality) increasing by 1% reaching to 29%.

This section only focuses on cash transfers, not food distribution as covered in the PDS. Cash transfer schemes are not necessarily aimed at the poor, but we conclude that the poor obtain a significant benefit from them. Below we examine social cash transfers schemes, their role in benefiting the poor, and impact on poverty and inequality.

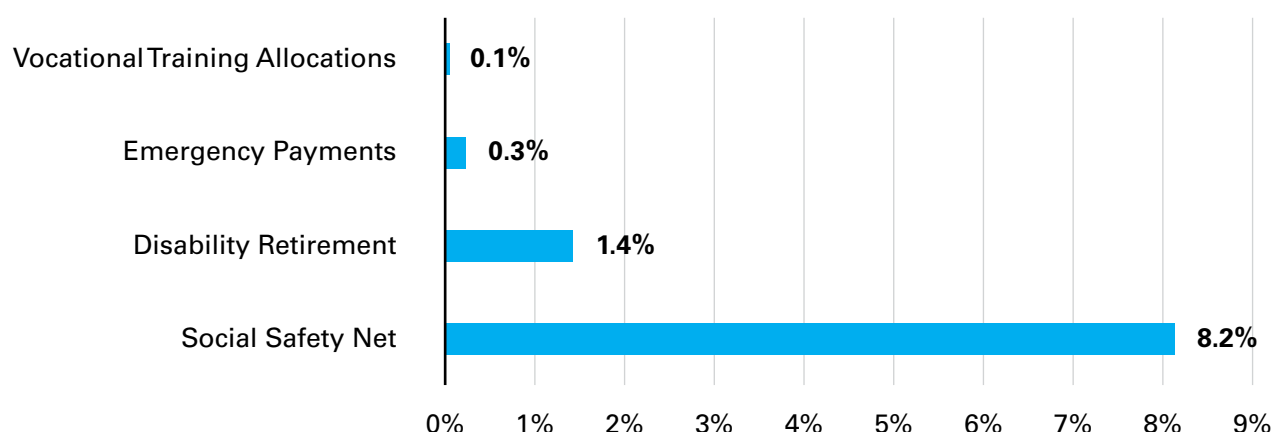
Figure 6.1: Poverty Rate and Incidence of Cash Transfer 2007-2012



#### 6.1.2 Cash Transfers Schemes and Incidence

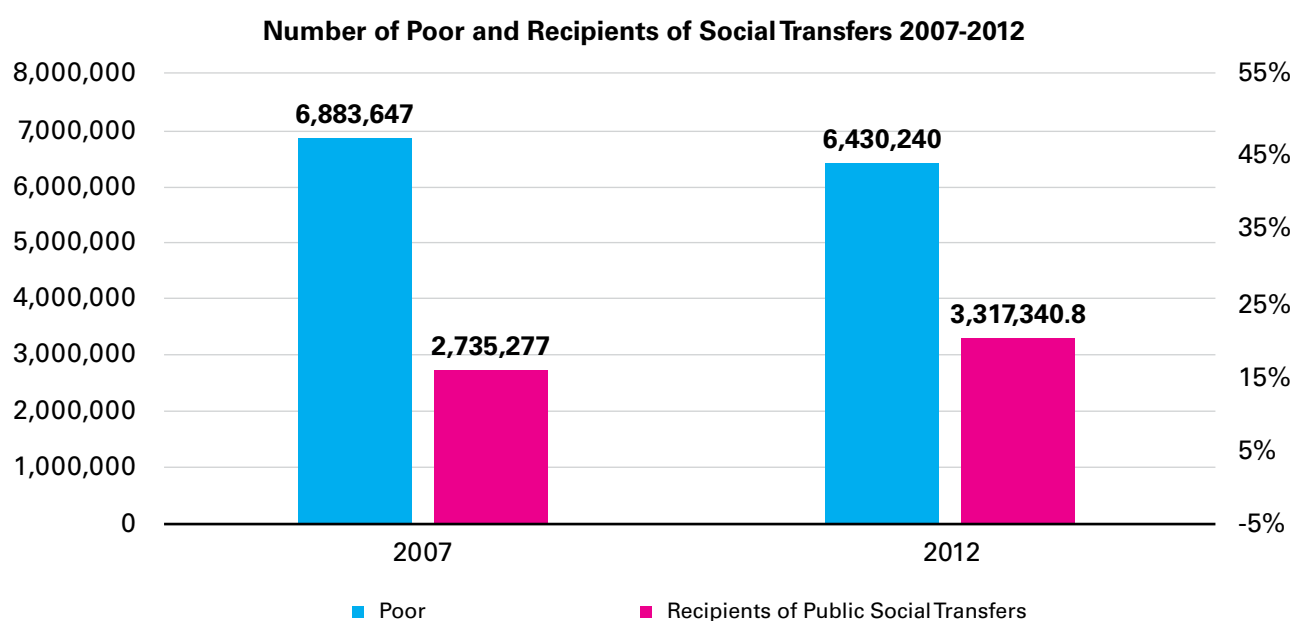
In Iraq, social cash transfers encompass four main schemes. First, the Social Safety Net (SSN) provides cash transfers to specific vulnerable groups including minor orphans, widowed and divorced women, the disabled, the medically sick, married students, and the elderly. The SSN transfers have the highest incidence, benefiting 8.2% of the population. The second most used scheme is disability retirement with an incidence of 1.4%. Third, there are emergency payments covering 0.3% of the population. Emergency payments are temporary payments provided mainly to the victims of terrorism, as well as civil personnel who have left the army. Fourth are vocational training allocations covering 0.1% of the population.

**Figure 6.2: Incidence of Different Cash Transfer Schemes**



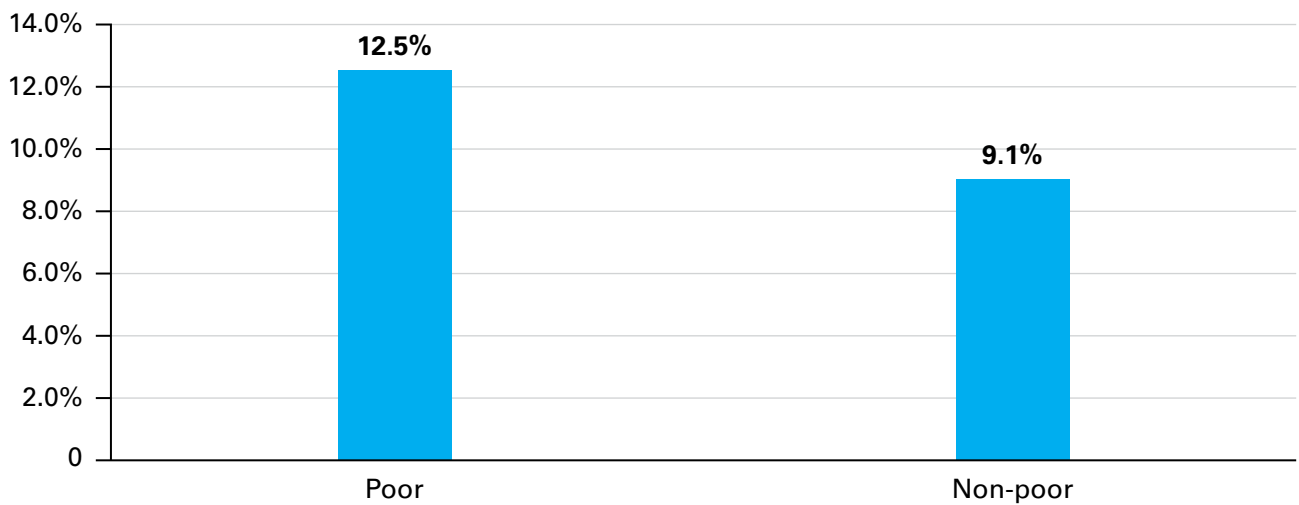
Accounting for population growth (2.5% per year), the slight increase in the incidence of cash transfers in the period between 2007 and 2012, translates into an increase of 22% in the number of cash transfers beneficiaries from 2.7 million in 2007 to 3.3 million in 2012.

**Figure 6.3: Number of Poor and Beneficiaries of Cash Transfers 2007-2012**



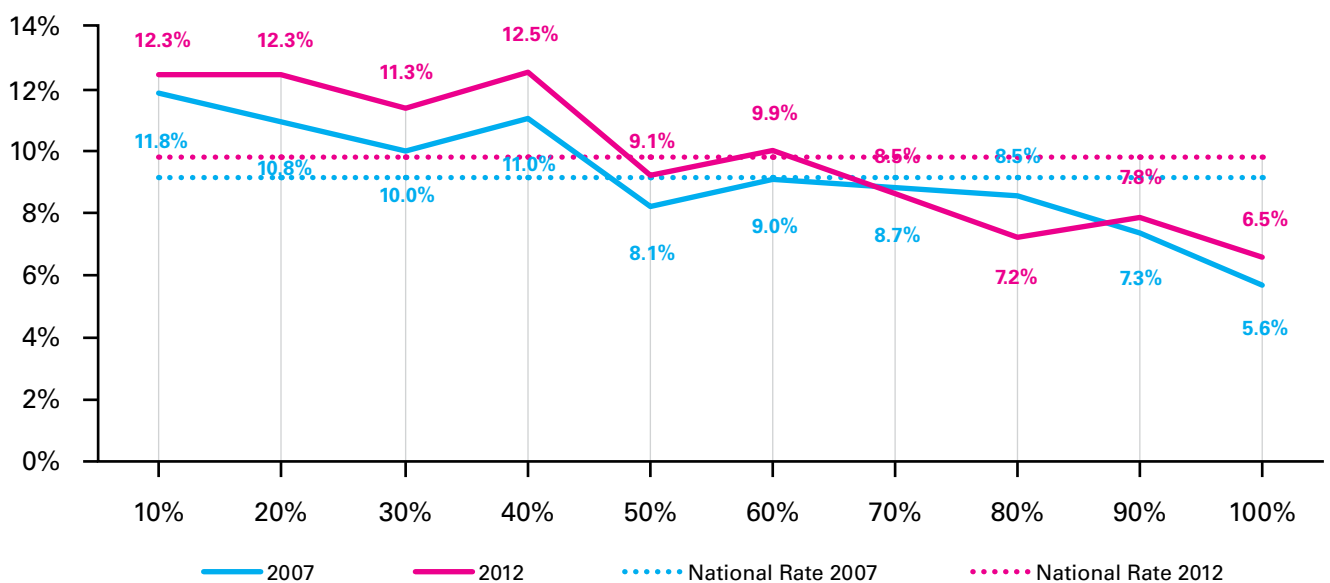
We found that only 12.5% (800,000) of the poor received transfers in cash. The majority of the poor, 5.6 million, are not receiving any form of cash transfer.

Figure 6.4: Benefit Incidence by Poverty Status 2012

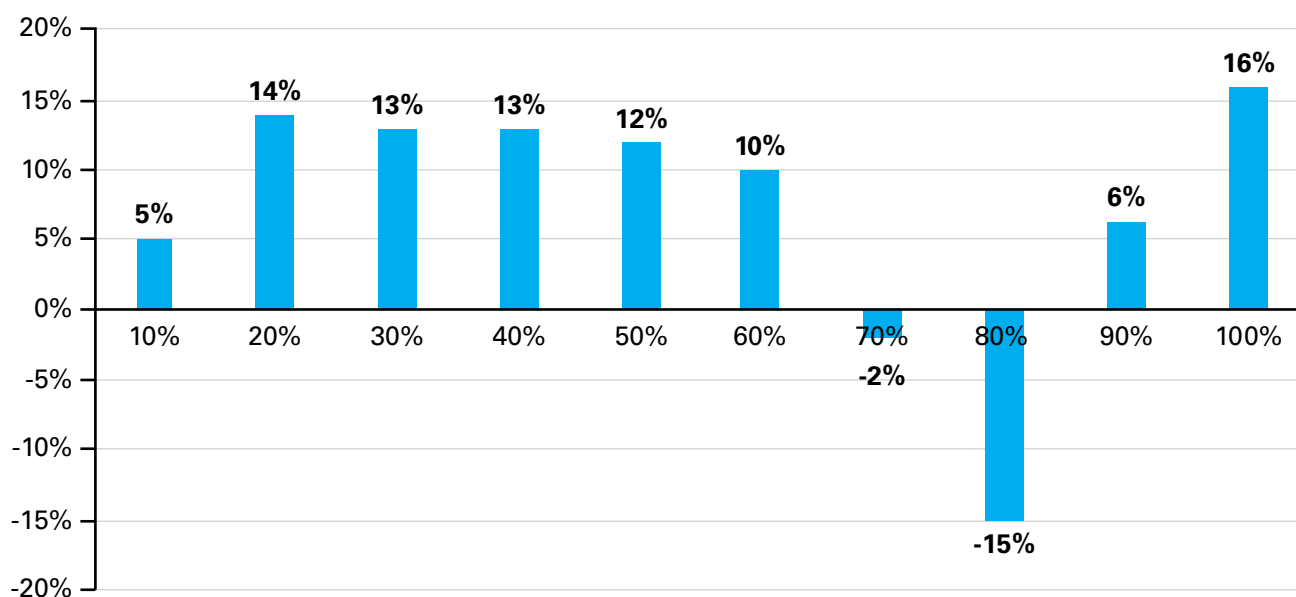


We found that cash transfers benefit households with lower PCE, and gradually falls among the more affluent. This distribution has not changed between 2007 and 2012. As Figure 6.5 shows, the bottom 40% of PCE households receive 10% higher cash benefits than the national average benefit incidence (10%). In addition households with lower per capita has increased reliance on cash transfers proportionally over 2007–2012. Although cash transfers are not available for the majority of the poor, when compared to more affluent households, these households received higher benefits or increasing incidence of benefits.

Figure 6.5: Benefit Incidence by PCE Deciles

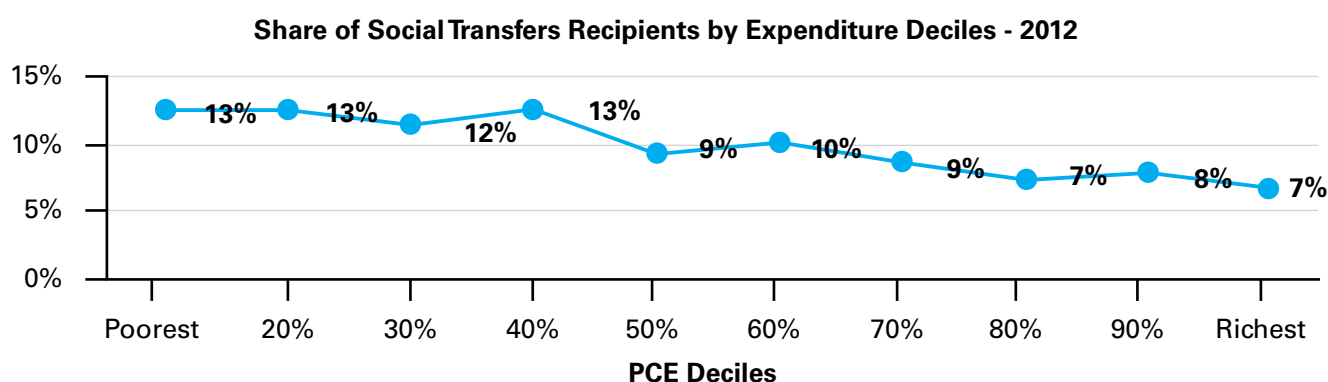


**Figure 6.6: Change in Benefit Incidence by Expenditure, 2007-2012**



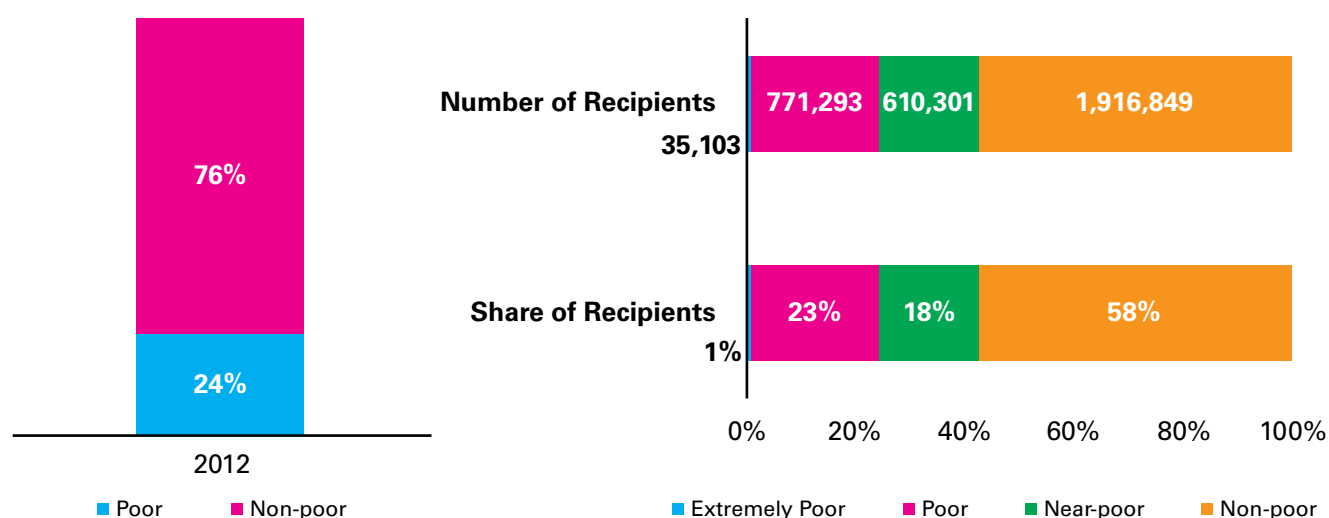
Less affluent households had an increase in usage of cash transfers and represented a higher share of total beneficiaries. As Figure 6.7 shows, the households within the bottom 30% represent 38% of all beneficiaries, while the richest 30% represents 22% of all beneficiaries.

**Figure 6.7: Share of Social Transfers Beneficiaries by Expenditure**



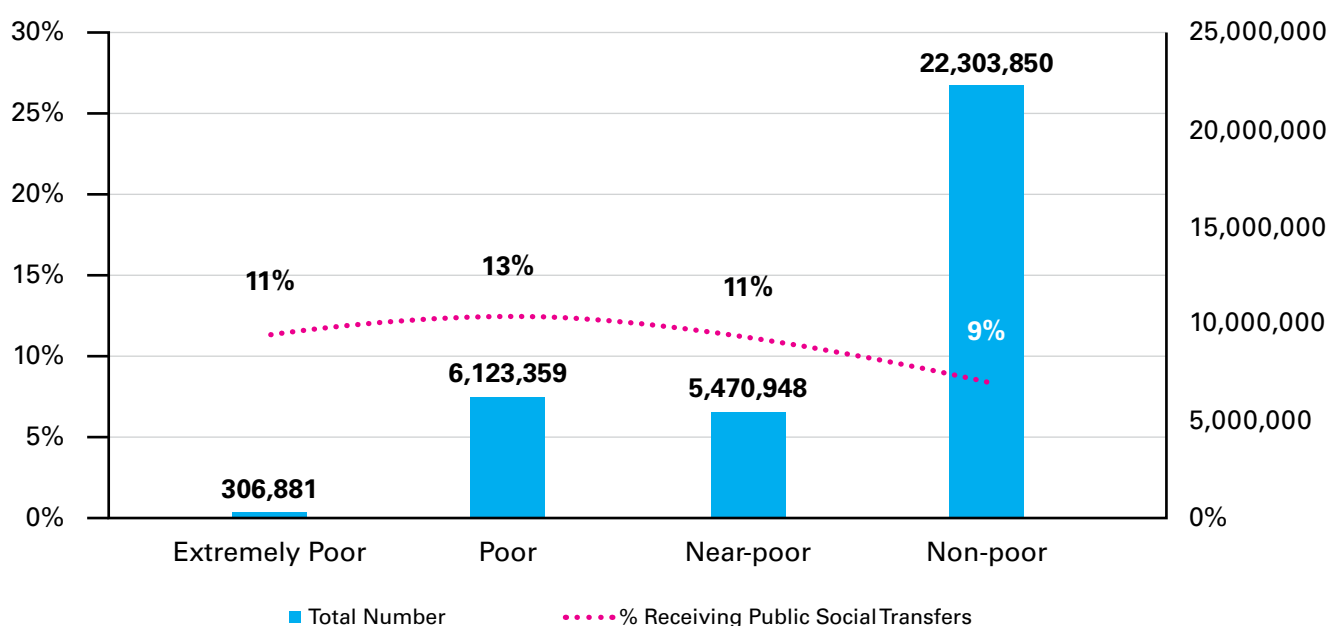
Surprisingly the majority of beneficiaries of public cash transfers are not poor and nor do they have children with multiple deprivations in their rights. While households with lower PCE (i.e. less affluent households) had an increase in usage of cash transfers, overall only one percent of all beneficiaries of social transfers are extremely poor. Another 23% are poor and 18% are vulnerable (or near poor).

Figure 6.8: Share of Public Social Transfers Beneficiaries by Poverty Status



Of the extreme poor population in Iraq, 89% (27,300) are not receiving any kind of public cash transfer; similarly 87% of the poor are also not benefiting from public cash transfers.

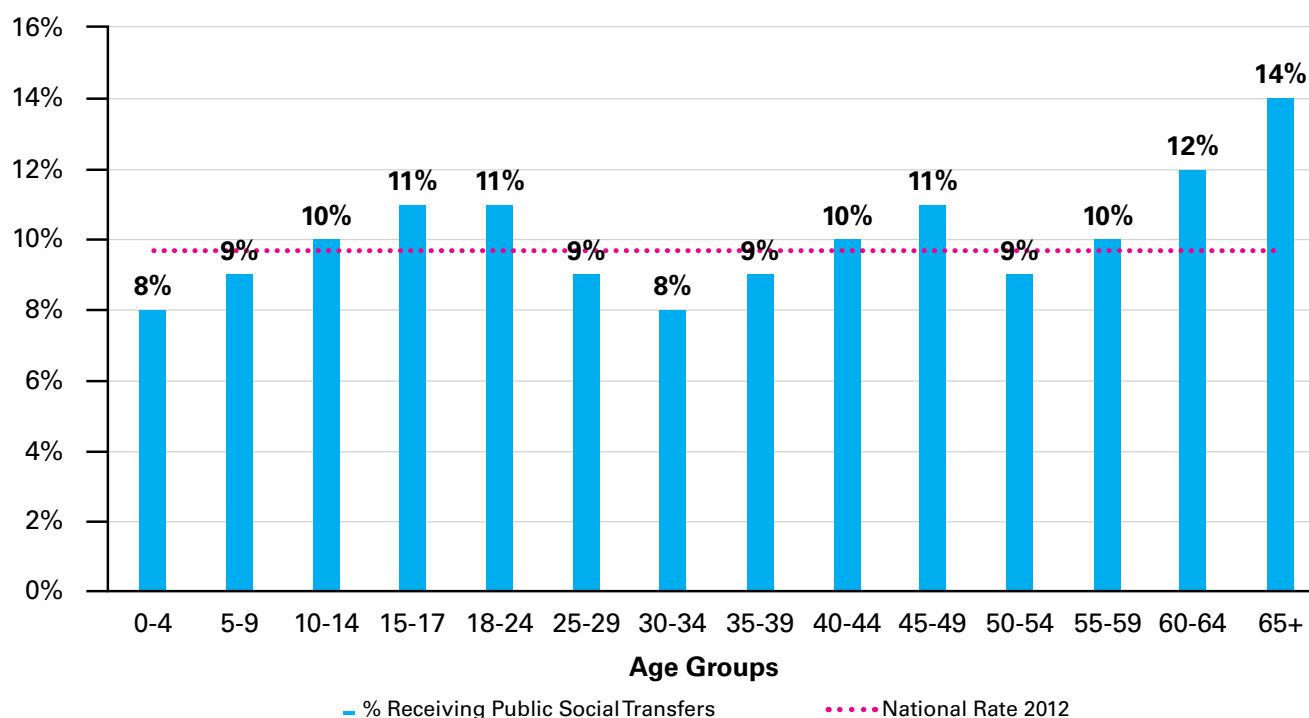
Figure 6.9: Distribution of the Population and Benefit Incidence by Poverty Status



### 6.1.3 Public Cash Transfers and Children

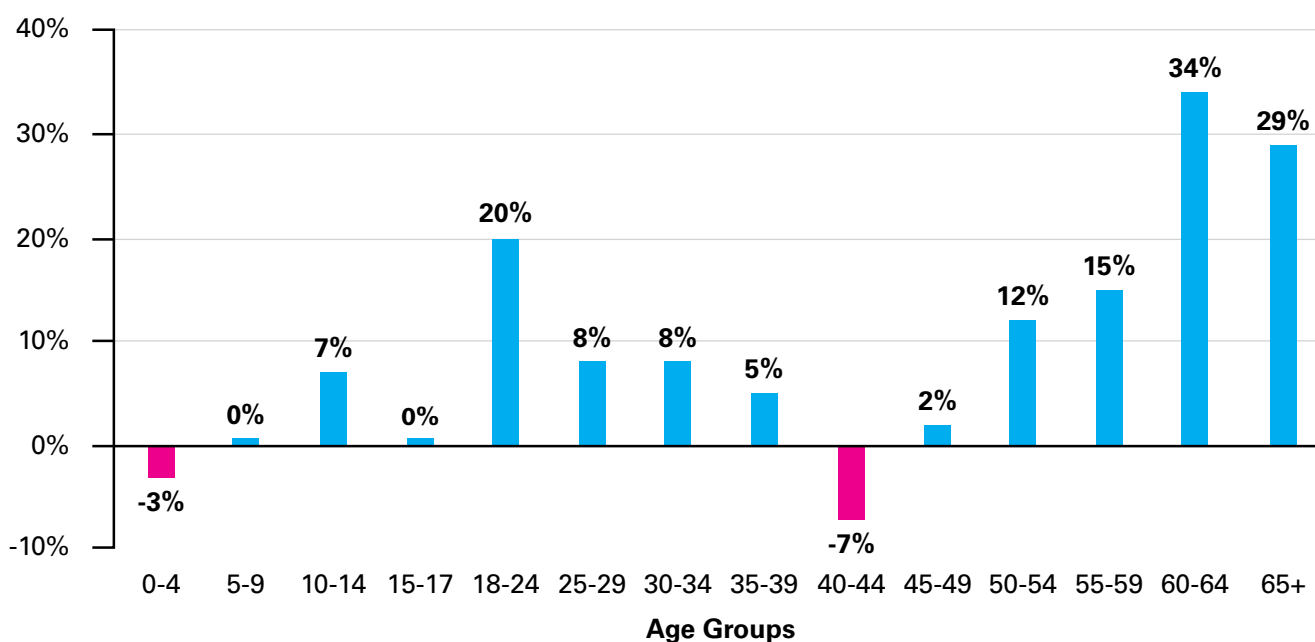
When we review the cash transfers targeting poor households with children, or addressing households with multi-deprived children the incidence of benefits for children is below the national average (Figure 6.10).

Figure 6.10: Benefit Incidence by Age Groups 2012



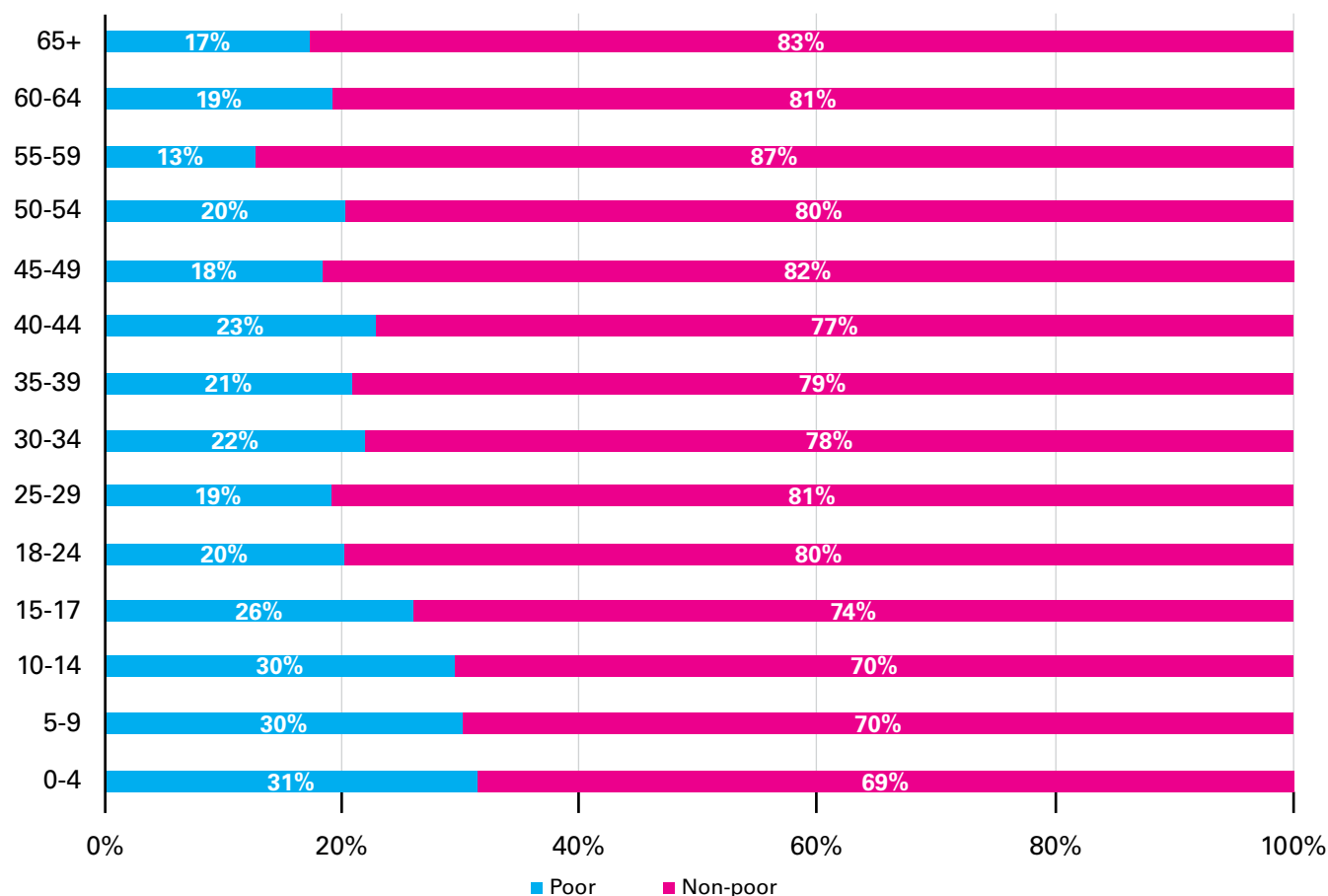
There were some minor changes in benefits for particular age groups. The benefit incidence for children 0-4 years fell by 3% since 2007. Children 5-9, and 15-17 did not see a significant increase in benefits incidence over the same period. Children 10-14 realised a 7% increase. On the other extremely the elderly 65+ and 60-64 years saw the highest increase in benefits incidence, 29% and 34% respectively. Youth (18-24) saw an increase of 20% in benefit incidence (Figure 6.11).

Figure 6.11: Change in Benefit Incidence by Age Group 2007–2012



However, given the country's young population and the fact that poorer families generally are bigger in size, overall the proportion of poor receiving public cash transfers is higher among the youngest cohorts of the population.

**Figure 6.12: Share of Public Social Transfers Beneficiaries for Age Groups by Poverty Status 2012**



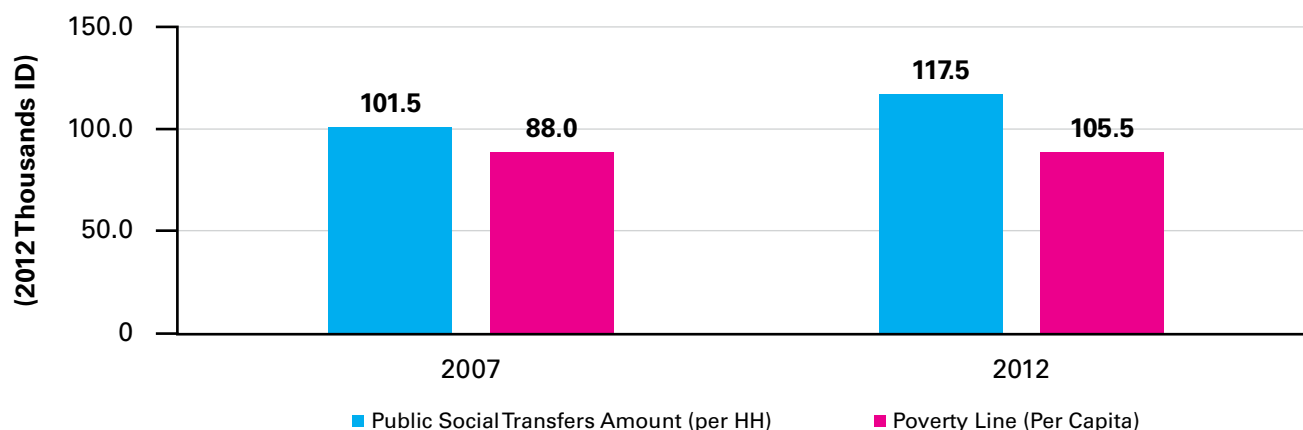
#### 6.1.4 Public Social Transfers Amounts

The average monthly amount of cash received by beneficiaries from public social transfers amounted to 117,500 ID (98 USD) in 2012<sup>24</sup>, an increase of 16% from the average amount in 2007. In 2007, the poverty line was defined at 88,000 ID per month per household and the average household's public social transfer was 101,500 ID – 15% higher than the poverty line. In 2012, the poverty line was 105,500 ID and the average household's public cash transfer was 117,500 ID – 11% higher than the poverty line.

24 @ 1 USD = 1200 IQD.

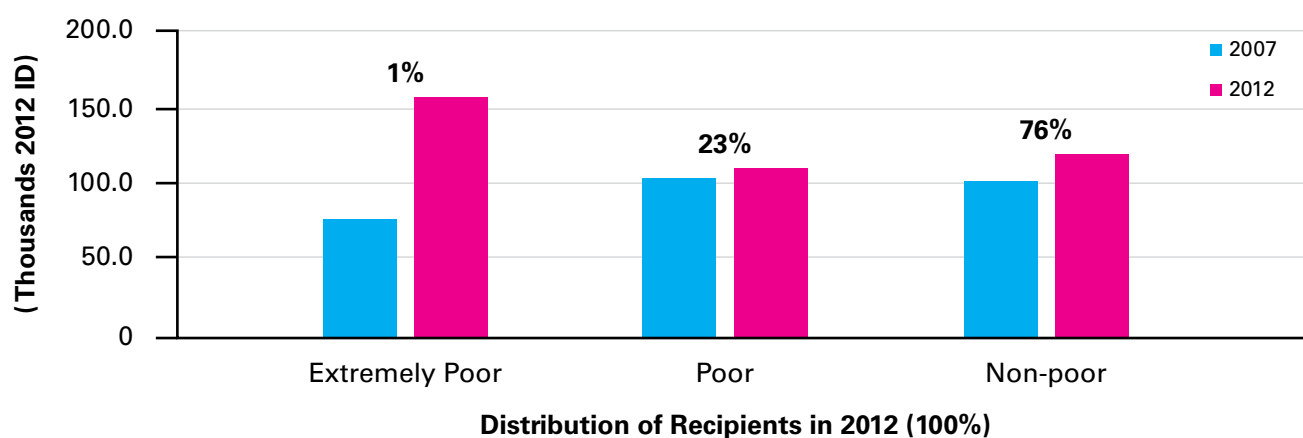


**Figure 6.13: Average Amount Received by Household's Public Social Transfers and Poverty Line 2007-2012**



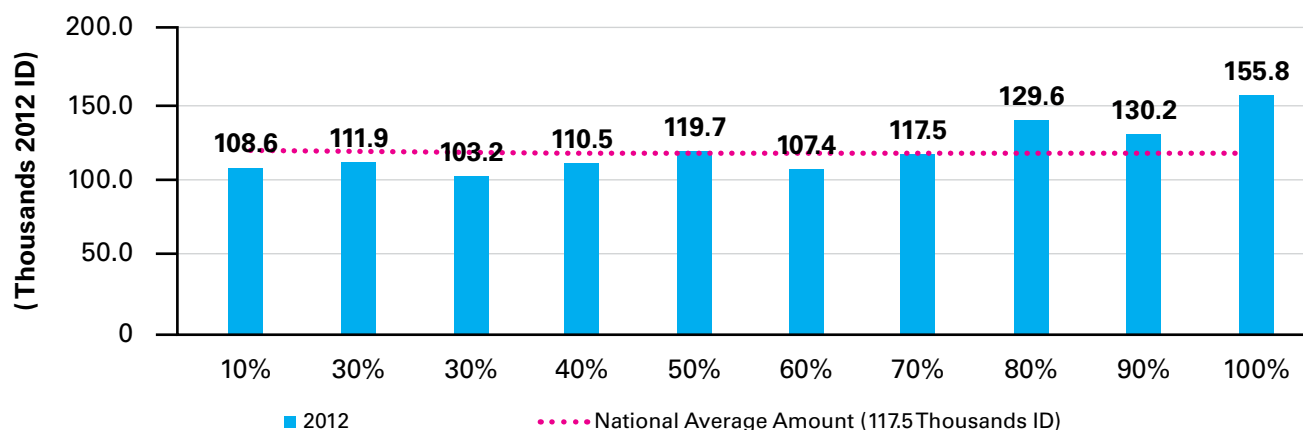
Since 2007, the average increase in the amount of benefits has favoured the non-poor, increasing by 18%, while the amount for the poor has increased by 6%. This trend has resulted in reversing the ranking of having the non-poor receiving higher monthly benefits. In 2012, the monthly amount benefiting the extremely poor, who represent a minority of beneficiaries (1%), has more than doubled to reach 158,000 ID. Yet 89% (27,300) of the extremely poor did not receive any public cash transfer.

**Figure 6.14: Average Amount of Public Social Transfers Received by Household Poverty Status 2007-2012**



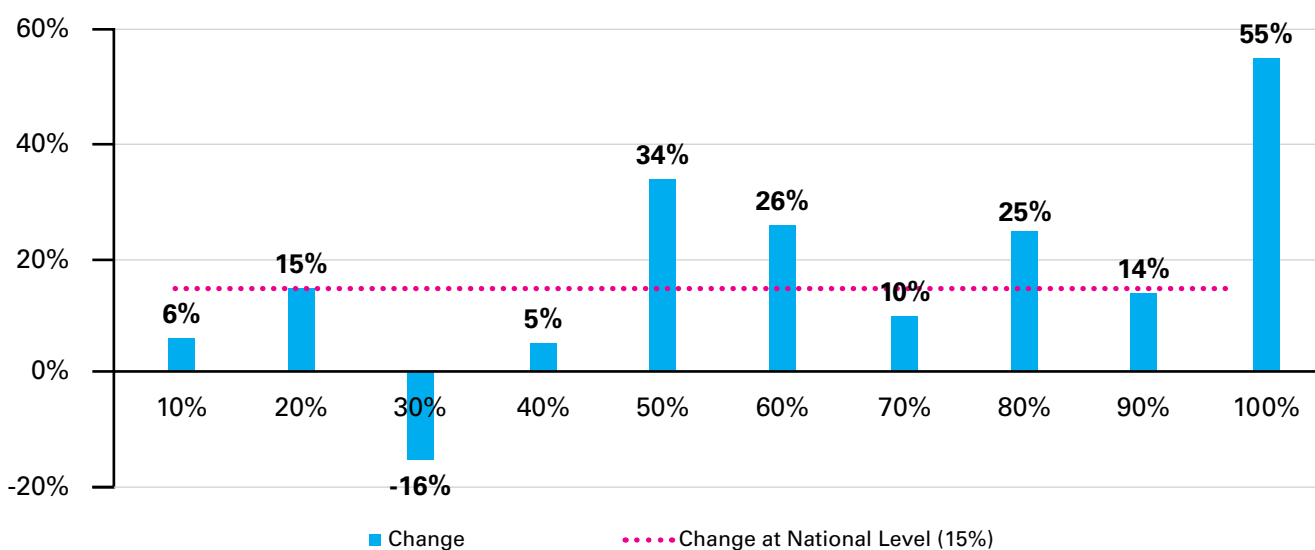
In terms of PCE, the bottom 50% of households received monthly amounts lower than the national average (Figure 6.15).

**Figure 6.15: Average Amount of Public Social Transfers Received by Household Expenditure Level**



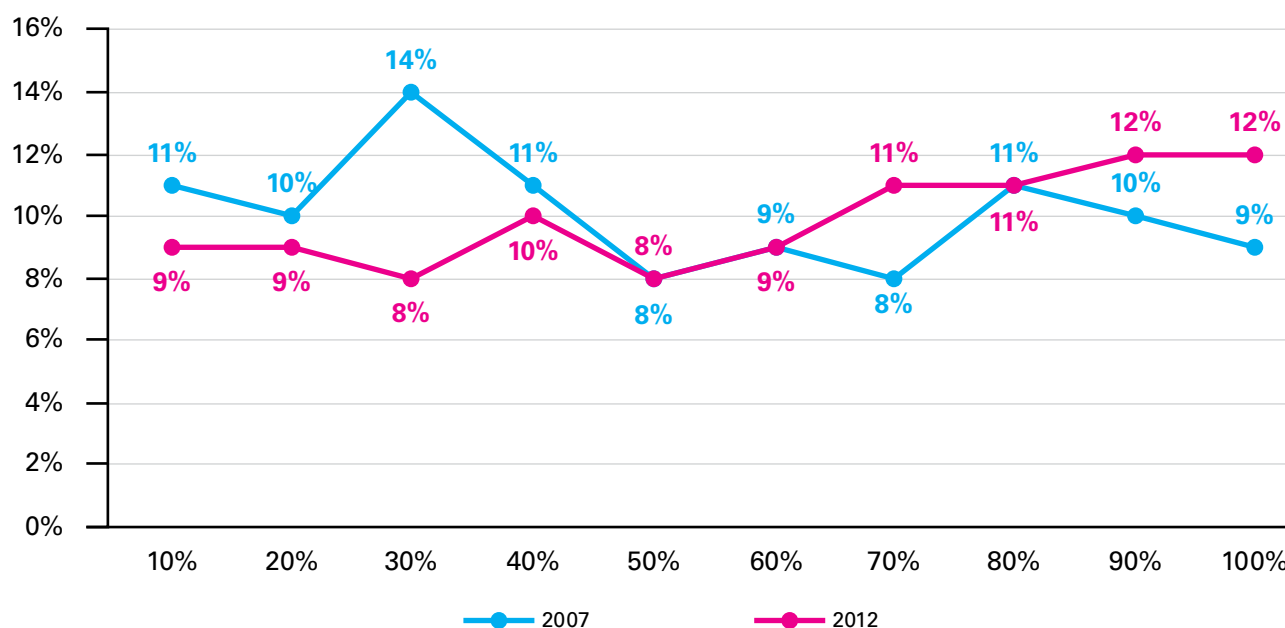
The benefits of social transfers have increased proportionally more for the richest 50%. We conclude that public social transfers are not reaching the majority of the poor with 87.5% of the poor not receiving any form of public social transfers. It also is contributing to growing inequality between the poor and rich.

**Figure 6.16: Change in Average Amount of Public Social Transfers Received by Households by Expenditure 2007-2012**



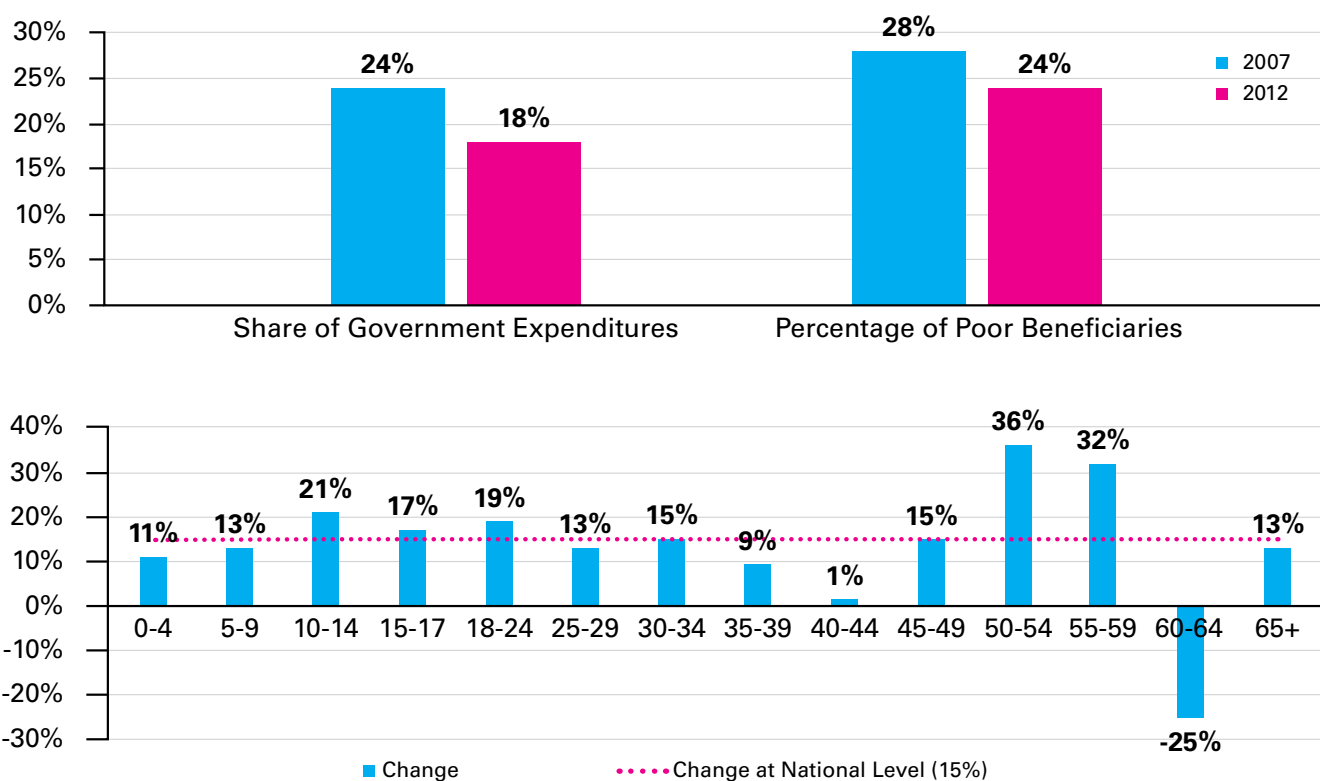
The government total annual expenditure on public social transfers has more than doubled since 2007. In 2012, it is estimated that 3.76 billion ID was distributed as public social transfers. However, the share of total government expenditure received by households with lower PCE has fallen since 2007. At the same time, the share of the richest households increased, representing additional evidence that the increase in social transfers was not pro-poor. In 2007, the bottom 30% received 35% of total government expenditure on social transfers, the top 30% received 30%. By 2012 this reversed, with the bottom 30% receiving 26%, and the top 30% receiving 35%.

Figure 6.17: Share of Total Government Expenditure Received by Household by Level of PCE



The percentage of total poor beneficiaries of public cash transfers fell by 4% between 2007 and 2012. Government expenditure on the poor via public cash transfers fell by 6% during the same time period.

Figure 6.18: Share of Total Government Expenditure Received by Poor Households



### 6.1.5 Geographic Distribution of Cash Transfers

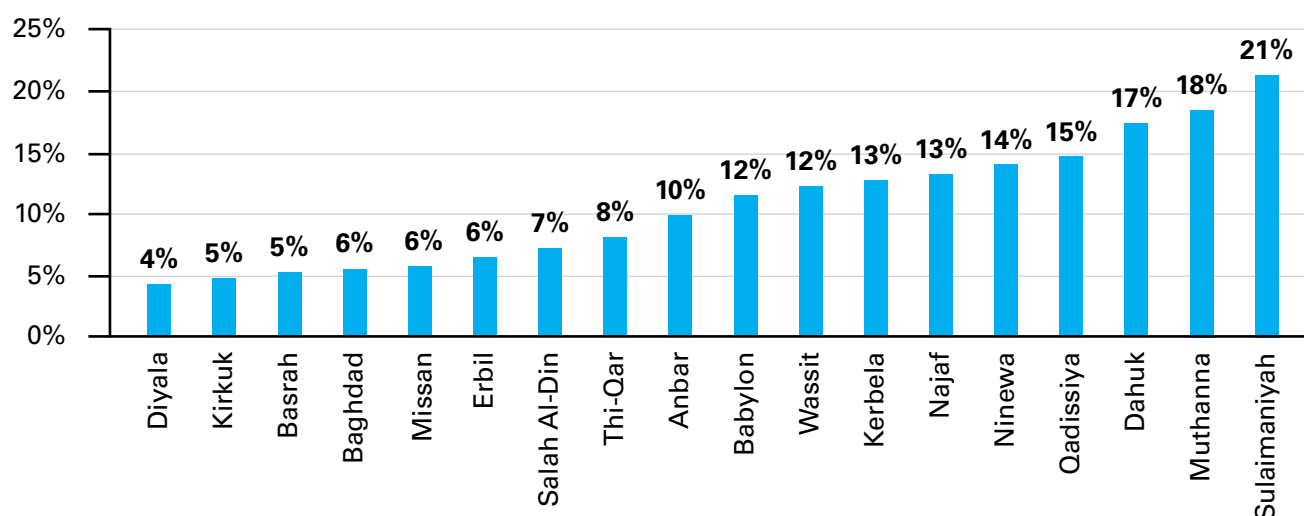
The prevalence of public cash transfers varies widely across governorates. Beneficiaries are concentrated in the governorates of Ninewa where 14% of beneficiaries live, and Baghdad and Sulaimaniya each with 12% of their populations receiving cash transfers. The governorates of Dahuk and Sulaimaniya had a large increase (15% and 14% respectively) in the coverage of social cash transfers between 2007 and 2012, and became the two governorates with the highest incidence in 2012. On the other hand a group of governorates including Diyala, Baghdad and Babil had a fall in coverage by 4-5%.

Large variations exist among governorates in terms of the share of beneficiaries living in poverty. While 20% of beneficiaries in Sulaimaniyah are poor, this percentage falls to 4% in Diyala.

**Table 6.1: Geographic Distribution of Beneficiaries of Cash Transfers**

	2007		2007		Difference	
	% Receiving Public Social Transfers	Amount (Thousands of ID)	% Receiving Public Social Transfers	Amount (Thousands of ID)	% Receiving Public Social Transfers	Amount (Thousands of ID)
Dahuk	2%	120.9	17%	145.8	15%	24.9
Ninewa	11%	82.8	14%	94.8	3%	11.9
Sulaimaniya	8%	65.2	21%	136.1	14%	70.9
Kirkuk	3%	69.5	5%	130.7	2%	61.2
Erbil	6%	99.7	6%	148.7	1%	49.0
Diyala	9%	84.2	4%	113.0	-5%	28.8
Anbar	6%	216.0	10%	125.6	4%	-90.3
Baghdad	10%	119.0	6%	121.0	-4%	2.0
Babil	16%	131.5	12%	162.4	-4%	30.9
Kerbela	13%	69.0	13%	82.4	-1%	13.4
Wassit	9%	102.6	12%	101.4	3%	-1.2
Salah Al-Din	9%	129.0	7%	111.0	-2%	-18.1
Najaf	10%	78.7	13%	103.5	3%	24.7
Qadissiya	15%	85.5	15%	105.9	0%	20.5
Muthanna	14%	89.0	18%	105.4	4%	16.4
Thi-Qar	10%	90.0	8%	111.4	-2%	21.4
Missan	6%	76.1	6%	92.2	0%	16.2
Basrah	5%	48.2	5%	100.6	1%	52.4
<b>Iraq</b>	<b>9%</b>	<b>101.5</b>	<b>10%</b>	<b>117.5</b>	<b>1%</b>	<b>16.0</b>

Figure 6.19: Percentage of Beneficiaries Living in Poverty



Two main conclusions emerge from the analysis above: first, notwithstanding the overall expansion of social cash transfers over the 2007-2012 period, the benefit incidence among children of different age groups has decreased or stalled at best. And second, the increase in social cash transfers was not pro-poor and contributed to the growing gap between rich and poor. The majority of the poor (87.5%) are not receiving any kind of assistance, and the poor are claiming a smaller share, as compared to the rich, of government expenditure.

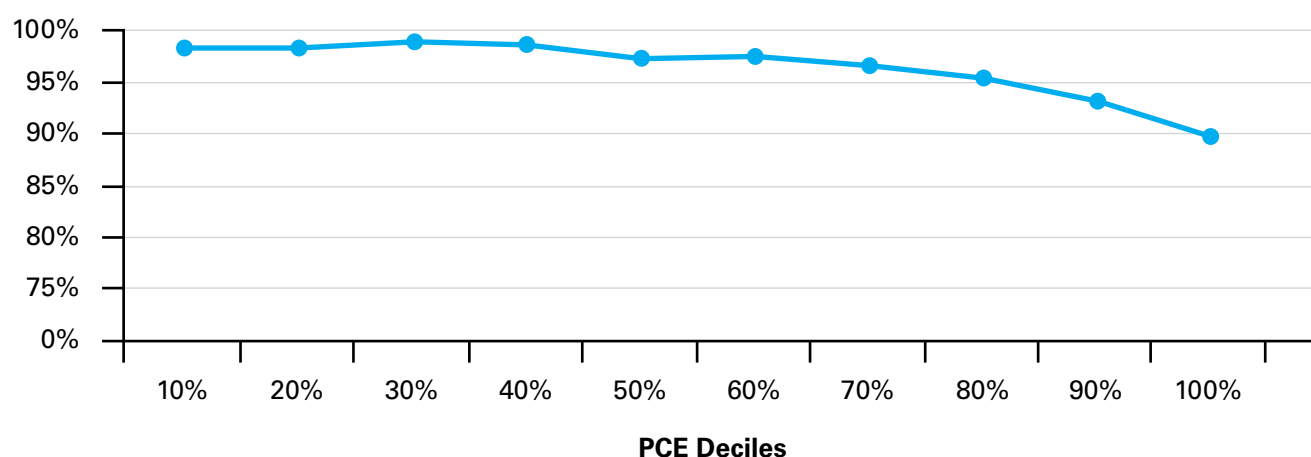
## 6.2 Public Distribution System (PDS)

During the sanctions of the 1990s, the Government of Iraq introduced the PDS to provide all Iraqi citizens with basic food rations, and help avoid, at that time, an imminent humanitarian and food crisis. Today, with 96% of the population receiving food rations (IHSES 2012), the PDS represents Iraq's largest social protection scheme. The percentage of population benefiting from the PDS has slightly declined since 2007 when it was 98%.

### 6.2.1 Incidence, Composition and Stability of the PDS

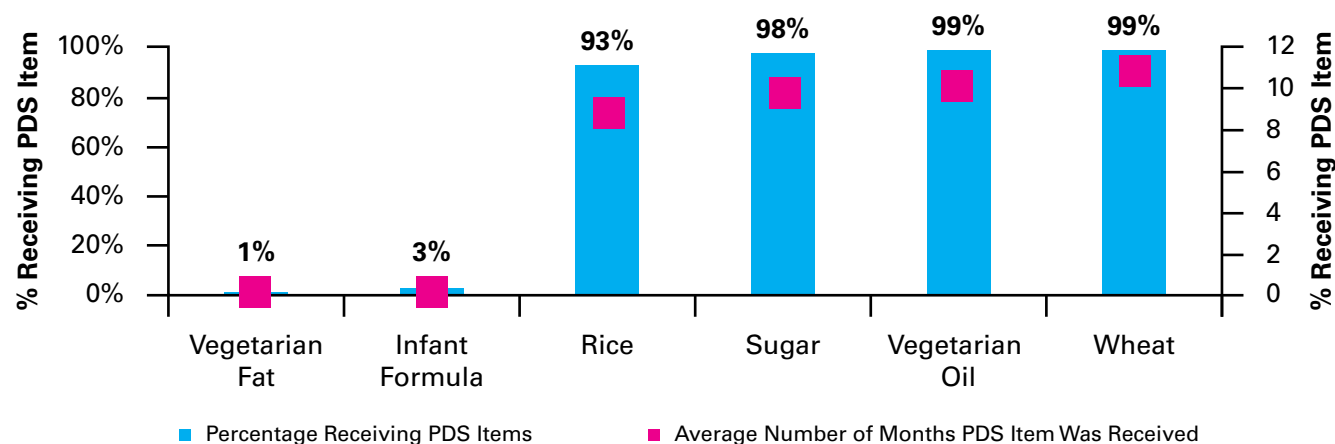
The PDS is universal with 96% of the population receiving food rations. Small differences exist in the incidence between poor and rich, with 98-99% of poorest segments receiving food rations, and falling to 90% among the most affluent 10% of households.

**Figure 6.20: Percentage of Population Receiving PDS by PCE Deciles**



The PDS food basket has six food items distributed monthly or quarterly. Four items are received widely on a regular basis: rice, sugar, vegetarian oil and wheat. For instance, the rations reached 99% of the population on average for 11 months during 2011-2012. Infant formula on the other hand was received by only 3% of households with a child below two years old, and they received an amount sufficient for about one month on average.

**Figure 6.21: Benefit Incidence of PDS Items and Number of Months Received During Last Year**

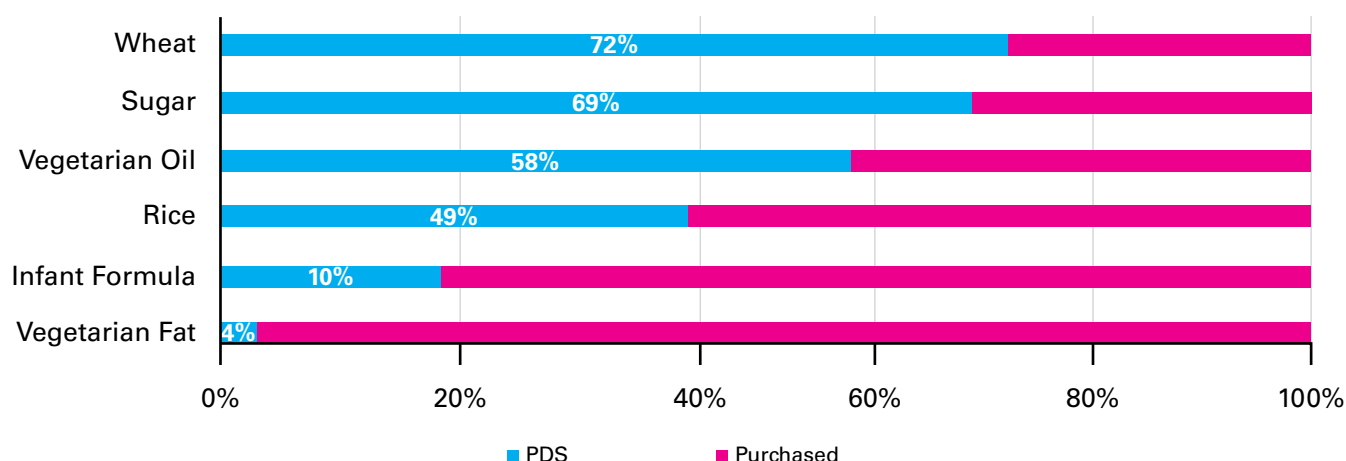


### 6.2.2 Household Dependency on the PDS

The universal distribution of key food items for 25 years has created a dependency on the PDS to cover household demand for the distributed basic commodities and to contribute to individuals' daily caloric intake. For instance, over 70% of wheat consumption in Iraq is obtained through the PDS.

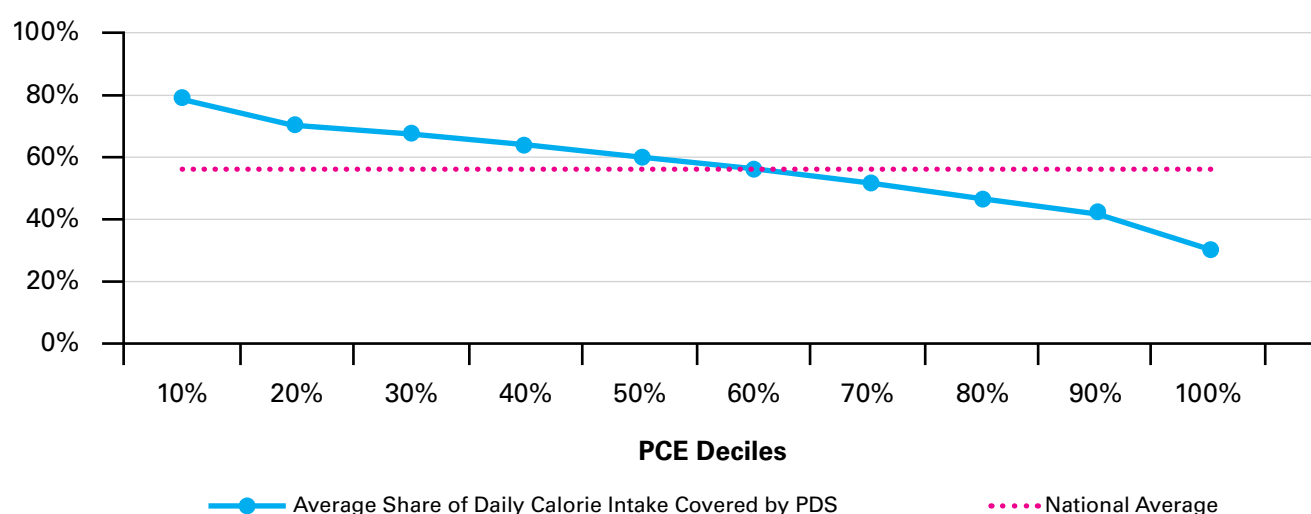
This dependence on the PDS for basic food items reflects government intervention and the distortion caused by the PDS on the production, employment opportunities, and trade of these basic commodities, especially given that the majority of these commodities are imported from outside Iraq (FAO 2009) hampering the development of the private sector and the agricultural contribution to the economy.

Figure 6.22: PDS Contribution to Household Consumption of Basic Food Items



The reliance on food rations is more evident when examining the PDS contribution to individuals' daily caloric consumption. On average the PDS provides 57% of the daily caloric consumption of an average individual. The poor rely more heavily on the PDS for their nutrition – the poorest 10% of Iraqis rely on the PDS for 80% of their daily caloric intake, while the richest 10% of Iraqis use the PDS for about 30% of their daily caloric intake.

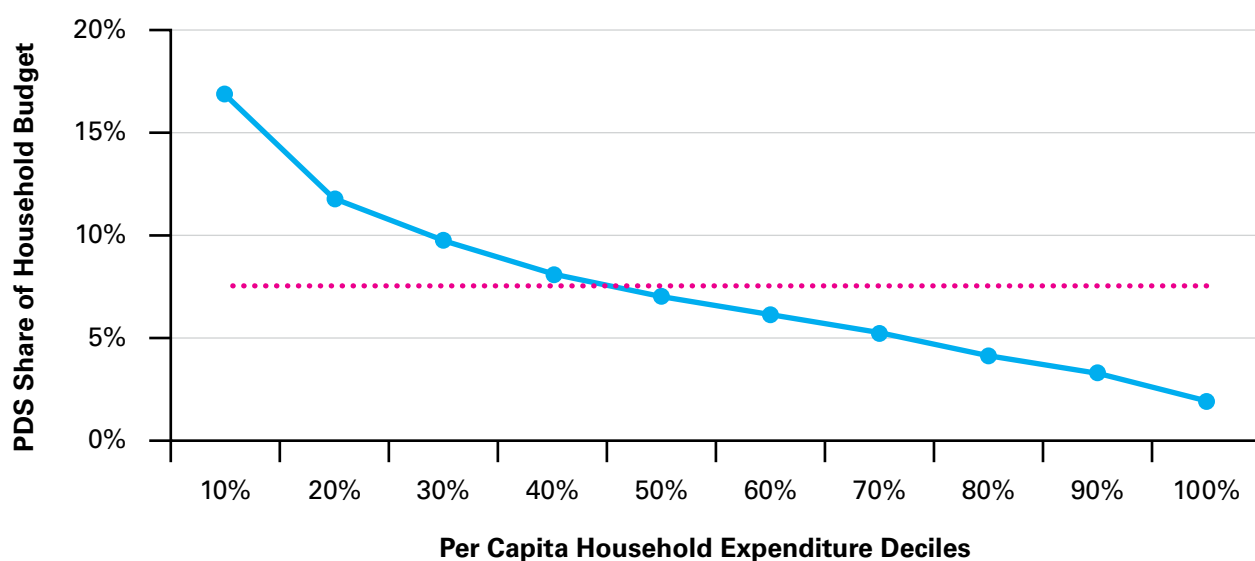
Figure 6.23: PDS Share of Individuals' Daily Calorie Consumption



### 6.2.3 The Cost of the PDS and Impact on Poverty

If the PDS were an in-kind social transfer, it would be equivalent, at market prices, to a cash transfer of 12,000 ID per individual and per month (approximately 10 USD). On average the contribution of the PDS to a household's budget is 7%. The PDS contribution is more important for the poor who are struggling with the cost of basic necessities. For the poorest 10% of the population the PDS contributes to 17% of their household budget, compared to the richest 10% of Iraqis, where the PDS makes up less than 2% of the household budget.

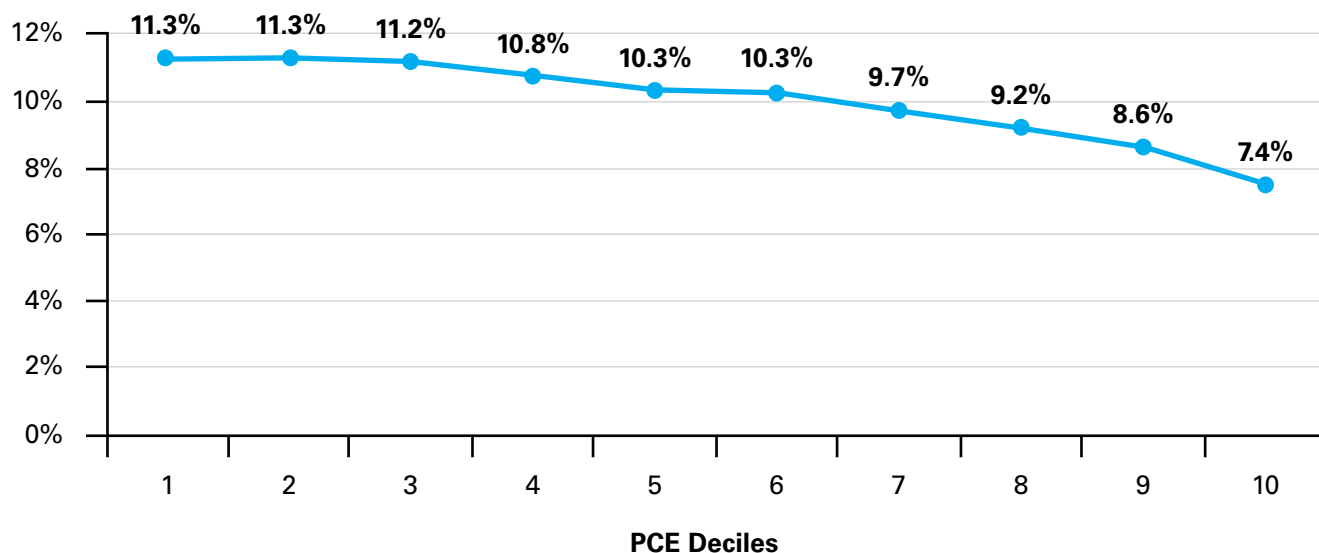
Figure 6.24: PDS Share of Household Budget



In 2012, the total cost of the PDS was 4.88 trillion ID (4.2 billion USD) amounting to 4.2% of Iraq's total federal budget. This represents more than ten times the cost of the other social protection schemes in Iraq combined.

The objective of establishing the PDS, in 1990, was to avoid a humanitarian and food crisis. Today, with only one-fifth (20.5%) of total government expenditure on the PDS reaching the poor and extremely poor, it is evident that the PDS is inefficient in achieving its objective.

Figure 6.25: Share of Government Expenditure on PDS Received by the Population from Different Expenditure Deciles



In addition to the financial inefficiency in providing social protection to the poor, the effectiveness of the PDS in addressing the poverty and vulnerability of households is questioned. Notwithstanding that over 98% of the poor and extremely poor receive the PDS, the percentage of extreme poverty has almost doubled over 2007-2012 to reach 0.9%.



There are few analyses assessing the effectiveness of the PDS (Amendola, Nicola et al, 2007). The PDS is often criticised, and reform is sought to address the following drawbacks: the system's lack of efficiency and effectiveness in supporting the poor; its financial sustainability and burden on government budget; its negative impact on agricultural sector and private sector development; for creating dependencies on food rations; and distorting incentives to work and break free from intergenerational poverty cycles. These manifestations of the PDS are widely known by the government and international agencies, and since 2005, the government has started reforming the PDS. To that end the government commitment is firm and clearly stressed in the Iraq's NDP 2013-2017 which was endorsed by the government and formulated jointly with UN agencies and the World Bank.

### 6.3 Projection Scenarios on Reform of the PDS

This report aims to assess the impact of the PDS in addressing the risk of poverty and vulnerability, using the data at hand. In order to assess the magnitude of the PDS impact on poverty, we use the IHSES dataset to simulate and evaluate the changes to poverty and total government cost of different scenarios with respect to the current universal distribution of PDS. Given the high prevalence of the PDS (96.5% of the population), very few in the population, and still much fewer in the sample, are non-recipients of the PDS, so we are unable to compare the difference between PDS recipients and non-recipients. Instead, we use existing data to stimulate a range of scenarios.

The following scenarios will shed light on social protection and PDS reform related questions.

- A** Given households' substantial reliance on the PDS for their daily consumption, what will be the effect on the rates of poverty and extreme poverty if the government decides to stop the distribution of PDS food rations?
- B** What will be the effect on poverty and government expenditure if the PDS were distributed in rural areas only, where poverty is higher and the market is less developed to meet the demand on food?
- C** What if the PDS is distributed universally in districts where more than one fourth of the population lives in poverty?
- D and E** What if the PDS is completely stopped and replaced with a targeted cash transfer? The difference between the two scenarios is the size of error in targeting the poor (exclusion error).

Our base line for all the scenarios is the situation in 2012, where the PDS provides food rations to 96.5% of the population, and where 0.9% of the general population live in extreme poverty, 18.9% live in poverty, and the system represents a 4.88 trillion ID annual government expenditure.

#### (A) Complete cessation of the PDS

If the government stops the distribution of food rations, it will cut its expenditure by 4.2% annually. Yet, with this universal social protection scheme absent, extreme poverty will be more than double to reach 2.3%, and poverty rate will increase to 25.8% (rising seven percentage points compared to the current situation).

#### (B) PDS distributed only in rural areas

Less than one third of the population (31%) live in rural areas, but more than half (51%) of Iraq's 6.4 million poor people live in rural areas. The vulnerabilities of the rural population are further exacerbated with underdeveloped basic services infrastructure and markets that are unable to meet the demands of the population. Given the concentration of poverty pockets and increased vulnerabilities in rural areas, this scenario limits the distribution of PDS food rations to all rural areas.

Under this scenario, the percentage of PDS recipients in the population falls to 31%, and costs the government 1.78 trillion ID or 1.5% of the government's annual budget. In addition, poverty increases by 1.2% to reach 20%, while extreme poverty increases by 0.5 percentage points reaching to 1.4%. Both scenarios (A) and (B) would increase poverty, to 25.8% under the complete cessation of the PDS or to 20% when the PDS is limited to rural areas. The coverage and costs of the PDS under this scenario are cut by about two-thirds; PDS coverage falls from 96.5% to 31% of the population; and the cost of the system to the government's annual budget falls by 63%.

**(C) PDS distributed only in districts where more than one fourth of the population live in poverty**

Of Iraq's 120 districts, 15 have more than 50% of their population living in poverty, and another 20 districts have poverty rates ranging between 25% and 50%. Those districts are concentrated in the southern governorates of Missan, Thi-Qar, Muthanna and Qadissiya, and Ninewa in the north. In addition to the high poverty and vulnerability levels found in these districts, the population faces great bottlenecks in accessing basic services and markets are unable to respond to the demand for services and food. In this scenario, the government universally distributes the PDS food rations solely to all residents of those districts. Given the living conditions in those districts, we expect the PDS to have the largest social protection leverage in these areas.

Under this scenario, the PDS would cover 28% of the population, and cost 1.57 trillion ID. The poverty rate would increase by 1.7% reaching 20.6%, and extreme poverty would increase by 0.3% reaching 1.2% of the population. From scenarios (B) and (C) we can conclude that geographic targeting of the PDS largely reduces the system coverage and costs, yet the impact on poverty is relatively small, especially in light of the costs. Furthermore, we can conclude that a more precise targeting of the PDS at the sub-district level, using poverty mapping, would help effectively targeting the PDS to poverty pockets, and further reduce the coverage and cost of the system.

**(D) (No PDS) Targeted cash transfer of 35,000 ID/person/month with exclusion error of 40%**

The PDS was originally created as an emergency measure to avoid a food crisis by providing food rations to the population, that otherwise will not be provided (in light of the economic sanctions of the era). Today, the PDS has established dependency from households in their consumption and income. The PDS lowers the chances of the poor for decent job opportunities and impacts negatively on the development of private sector, hence job creation.

In this scenario, we assume that the government stops the PDS, and introduces a cash transfer targeting the poor. We assume that the probability of excluding the poor is 40%, so at the end around 60% of the recipients will be poor. The cash transfer amount is 35,000 ID/person/month—more than half of the food poverty line and is four times the average amount of the food poverty gap, a measure of the intensity of food poverty.

Under this scenario, 20% of the population would receive the targeted transfer costing a total of 2.86 trillion ID. Poverty and extreme poverty under this reform would remain about the same as current levels with a universal PDS system. While this scenario assumes that the transfer would only be an additional income added to households' expenditure, the outcomes can be boosted if the cash transfer is designed in a way to support the household in accessing the job market or generating income.

**(E) (No PDS) Targeted cash transfer of 35,000 ID/person/month with exclusion rate of 30%**

This scenario is the same as (D), but assumes that 70% of beneficiaries will be poor and 30% non-poor individuals will be reached in error. In this scenario, poverty and extreme poverty fall to 16.8% and 0.5%, respectively.

**Table 6.2: Comparison of Scenarios**

	<b>Benefit Incidence (% of Total Population)</b>	<b>Poverty Rate</b>	<b>PDS Annual Cost (Billion ID)</b>	<b>Food Poverty</b>
Base line: PDS intact	96%	18.9%	4,881.1	0.009
A: Complete cessation of PDS	0%	25.8%	0.0	0.0234
B: PDS in only rural areas	31%	20.1%	1,782.7	0.0141
C: PDS in only districts with poverty rate of 25%+	28%	20.6%	1,575.9	0.0121
D: Targeted cash transfer with exclusion error of 40%	20%	18.6%	2,859.7	0.0088
E: Targeted cash transfer with exclusion error of 30%	20%	16.8%	2,859.7	0.0053

**Table 6.2: Comparison of Scenarios**

	Comparison with Base Line			
	Poverty Rate		Government Budget (Billion ID)	
	Difference	% Change	Difference	% Change
<b>Base Line: PDS Intact</b>				
A: Complete cessation of PDS	6.9%	36%	-4,881.1	-100%
B: PDS in only rural areas	1.2%	6%	-3,098.4	-63%
C: PDS in only districts with poverty rate of 25%+	1.8%	9%	-3,305.2	-68%
D: Targeted cash transfer with exclusion error of 40%	-0.3%	-2%	-2,021.4	-41%
E: Targeted cash transfer with exclusion error of 30%	-2.1%	-11%	-2,021.4	-41%

## 7 Policy Recommendations

Poverty in Iraq is largely a children's concern. Children are the most affected group in society by both income poverty and deprivation of basic rights.

Besides the fact that income poverty is higher among children, the risk of poverty is also 25 points higher for children than for the overall population. These tendencies have been significantly increasing in the last few years in parallel to the country's impressive economic growth. These concerns guided the Government of Iraq's urgency towards mainstreaming a child poverty analysis in Iraq's National PRS-2, 2017-2021: the alleviation of child poverty. The results of this analysis confirm the importance of the Government's decision to prioritise children in the PRS-2.

In this section we provide specific recommendations on measures to alleviate children's burden of poverty. The policy recommendations advanced here are based on the evidence produced in this analysis, and occasionally complemented with other available and published information.

### 1. Child Responsive Budget Allocations

Oil revenue in Iraq almost tripled between 2008-2013, with accelerated extraction and production. This is reflected in the government's budget. The growth in government budget was more than 30-40% annually until 2013, creating an abundant fiscal space which has now been disrupted by the lower oil prices. This impressive growth translated in a reduction of poverty of at least four points (from 23% to 19% between 2007 and 2012) although the current government estimates suggest that poverty has increased since 2014. The steady economic growth resulted in an improvement in the living conditions of the population; per capita GDP grew on average by 7.8%, household PCE increased on average by 5.5% per year since 2007, and the risk of poverty has fallen nationally.

However, our analysis shows that growth in Iraq between 2007 to 2012 did not benefit children. Indeed, children continue to have the largest share (57.6%) of poverty in Iraq. This child penalty existed since at least 2007, and is a trend on the rise. The share of children in poverty increased between 2007 and 2012 from 54% of the total population to 57.6%. Additionally, in spite of a decrease in the incidence and headcount ratio of child poverty during this period (from 26.5% to 22.9%), because of the rapid population growth (2.5% to 3% per year, on average) including the increase in the total number of children (more than two million), the number of poor children did not significantly change from 3.74 to 3.7 million.

Additionally, evidence shows that besides the clear income-poverty penalty, child poverty measured by the number of deprivations of basic rights to health, education, protection, and minimum living standards is also a matter of great concern in Iraq. Previous analyses (see for example MICS 4) showed that 33% of children in Iraq were deprived of at least three of their basic rights. In the current study we showed that 39% of children are facing either one or both forms of poverty (income poverty or deprivations in two or more of their rights).

National budgeting is the process through which a country's goals and priorities are reflected in public policymaking. The heightened levels of poverty and vulnerability among children may be associated with the fact that government expenditure in 2013 on health, education, and cash and in-kind transfers ranked the lowest in the government's budget. The share of the combined total federal budget for education (6.4%) health (4.9%) and social services (6.1%) was each three to four times lower than the combined share for security (14%) and energy (21%). The combined social sector budget (about 17% of total expenditure), in 2013 was equivalent to the government operational expenses, and was much lower than the expenditure on the energy sector 21%. Iraq's spending on social sector - social protection (5%), education (6.4%) and health (4.9%) - was lower than the average for the MENA region (2%, 9% and 8%, respectively) in 2013, except for social protection.

Given this analysis, our recommendation is to engage in a more child responsive budget allocation, in order for effectively use resources to reduce child poverty (monetary and non-monetary) and provide social services for children.

Recognising that the national budget is the main instrument through which the government's commitments are translated into action, and budgets are competing political processes between different sectorial interests, a child sensitive budget is one that takes into account allocations into sectors that facilitate the realisation of children's rights, such as health, education and protection. The role of government spending in the social sector

has a tremendous impact on the well-being of children, especially the most vulnerable. Therefore including child friendly budgeting as a part of the national budget process is critical for advancing the survival, protection and development of children. The returns of child responsive budgeting translates in the fulfilment of children's rights, lowers their risk of falling into poverty, unemployment and social divisions, contributes towards human capital development through education and contribute to the economic growth of the country.

## 2 Evidence Base Decentralisation Planning

Our results show how the benefit of economic growth in Iraq did not spread equally across the 18 governorates between 2007 and 2012. Although during this period household PCE increased at an annual average of 5.5%, equivalent to an increase of 45,000 ID/person/month, by 2012 large geographical disparities existed among governorates and regions. Additionally, economic growth was accompanied by widening gap in living standards across governorates, and a divergence of the growth rate of PCE across governorates.

The positive economic growth resulted in a combination of impacts that led to an overall improvement in poverty rates, albeit with increasing inequality. Poverty decreased in incidence from 22.9% to 18.8% (between 2007 and 2012), as well as in depth and severity. The poverty gap index, a measure sensitive to how poor the poor are, decreased from 4.5% to 4.1% between 2007 and 2012. Similarly, the squared poverty gap index, a measure sensitive to changes in both the mean PCE of the poor and the inequality of PCE among the poor has decreased from 1.39 to 1.36%.

Yet, while poverty declined in most of the country, it was not uniform across all governorates and in some the poverty rate increased. We observed an overall increase in the inequality of the PCE distribution, and geographic disparities on poverty reduction, in addition to slow economic integration. These results translated in an increase of the Gini coefficient, a standard measure of income inequality, from 28.5% to 29.5% between 2007 and 2012.

The same geographic disparities were observed with the distribution of child multi-deprivations. Interestingly, the incidence of these two forms of poverty – child monetary poverty and child multi-deprivations - overlapped extensively, with the exception of Baghdad where we found a higher number of income poor children than multi-deprived children. For example, child monetary poverty varies as much as from 2% to 52% (between Sulaimaniyah and Muthanna, respectively); drop out from school (a child multi-deprivation) diverged as much as 2.4% and 20.6% (between Sulaimaniyah and Missan); and similarly for access to services it ranged from 1% of children without a school close to home in Kirkuk to 18.9% in Muthanna.

Determinants of poverty also varied across governorates. The analysis shows that governorate characteristics explain largely the differences in child poverty. After controlling for household socio-economic characteristics, the analysis shows that place of residence impacts largely on the risk of child poverty.

Decentralisation of government programmes is recognised to increase efficiency and effectiveness due to the improved ability to: deliver services; collect real time and context specific information on needs and conditions of programme delivery; increase support of beneficiaries; reduce congestion in communications; and to quicker react to unanticipated problems. It leads to a management by results approach, which focus in defining objectives achieved by unit results. In Iraq, the 2005 Constitution provided for a model of decentralised political and administrative government through devolution of authority to the governorates, and in 2008, the Law of Governorates Not Incorporated into a Region (Law 21) was approved. However, while governorates are allocated substantial funds based on oil revenue, these remain underutilised due to late disbursements and poor quality of planning, which is often based on assumptions and driven by opportunities rather than data.

The evidence produced in this report calls for the urgent need to address geographic inequalities with priority given to the most vulnerable governorates, and the information provided in this analysis allows for the development of context specific interventions that better address the typography of bottlenecks and deprivations as well as the difference among governorates in terms of available human capacity and financial space.

### 3. Child Grant (Targeted and Progressive Benefits)

Iraqi children represent the majority of the poor (at 57%) and face the highest rate of poverty (22.9%). Of great concern was the finding that extreme poverty is still prevalent in Iraq, in spite of the almost universal PDS; is the highest among children (1.2% versus 0.9% of total population) and has more than doubled between 2007-2012.

The analysis also shows how monetary poor children face higher rates of deprivations in all their rights, and that poverty increases the risk of deprivations. For example, 8% of non-poor children drop out from school on average, but the figure is almost one fifth (19%) for poor children.

In spite of this situation, the current social protection schemes in Iraq do not specifically cover children, except for minor orphans. In fact this analysis shows that only 8% of children live in households receiving cash transfers as compared to 11% for all the population. Moreover, while the number of beneficiaries of cash transfers increased by 22% between 2007 and 2012, this increase was not pro-children. Instead the coverage for 0-4 years old declined by 3% and stagnated for the other children's age groups. The cash assistance is not targeted toward the poor. As a result only 24% of all beneficiaries are poor, and the majority of the extremely poor (87%) and poor (89%) are not covered.

This report calls for establishing a targeted child grant for two core reasons. First, children represent the majority of the poor, and secondly, investing in children is where the returns on cash assistance are maximised in terms of reduced economic vulnerability and fulfilment of children's rights. The analysis further shows that the needs and vulnerabilities vary considerably between the extremely poor, the poor, and vulnerable, hence assistance needs to be progressive in meeting child poverty and deprivations with equity. The analysis put forward provides a strong basis to design targeted and progressive cash transfers.

### 4. Real-time Monitoring of Child Poverty and Deprivations

Evidence produced in this analysis shows that overall children have benefited less from the overall economic growth and the consequent decrease of poverty between 2007 and 2012. Had policymakers been able to capture this information earlier, they could have introduced on-going strategies or specific programmes addressing child poverty. Real time measures are critical for these age groups as the window of time left for children to overcome the consequences of poverty and deprivations is very short, and its consequences often irreversible. For example stunting is a condition that is determined in the first 1,000 days of life and thereafter irreversible. In Iraq almost one third of children suffer from stunting. Cognitive development is another critical area that if left unattended can have irreversible consequences.

Children represent a growing majority of the poor, face a higher risk of falling into poverty and of becoming deprived of their rights, and are increasingly left without social protection. In addition, these conditions vary across governorates with some having grim prospects with rising poverty and deprivations, along with stagnant economic conditions and rising inequality. Evidence-based policy recommendations call for the need to have a more child-responsive budgeting allocation; to strengthen evidence-based, decentralized planning and programming; to introduce a child grant within the existing social safety net, targeting vulnerable, poor and extremely poor children with progressive benefits; and to establish a real-time monitoring mechanism that captures child poverty on its broader definition.

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## Appendix A

### The Determinants of Poverty

The tables in the main text often show the **average marginal effects** of a logistic regression model. The vector of parameters of the logistic model,  $\beta$ , is estimated by Maximum Likelihood. The log-likelihood function has the following equation:

$$\log L(\beta) = \sum_{i=1}^N y_i \log P(y_i = 1|x_i) + (1 - y_i) \log (1 - P(y_i = 1|x_i))$$

with:

$$P(y_i = 1|x_i) = \frac{\exp(x_i' \beta)}{1 + \exp(x_i' \beta)}$$

In the previous equations  $y_i$  represents the dependent variable, which is a binary indicator for the observed condition that we want to study (e.g. the condition of being poor versus the condition of not-being poor);  $N$  is the estimated sample size and  $x_i'$  is the (transposed) vector of individual explanatory variables that enter the model (e.g. the age of the household head, the household size, etc.). Once the parameters have been estimated, marginal effects can be easily obtained. As Cameron and Trivedi (2005) note, “a marginal effect, or partial effect, most often measures the effect on the conditional mean of  $y_i$  of a change in one of the regressors, say  $y_k$ . In the linear regression model, the ME equals the relevant slope coefficient, greatly simplifying analysis. For nonlinear models such as logit or probit, this is no longer the case, leading to remarkably many different methods for calculating MEs” (p. 333).

Let us consider the ME computed from a logit model for a categorical independent variable. In this case the ME shows how the estimated probability of being poor -  $P(y_i = 1|x_1, x_2, x_3, \dots, x_k)$  - changes as the categorical variable changes from the reference category to another category, after controlling in some way for the other explanatory variables in the model (in the simple case of a dichotomous independent variable, the marginal effect is the difference in the adjusted predictions for the two groups, e.g. for urban and rural areas). There are different ways of controlling for the other variables in the model, leading to different types of MEs. The marginal effect at the means (MEM) is obtained by comparing the probability of being poor for two hypothetical average individuals that differ only with respect to the category of the independent variable under analysis, with all the other independent variables fixed at their mean values in the sample. This way of computing MEs has been widely used in the literature but has some drawbacks. Firstly “average” individuals are difficult to interpret: While there are individuals who are 47.57 years old, there is nobody who, say, is 35.5% from an urban area or 52.5% female. Further, the means are only one of many possible sets of values that could be used – and a set of values that no real person could fulfill seems troublesome. For these reasons, many researchers prefer Average Marginal Effects (AMEs). Intuitively, the AME for individuals from urban areas is computed as follows:

- Treat each person in the sample as though s/he was from an urban area, regardless of what the person's environment is. Leave all other independent variable values as is. Compute the probability that each person would have to be poor, that is  $P(y_i = 1|x_1, x_2, x_3, \dots, x_k)$ , where  $x_2$  is the dichotomous independent variable indicating whether the household lives in an urban ( $x_2 = 1$ ) or a rural area ( $x_2 = 0$ ).
- Repeat step 1, this time treating each household of the sample as though s/he was from a rural area:  $P(y_i = 1|x_1, x_2, x_3, \dots, x_k)$
- The difference in the two probabilities just computed is the individual marginal effect, which is therefore different for each person in the sample.
- Compute the average of all the marginal effects. This gives you the AME for people from an urban area:

$$AME = \frac{1}{N} \sum_{i=1}^N P(y_i = 1|x_1, x_2 = 1, x_3, \dots, x_k) - P(y_i = 1|x_1, x_2 = 0, x_3, \dots, x_k)$$



Given this methodology, with AMEs two hypothetical populations are compared: One where all are from an urban area and a second where all from a rural area, with the values of the other independent variables fixed at their observed values. Since the only difference between these two populations is their environment, living in an urban/rural area must be the cause of the differences in their likelihood of being poor. Hence, with respect to the MEM, all of the data is being used, not just the means, leading to more realistic estimates.

## Appendix B

### Determinants of Child Deprivations

Table B1 – What Drives Food Deprivation?

	Stunting	Underweight	Wasting	Diet
<b>Age of the Head of Household</b>				
0-29 (baseline)	0.282	0.100	0.061	0.097
30-39	0.230***	0.089	0.075	0.117***
40-49	0.229***	0.074***	0.064	0.123***
50-59	0.205***	0.082**	0.072	0.114***
60-69	0.208***	0.072***	0.066	0.126***
70+	0.233***	0.108	0.128***	0.133***
<b>Education of the Head of Household</b>				
No title (baseline)	0.236			0.112
Elementary	0.25			0.112
Intermediate/Secondary	0.212***			0.137***
Diploma or higher	0.191***			0.147***
<b>Employment Status of the Head</b>				
Employed (baseline)				0.121
Unemployed				0.138
Not in labour force				0.111**
<b>Job Sector of the Head: Agriculture</b>				
No (baseline)	0.228			0.117
Yes	0.262***			0.138***
<b>Job Sector of the Head: Industry</b>				
No (baseline)				0.122
Yes				0.089***
<b>Type of Sector of the Head: Governmental</b>				
No (baseline)		0.080		0.126
Yes		0.098***		0.103***
<b>Household Size</b>				
1-4 (baseline)			0.075	0.222

Table B1 – What Drives Food Deprivation?

	Stunting	Underweight	Wasting	Diet
5-6			0.069	0.164***
7-9			0.078	0.118***
10-11			0.082	0.093***
12-14			0.055**	0.089***
15+			0.061	0.085***
<b>Number of Children</b>				
1 (baseline)				0.137
2				0.141
3				0.124
5-6				0.112***
7+				0.11***
<b>Members in Employment</b>				
0 (baseline)	0.193			0.153
1	0.228***			0.121***
2	0.264***			0.114***
3	0.223			0.108***
4	0.219			0.098***
5+	0.201			0.105***
<b>Environment</b>				
Rural (baseline)	0.272			0.149
Urban	0.207***			0.099***
<b>Gender</b>				
Girl (baseline)	0.217	0.078	0.063	
Boy	0.243***	0.091***	0.08***	
<b>Household Receives Public Social Transfers</b>				
No (baseline)		0.069		
Yes		0.089***		
<b>Household Receives Public Pensions</b>				
No (baseline)				0.121
Yes				0.111***

**Table B1 – What Drives Food Deprivation?**

	Stunting	Underweight	Wasting	Diet
<b>Age Category</b>				
0-1 (baseline)	0.254	0.131	0.088	
2-4	0.215***	0.053***	0.060***	
5-9				
10-14				
15-17				
<b>Quintile of PCE</b>				
1 (baseline)	0.272	0.098	0.085	0.272
2	0.237***	0.092	0.066***	0.133***
3	0.224***	0.083**	0.064***	0.075***
4	0.209***	0.064***	0.064***	0.055***
5	0.184***	0.081	0.078	0.030***

Source: our estimates on 2012 IHSES data. \*\*\* (\*\*) means significant at 95% (90%) with respect to the baseline category. Only significant probabilities are shown

**Table B2 – What Drives Health Deprivation?**

	Access to Health Care	Time to Health Facilities	Skilled Attendance
<b>Age of the Head of Household</b>			
0-29 (baseline)	0.071		0.033
30-39	0.068		0.044***
40-49	0.078		0.038
50-59	0.085***		0.029
60-69	0.07		0.012***
70+	0.05***		0.013***
<b>Education of the Head of Household</b>			
No title (baseline)	0.080	0.042	0.037
Elementary	0.074**	0.037***	0.031**
Intermediate/Secondary	0.062***	0.035***	0.02***
Diploma or higher	0.065***	0.014***	0.018***
<b>Employment Status of the Head</b>			
Employed (baseline)	0.069		0.026

**Table B2 – What Drives Health Deprivation?**

	Access to Health Care	Time to Health Facilities	Skilled Attendance
Unemployed	0.078		0.018
Not in labour force	0.09***		0.054***
<b>Gender of the Head</b>			
Male (baseline)			
Female			
<b>Job Sector of the Head: Agriculture</b>			
No (baseline)		0.034	0.029
Yes		0.047***	0.038**
<b>Job Sector of the Head: Industry</b>			
No (baseline)	0.073		0.031
Yes	0.083**		0.019***
<b>Type of Sector of the Head: Governmental</b>			
No (baseline)	0.076		0.032
Yes	0.067***		0.023***
<b>Household Size</b>			
1-4 (baseline)	0.094	0.056	0.019
5-6	0.076	0.059	0.026**
7-9	0.076	0.042**	0.029***
10-11	0.065***	0.032***	0.034***
12-14	0.049***	0.02***	0.036***
15+	0.092	0.028***	0.04***
<b>Number of Children</b>			
1 (baseline)	0.035	0.031	
2	0.057***	0.035	
3	0.069***	0.023***	
5-6	0.078***	0.037	
7+	0.105***	0.046***	
<b>Number of Members in Employment</b>			
0 (baseline)	0.089	0.039	
1	0.073***	0.032***	

**Table B2 – What Drives Health Deprivation?**

	Access to Health Care	Time to Health Facilities	Skilled Attendance
2	0.076**	0.03***	
3	0.069***	0.053***	
4	0.059***	0.041	
5+	0.077	0.059***	
<b>Environment</b>			
Rural (baseline)		0.092	0.049
Urban		0.004***	0.019***
<b>Household Receives Public Social Transfers</b>			
No (baseline)		0.016	0.024
Yes		0.042***	0.033***
<b>Household Receives Public Pensions</b>			
No (baseline)	0.076	0.036	
Yes	0.065***	0.042***	
<b>Age Category</b>			
0-1 (baseline)	0.064		
2-4	0.067		
5-9	0.077***		
10-14	0.079***		
15-17	0.076***		
<b>Quintile of Real PCE</b>			
1 (baseline)	0.098	0.046	0.037
2	0.08***	0.039***	0.036
3	0.067***	0.03***	0.018***
4	0.052***	0.024***	0.03
5	0.054***	0.022***	0.021***

Source: our estimates on 2012 IHSES data. \*\*\* (\*\*) means significant at 95% (90%) with respect to the baseline category. Only significant probabilities are shown

**Table B3 – What Drives Education Deprivation?**

	Attendance	Achievements	Time to School
<b>Marital Status of the Head of Household</b>			
Not married (baseline)			0.056
Married			0.076***
<b>Education of the Head</b>			
No title (baseline)	0.139	0.308	0.088
Elementary	0.098***	0.243***	0.073***
Intermediate-Secondary	0.083***	0.19***	0.067***
Diploma or Higher	0.056***	0.093***	0.051***
<b>Employment Status of the Head</b>			
Employed (baseline)		0.234	0.071
Unemployed		0.33***	0.088
Not in labour force		0.237	0.085***
<b>Job Sector of the Head: Agriculture</b>			
No (baseline)	0.104		0.070
Yes	0.129***		0.104***
<b>Type of Sector of the Head: Governmental</b>			
No (baseline)	0.110		
Yes	0.096***		
<b>Household Size</b>			
1-4 (baseline)	0.138	0.453	0.099
5-6	0.121	0.303***	0.11
7-9	0.115	0.255***	0.081
10-11	0.107	0.218***	0.071**
12-14	0.09***	0.191***	0.053***
15+	0.078***	0.132***	0.05***
<b>Number of Children</b>			
1 (baseline)	0.098	0.178	0.049
2	0.093	0.211	0.053
3	0.084	0.237***	0.061***
5-6	0.109	0.255***	0.087***

**Table B3 – What Drives Education Deprivation?**

	<b>Attendance</b>	<b>Achievements</b>	<b>Time to School</b>
7+	0.125***	0.293***	0.097***
<b>Number of Members in Employment</b>			
0 (baseline)	0.101	0.156	0.061
1	0.093	0.179	0.066
2	0.105	0.264***	0.063
3	0.139***	0.304***	0.1***
4	0.153***	0.388***	0.097***
5+	0.162***	0.4***	0.151***
<b>Environment</b>			
Rural (baseline)	0.128	0.256	0.125
Urban	0.091***	0.23***	0.043***
<b>Gender</b>			
Girl (baseline)	0.147	0.274	0.024
Boy	0.067***	0.204***	0.033***
<b>Household Receives Public Social Transfers</b>			
No (baseline)		0.264	0.060
Yes		0.232***	0.077***
<b>Household Receives Public Pensions</b>			
No (baseline)	0.110		
Yes	0.092***		
<b>Age Category</b>			
0-1 (baseline)			
2-4			
5-9	0.062		0.045
10-14	0.225***		0.115***
15-17			0.118***
<b>Quintile of Real PCE</b>			
1 (baseline)	0.151	0.327	
2	0.101***	0.267***	
3	0.093***	0.221***	



**Table B3 – What Drives Education Deprivation?**

	Attendance	Achievements	Time to School
4	0.07***	0.19***	
5	0.065***	0.147***	

Source: our estimates on 2012 IHSES data. \*\*\* (\*\*) means significant at 95% (90%) with respect to the baseline category. Only significant probabilities are shown

**Table B4 – What Drives Housing, Water and Sanitation Deprivation?**

	Overcrowding	Shelter Type	Water	Sanitation
<b>Marital Status of the Head of Household</b>				
Not married (baseline)		0.103		
Married		0.079***		
<b>Age of the Head</b>				
0-29 (baseline)	0.097	0.090	0.186	0.063
30-39	0.074***	0.086	0.162***	0.052***
40-49	0.073***	0.08***	0.16***	0.056
50-59	0.071***	0.071***	0.13***	0.038***
60-69	0.054***	0.077***	0.137***	0.058
70+	0.046***	0.054***	0.118***	0.047***
<b>Education of the Head</b>				
No title (baseline)	0.080	0.094	0.171	0.074
Elementary	0.064***	0.079***	0.15***	0.049***
Intermediate/Secondary	0.054***	0.057***	0.134***	0.036***
Diploma or higher	0.05***	0.048***	0.127***	0.026***
<b>Employment Status of the Head</b>				
Employed (baseline)		0.072	0.146	
Unemployed		0.074	0.122***	
Not in labour force		0.115***	0.193***	
<b>Gender of the Head</b>				
Male (baseline)	0.057	0.045	0.112	0.039
Female	0.07***	0.084***	0.158***	0.054***

**Table B4 – What Drives Housing, Water and Sanitation Deprivation?**

	Overcrowding	Shelter Type	Water	Sanitation
<b>Job Sector of the Head: Agriculture</b>				
No (baseline)		0.073	0.144	0.051
Yes		0.126***	0.211***	0.073***
<b>Job Sector of the Head: Industry</b>				
No (baseline)	0.070	0.079		
Yes	0.055***	0.105***		
<b>Type of Sector of the Head: Governmental</b>				
No (baseline)	0.073		0.157	0.054
Yes	0.055***		0.145***	0.047***
<b>Household Size</b>				
1-4 (baseline)	0.013	0.144	0.197	0.082
5-6	0.004**	0.098***	0.172***	0.067
7-9	0.044***	0.078***	0.155***	0.054***
10-11	0.084***	0.073***	0.156***	0.031***
12-14	0.061***	0.064***	0.142***	0.033***
15+	0.186***	0.069***	0.126***	0.031***
<b>Number of Children</b>				
1 (baseline)	0.026	0.062	0.123	0.060
2	0.037	0.076***	0.133	0.063
3	0.041***	0.068	0.149***	0.047***
5-6	0.054***	0.08***	0.142***	0.051
7+	0.09***	0.094***	0.189***	0.045***
<b>Number of Members in Employment</b>				
0 (baseline)	0.089	0.095	0.169	0.067
1	0.072***	0.086**	0.15***	0.057**
2	0.064***	0.071***	0.147***	0.038***
3	0.057***	0.079***	0.163	0.046***
4	0.06***	0.056***	0.154**	0.038***
5+	0.087	0.061***	0.175	0.052***

**Table B4 – What Drives Housing, Water and Sanitation Deprivation?**

	Overcrowding	Shelter Type	Water	Sanitation
<b>Environment</b>				
Rural (baseline)	0.071	0.134	0.320	
Urban	0.067***	0.033***	0.036***	
<b>Gender</b>				
Girl (baseline)				0.055
Boy				0.05***
<b>Household Receives Public Social Transfers</b>				
No (baseline)		0.076	0.112	0.089
Yes		0.081***	0.168***	0.046***
<b>Household Receives Public Pensions</b>				
No (baseline)	0.072	0.085	0.159	0.054
Yes	0.059***	0.057***	0.133***	0.043***
<b>Quintile of Real PCE</b>				
1 (baseline)	0.102	0.119	0.187	0.078
2	0.06***	0.079***	0.156***	0.048***
3	0.046***	0.057***	0.138***	0.052***
4	0.035***	0.041***	0.108***	0.035***
5	0.024***	0.033***	0.127***	0.043***

Source: our estimates on 2012 IHSES data. \*\*\* (\*\*) means significant at 95% (90%) with respect to the baseline category. Only significant probabilities are shown

**Table B5 – What Drives Information and Protection Deprivation?**

	Child Labour	Early Marriage	Information
<b>Marital Status of the Head of Household</b>			
Not married (baseline)		0.024	0.154
Married		0.018**	0.125***
<b>Age of the Head</b>			
0-29 (baseline)	0.050	0.039	0.085
30-39	0.096***	0.011***	0.124***
40-49	0.082***	0.024***	0.133***
50-59	0.07***	0.019***	0.13***

**Table B5 – What Drives Information and Protection Deprivation?**

	<b>Child Labour</b>	<b>Early Marriage</b>	<b>Information</b>
60-69	0.063	0.013***	0.113***
70+	0.056	0.006***	0.157***
<b>Education of the Head</b>			
No title (baseline)	0.102		0.140
Elementary	0.076***		0.136
Intermediate/Secondary	0.057***		0.112***
Diploma or higher	0.036***		0.087***
<b>Employment Status of the Head</b>			
Employed (baseline)	0.069	0.015	0.135
Unemployed	0.129***	0.014	0.105***
Not in labor force	0.118***	0.029***	0.111***
<b>Gender of the Head</b>			
Male (baseline)			
Female			
<b>Job Sector of the Head: Agriculture</b>			
No (baseline)	0.075		0.126
Yes	0.102***		0.148***
<b>Job Sector of the Head: Industry</b>			
No (baseline)			
Yes			
<b>Type of Sector of the Head: Governmental</b>			
No (baseline)	0.081		0.136
Yes	0.07***		0.105***
<b>Household Size</b>			
1-4 (baseline)	0.206	0.012	0.322
5-6	0.178	0.007	0.215***
7-9	0.13***	0.016	0.133***
10-11	0.083***	0.023***	0.094***
12-14	0.052***	0.021**	0.079***
15+	0.026***	0.03***	0.038***

**Table B5 – What Drives Information and Protection Deprivation?**

	Child Labour	Early Marriage	Information
<b>Number of Children</b>			
1 (baseline)	0.024		0.088
2	0.033**		0.095
3	0.036***		0.11***
5-6	0.097***		0.154***
7+	0.181***		0.163***
<b>Number of Members in Employment</b>			
0 (baseline)	0.026	0.007	0.196
1	0.037***	0.006	0.139***
2	0.088***	0.027***	0.102***
3	0.196***	0.043***	0.1***
4	0.295***	0.026***	0.086***
5+	0.458***	0.022***	0.101***
<b>Environment</b>			
Rural (baseline)	0.089		0.141
Urban	0.07***		0.12***
<b>Gender</b>			
Girl (baseline)	0.073	0.022	
Boy	0.084***	0.014***	
<b>Household Receives Public Social Transfers</b>			
No (baseline)	0.087		0.148
Yes	0.077***		0.123***
<b>Household Receives Public Pensions</b>			
No (baseline)	0.081		
Yes	0.067***		
<b>Age Category</b>			
0-1 (baseline)			
2-4			
5-9	0.066	0.016	0.036
10-14	0.11***	0.022***	0.27***

**Table B5 – What Drives Information and Protection Deprivation?**

	<b>Child Labour</b>	<b>Early Marriage</b>	<b>Information</b>
15-17		0.019	0.264***
<b>Quintile of Real PCE</b>			
1 (baseline)	0.085	0.018	0.225
2	0.068***	0.023***	0.153***
3	0.075**	0.01***	0.11***
4	0.075**	0.025***	0.079***
5	0.099	0.012**	0.032***

Source: our estimates on 2012 IHSES data. \*\*\* (\*\*) means significant at 95% (90%) with respect to the baseline category. Only significant probabilities are shown





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