

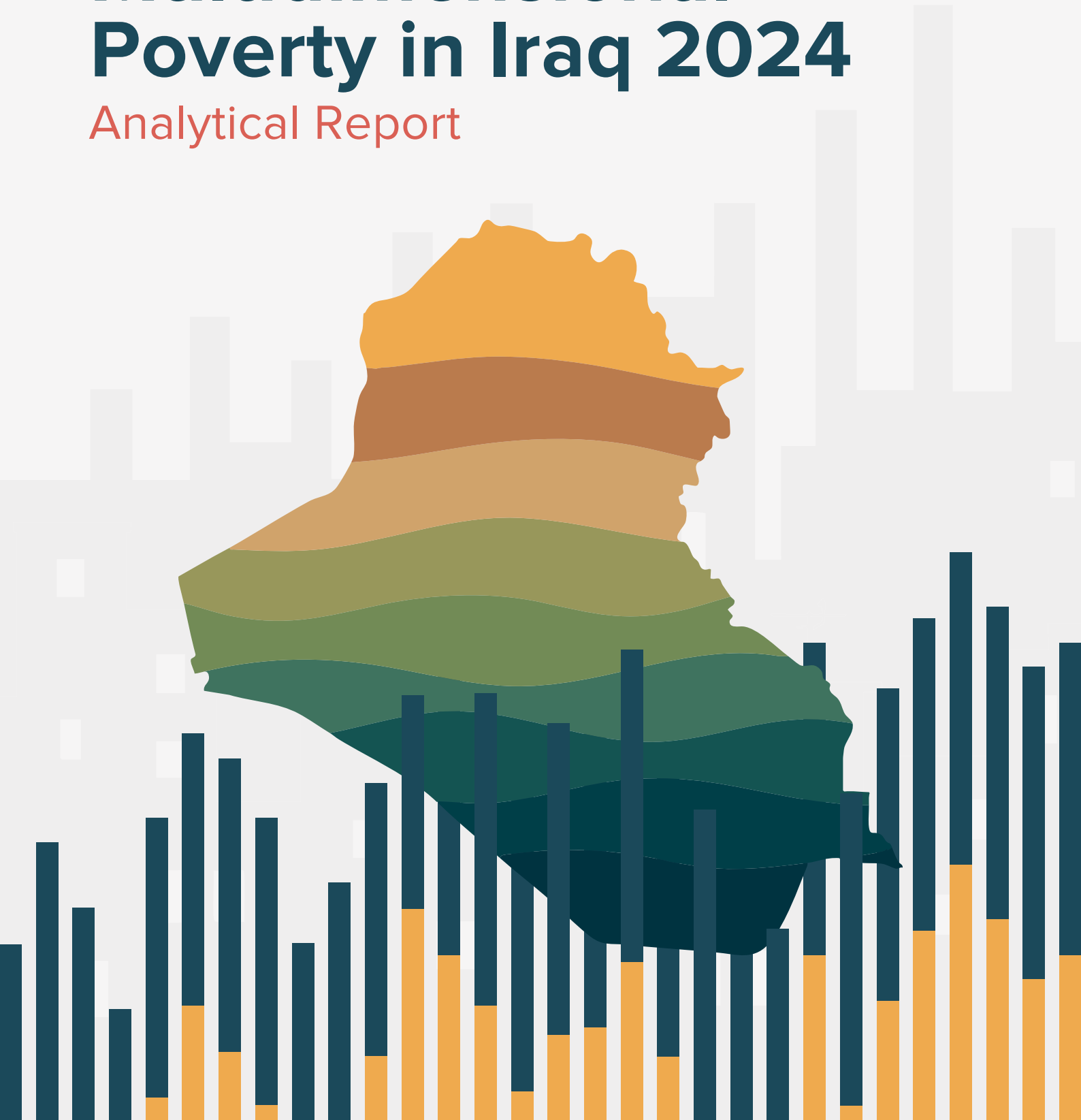


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Commission of statistics and GIS



Multidimensional Poverty in Iraq 2024

Analytical Report



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Analytical Report

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With the release of this report, it is essential to extend our sincere thanks and appreciation to the entities that provided significant support and facilitation throughout its development — a process that required great effort to establish a suitable model for measuring multidimensional poverty.

We express our deep appreciation to the Permanent Technical Committee for Poverty Reduction Policies in Iraq, chaired by His Excellency Professor Dr. Mohammed Ali Tamim, Deputy Prime Minister and Minister of Planning. Our gratitude also extends to Dr. Maher Johan, Deputy Minister of Planning for Technical Affairs and Dr. Diaan Awad Kazem, Head of the Commission of Statistics and Geographic Information Systems, for their supervision at various stages of the work.

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I also extend my thanks to the Oxford Poverty and Human Development Initiative team, especially Ms. Corinne and Ms. Monica.

Finally, I express my profound appreciation to the United Nations Development Programme (UNDP) for their continuous support throughout the preparation, development, and finalization of this report — with special recognition to the Programme Manager, Dr. Sundus Abbas.

I hope this report serves the various stakeholders involved in policymaking to help bring about a real reduction in multidimensional poverty levels in Iraq.

Dr. Mahdi Mohsen Al-Alak
Report Author

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ABBREVIATIONS

CSGIS	Commission of Statistics and Geographic Information Systems
CSO	Central Statistical Organization
IHSES	Iraq Household Social and Economic Survey
IP	Income Poverty
KRSO	Kurdistan Region Statistics Office
MICS	Multi-Indicator Cluster Survey
MPI	Multidimensional Poverty Index
NDP	National Development Plan
NMPI	National Multidimensional Poverty Index
OPHI	Oxford Poverty and Human Development Initiative
SDGs	Sustainable Development Goals
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
WB	World Bank
WMPI	Women Multidimensional Poverty Index



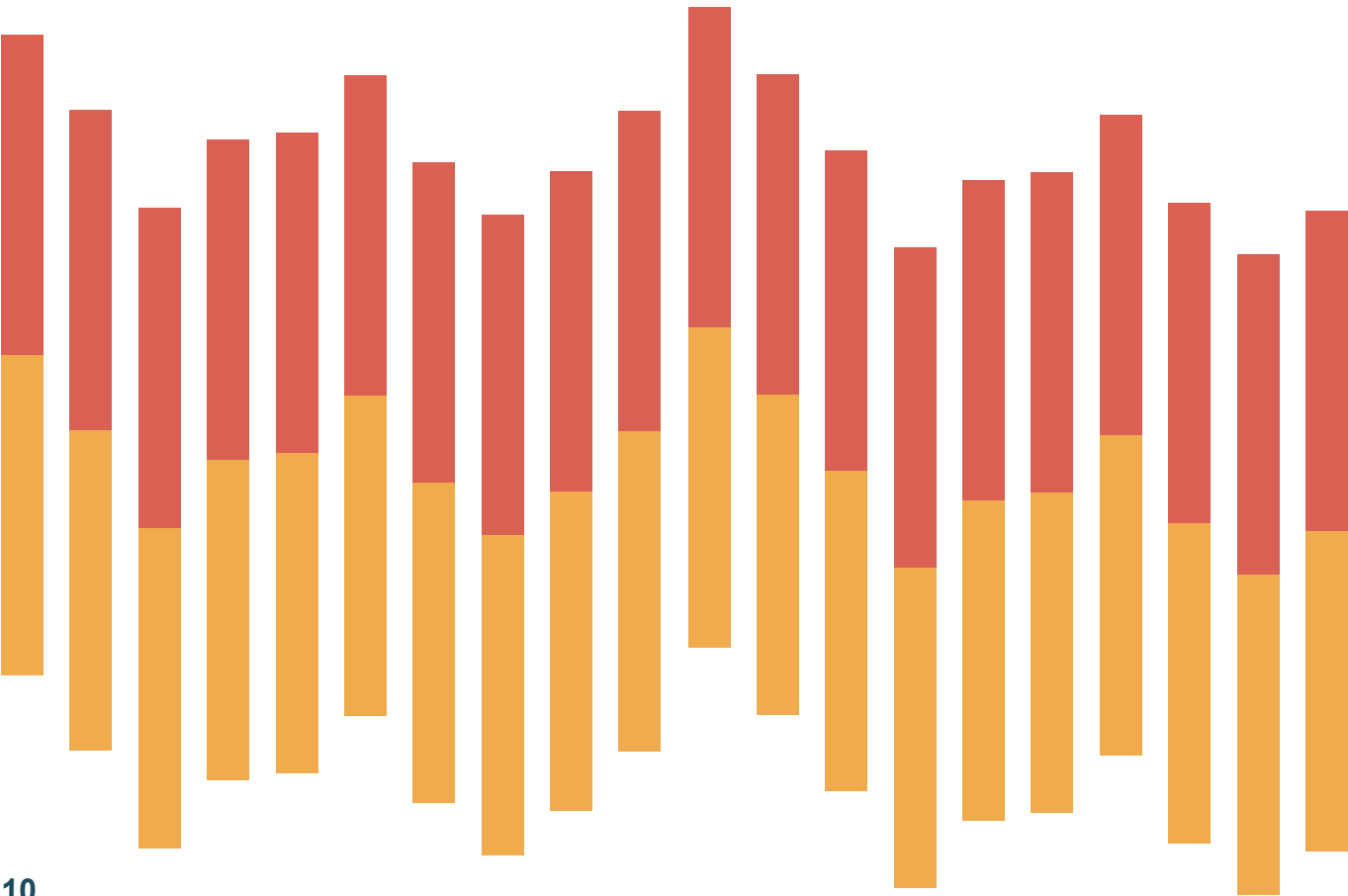
FOREWORD BY THE DEPUTY MINISTER OF PLANNING OF IRAQ

The 2024 Iraq Multidimensional Poverty Report represents a qualitative leap forward in Iraq’s ongoing effort to deeply understand poverty and address its many dimensions that profoundly impact our citizens’ lives.

Produced through dedicated collaboration among the Ministry of Planning and the Commission of Statistics and Geographic Information Systems (CSGIS), this report moves beyond traditional poverty measures—with a focus not only on income but rather, integrating crucial dimensions such as education, health, housing, employment, and household socio-economic resilience.

The true significance of this report extends beyond its national implications. Its strength lies in providing precise, actionable data at the governorate, district, and even sub-district levels. This granular focus serves as an essential instrument, enabling local policymakers to identify development gaps accurately and deploy resources more efficiently and equitably.

The comprehensive findings presented here are essential inputs to our next National Poverty Reduction Strategy and will significantly strengthen the evidence base guiding Iraq’s National Development Plan (2024–2028). Additionally, these insights align seamlessly with Iraq’s broader commitments under the Sustainable Development Goals (SDGs) 2030 and our national vision for sustainable development and inclusive growth



More notably, the report identifies substantial regional disparities, highlighting governorates such as Muthanna and Salah Al-Din that require urgent policy interventions, while also acknowledging commendable advancements made in governorates like Kirkuk and Baghdad. The stark divide between urban and rural areas—particularly evident in access to education, healthcare, and essential infrastructure—underscores the urgent need for targeted, context-specific policies and interventions.

This analytical tool, the National Multidimensional Poverty Index, not only pinpoints those most vulnerable but precisely guides our interventions by clarifying where and how to act. Going forward, our strategic approach involves mobilizing all available resources—governmental, private, and international—to implement focused strategies that effectively address multidimensional poverty. Transparency, good governance, and broad-based participation remain core principles driving our policy formulation and implementation efforts.

We extend sincere gratitude to our partners at the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI) for their invaluable technical and analytical support in developing the Iraq Multidimensional Poverty Index, ensuring international best practices are adapted meaningfully to our national context.

Our determination is clear - to leverage the insights from this comprehensive report to achieve significant progress, ensuring tangible improvements in the lives of every Iraqi citizen. Together, we aim to build a prosperous future characterized by dignity, equity, and sustainable development for all.



Dr. Maher Johan
*Undersecretary of the Ministry of
Planning for Technical Affairs*

FOREWORD BY THE UNDP RESIDENT REPRESENTATIVE IN IRAQ

I am proud to introduce this pivotal report—the “Multidimensional Poverty in Iraq - Analytical Report 2024.” This significant achievement results from tireless collaboration between the United Nations Development Programme (UNDP), the Government of Iraq, the Oxford Poverty and Human Development Initiative (OPHI), UNICEF, and numerous national stakeholders dedicated to comprehensively addressing poverty in Iraq.

Gains made, challenges to address

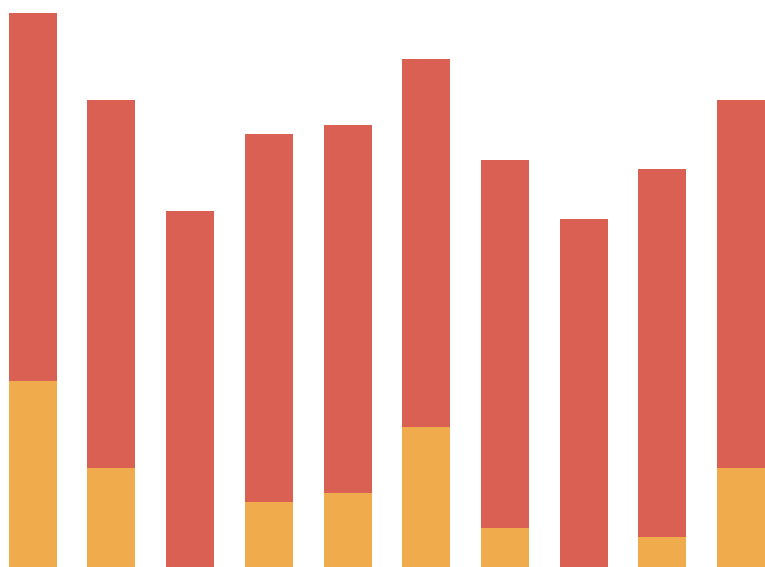
Drawing from the latest Iraq Household Socio-Economic Survey (IHSES) 2023-2024, complemented by 2024 General Population and Housing Census, the report illuminates Iraq’s nuanced multidimensional poverty landscape across five critical dimensions: 1) Education, 2) Health, 3) Living Conditions, 4) Employment, and 5) Household Shocks. The findings point to a commendable reduction in multidimensional poverty over recent years, demonstrating the effectiveness of progressive national policies and sustained international cooperation.

Despite gains made, significant challenges persist and require our collective commitment. The report highlights substantial regional disparities, with some governorates experiencing multidimensional poverty rates nearly double the national average. These disparities are notably pronounced between urban and rural areas, underscoring the critical need for targeted and context-specific policy interventions. Education emerges prominently as the most significant contributor to poverty, driven primarily by issues such as overcrowding and inconsistent school attendance. Addressing educational gaps, alongside strategic health interventions and improved infrastructure investments, remains imperative for sustainable poverty reduction in Iraq.

The power of data from the Iraq MPI

As demonstrated above, the utility of this report extends beyond traditional income-based poverty metrics. The deep dive into multiple deprivations that Iraqis face daily, provide national and subnational policymakers with actionable evidence for crafting targeted, inclusive, and sustainable policies is critical for the leadership of Iraq to take note of. The Multidimensional Poverty Index (MPI) offers granular insights at the subnational level as well, empowering local governments to prioritize interventions effectively, allocate resources strategically, and ensure that no community is left behind. Strategic utilization of the data in this important Report would allow Governors, for example, to more effectively advocate for the needs in their Governorates – with justifications grounded in assessments and evidence.

From UNDP’s perspective, the MPI is instrumental in aligning Iraq’s national strategies with global objectives, notably the Sustainable Development Goals (SDGs)—particularly SDG 1 on “Eradicating Poverty” and SDG 10 on “Reducing Inequalities”. This Report will significantly inform Iraq’s Third National Poverty Reduction Strategy and support the monitoring and evaluation framework of the National Development Plan 2024-2028.



Leaving no one behind

Poverty is inherently multidimensional, intricately woven into the social, economic, and environmental fabric of societies. In Iraq, where prolonged conflict, economic uncertainty, and climate-related stresses have disproportionately impacted vulnerable populations, the necessity for accurate and localized data has never been more urgent. The release of this MPI report represents a landmark step forward in transforming Iraq's poverty discourse, shifting from generalized income metrics to people-centered, localized solutions.

As we look ahead, UNDP remains committed to advancing evidence-based policy, promoting inclusive and equitable development, and strengthening resilience across Iraq. This MPI report is not merely an endpoint but a critical beginning—laying the groundwork for smarter planning, deeper collaboration, and the sustained prosperity and stability of communities throughout Iraq.

Together, we can ensure a future where development reaches everyone, leaving no one behind.



A handwritten signature in blue ink, appearing to read 'A. Lootsma', with a long, sweeping underline.

Auke Lootsma
Resident Representative
UNDP Iraq

EXECUTIVE SUMMARY

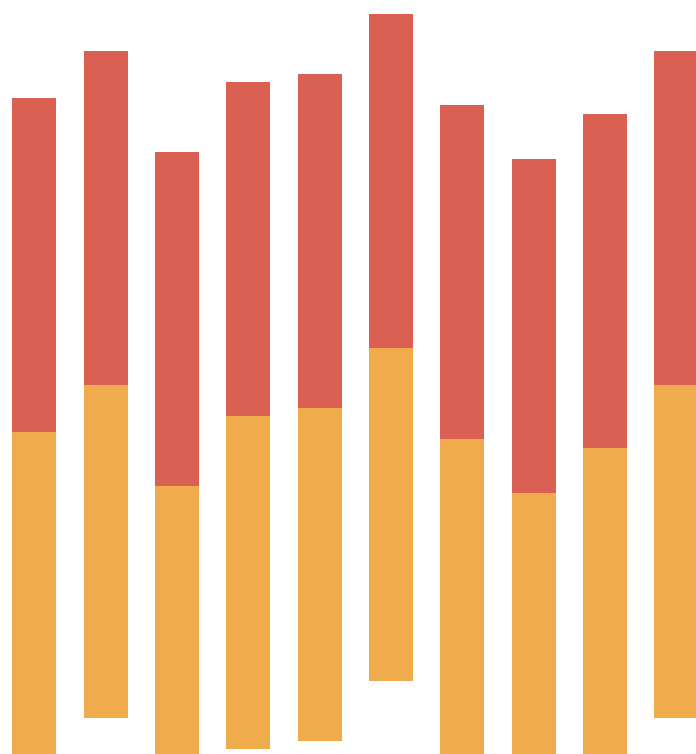
After 2003, the Iraqi Government paid special attention to addressing poverty in its various forms, and the regular implementation of the Iraq Household Socio-Economic Survey helped to provide sound statistical measures to describe poverty and identify its features. Subsequently, two national poverty reduction strategies were produced, the first for the period 2010-2014 and the second for the period 2018-2022. Although these two strategies adopted the income poverty measure as a pillar in moving towards improving the situation of the poor, each targeted a set of sub-goals (outcomes that in fact). These sub-goals represent the dimensions that became part of the new methodology for measuring poverty, which now known as multidimensional poverty, when the. The dimensions of education, health, and housing conditions became the main pillars of poverty reduction Strategies with a large number of planned activities.

Since 2011, Iraq has been included in the global Multidimensional Poverty Index (global MPI), computed by OPHI and UNDP and reported in the Global Human Development Report, using data from MICS 2006, 2011, and 2018.

The first NMPI was produced in 2022 based on MICS 2011 and 2018 rounds. This report is the second national MPINMPI report,. The measurements are based on the results of the most recent Iraq Household Social and Economic Survey conducted in 2023-2024. The 2024 NMPI consists of five dimensions (education, health, living conditions, employment, and shocks) with sixteen indicators. Although it added the dimensions of employment and shocks to the dimensions of the global MPI, this was needed by the necessity of building a national model that reflects important aspects of multidimensional poverty in Iraq. The findings of the reportNMPI 2024 reflected a gradual

decline in multidimensional poverty indicators. The analytical results have shown a positive relation between household size in Iraq and multidimensional poverty indicators. The larger the household, the greater the burden of poverty. The poverty level is inversely proportional to both the education level of household head and income level.

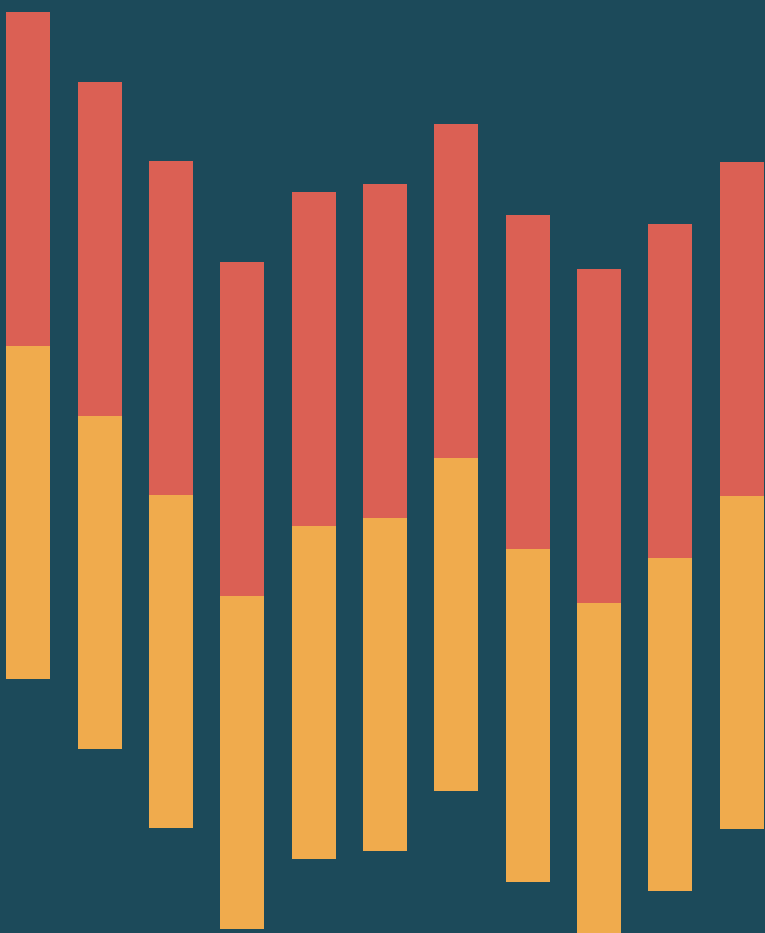
The results of NMPI 2024 at governorate level revealed clear disparities between governorates, as the MPI in some governorates is double the NMPI such as Muthanna, while it decreases to around 50% of the NMPI in some other governorates, such as Kirkuk. As for the levels of deprivation for 2024, it was noted that overcrowding was the indicator with the highest level of deprivation as, affecting 32.1% of the percentage of population deprived. It was closely followed by percentage of population deprived in the education indicator—specifically, the proportion of individuals who had not completed nine years of schooling—which stood at 31.4%. In contrast, deprivation rates in the indicators of employment and household shocks have showed a significant decline.



The report paid special attention to the policy implications to be an addition to what was mentioned in the first national report on multidimensional poverty, because what distinguishes the multidimensional poverty measure is that it makes it possible not only to determine where the majority of the poor live, but also to identify the multiple and interrelated clusters of deprivation. It also enables government officials to identify spatial and sectoral poverty levels, which allows adopting policies to reduce inequality and contributes to better achieving the Sustainable Development Goals (SDGs) in order to achieve the aspiration of leaving no one behind. This will be a direct tool for assessing the impact of the Iraqi government curriculum in improving the conditions of the poor on one hand, and at the same time serve as a threshold to be used in tracking the effects of the aforementioned activities during next years or at the end of the new National Development Plan 2024-2028.

The detailed analysis of the Multidimensional Poverty Index makes it possible to identify sectors, regions and community segments that need a special attention, provides opportunities for broad policy decisions, especially social ones, and helps raise the elements of human development towards the effective use of public funds, based on the design of a detailed budget at the level of governorates and sectors.

The report provided a scenario on how to benefit from the detailed deprivation results to formulate priorities for building a new poverty reduction strategy. This requires designing a combination of priorities at the governorate level on the one hand, and at the sector level (indicators) on the other. The report's findings, which reveal levels of deprivation at the governorate level for each indicator, will provide a clear map for poverty reduction priorities. Therefore, policymakers should prioritize the governorate with the greatest deprivation when allocating resources. On the other hand, ministries and sectoral entities will be able to identify areas of deprivation in the services provided by each entity and set their sectoral plan priorities accordingly.



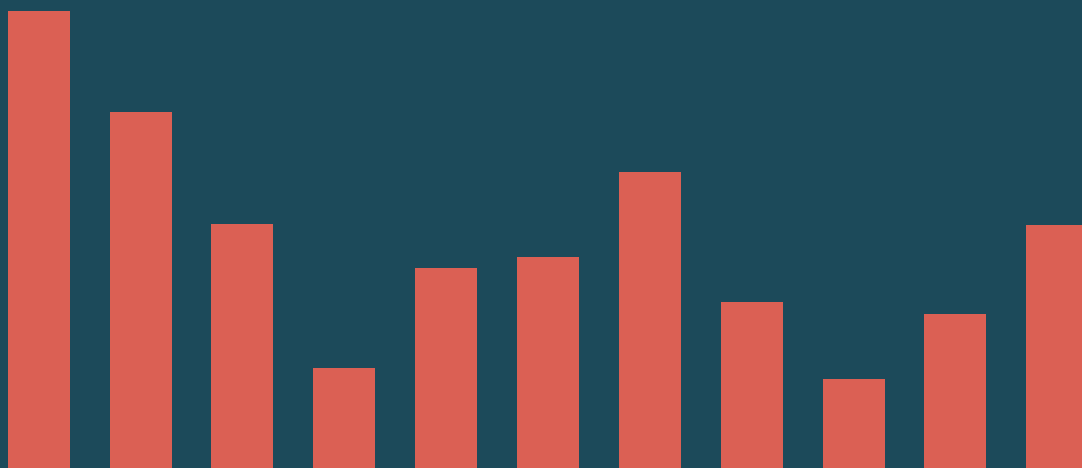
1. INTRODUCTION

The government program 2021-2024 included specific priorities, foremost among which was poverty reduction in its various dimensions, as well as the aim reflected in Iraq's Vision for Sustainable Development 2030 "Empowered people in a safe country, unified society with diversified economy, sustainable environment, justice and good governance". Building the human capital development was one of the vision's five priorities. It is noteworthy that the goals set to achieve this priority ranged between reducing poverty, creating secure job opportunities, ensuring high-quality and inclusive education, and establishing an efficient healthcare system with decent housing. The multidimensionality of this priority came in line with the development in the methodologies for measuring poverty, to include the educational, health and housing service aspects, within what became known as the Multidimensional Poverty Index (MPI), in addition to income poverty (IP) measurement.

Studying this index and analyzing its results complement previous national efforts that adopted this approach in measuring poverty. The Commission of Statistics and Geographic Information Systems (formerly the Central Statistical Organization) has produced an analytical report on national MPI in 2022 in partnership with a number of national and international organizations. However, this index was based on MICS survey results, and it was limited in the number of dimensions and indicators.

The Iraq Household Socio-Economic Survey (IHSES 3) has been implemented by the Commission of Statistics and Geographic Information Systems (CSGIS) and Kurdistan Region Statistics Office (KRSO) with the support of the World Bank over continuous twelve months between 2023 and 2024. Important information, such as health, education and living standards, became available on the Iraqi household economic, social, demographic and living conditions characteristics. This has provided a wide range of data that is used to measure multidimensional poverty with a broader vision to those dimensions and their inclusion of other important fields in the Iraqi individual's life, such as employment status and time use, where the survey provided data on new indicators, helped in the planning to build a new national MPI in Iraq based on the latest statistical data. Building the index continued for several months, where CSGIS and KRSO worked together in cooperation and partnership with the United Nations Development Program (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI) team to support Iraq in producing its second national report on multidimensional poverty.

While the High Committee for Poverty Reduction Strategy - Ministry of Planning (MOP) is presenting this report as a first analytical publication on the results of IHSES survey, it is keen to track the effects of various dimensions and indicators and adopt policies to reduce multidimensional poverty in accordance with the priorities reflected in this report.



The report consists of six sections starting with the introduction then national context including a historical background and a briefing on the IP measurement in Iraq, it also presents an introduction on the multidimensional poverty measurement through demonstrating the household basic characteristics related to poverty as well as purpose of poverty measurement. While section three addresses methodology of MPI measurement, including Alkire-Foster Method in calculating indicators, data source, structure adopted in building measures namely, unit of identification of analysis, dimensions,

indicators and deprivation cutoffs then weights and poverty cutoffs and levels of deprivation. Section four presents an analysis of detailed key results of multidimensional poverty by area, region, governorate, household size, education level of the household head and household income. Section five addresses the implication of policies aiming at investing poverty measurement results in targeting the poor and reduce multidimensional poverty levels. Finally, section five presents the recommendations followed by the appendices.



2

NATIONAL CONTEXT

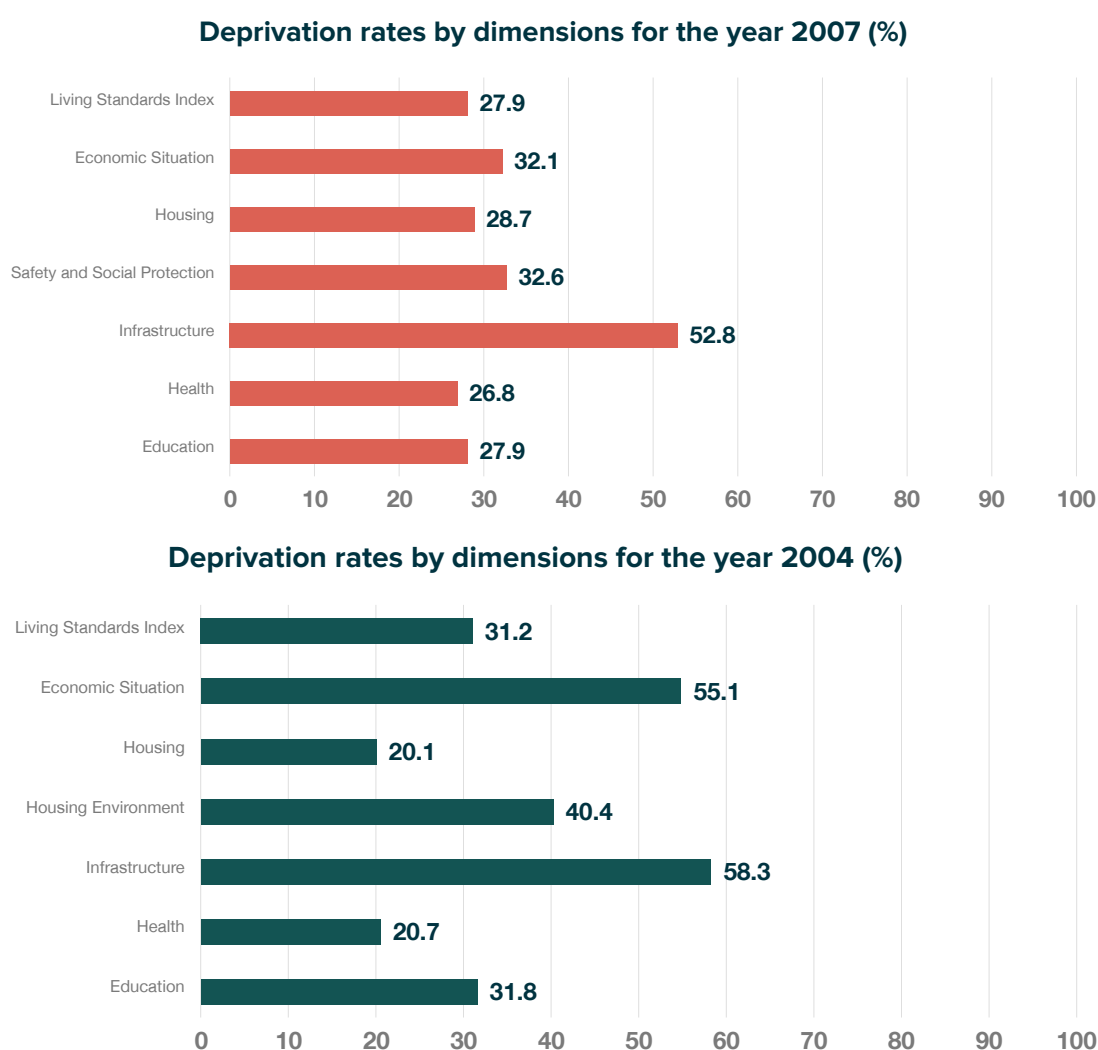


2.1 HISTORICAL BACKGROUND

In light of the major transformations that took place in Iraq after the change of the political regime in 2003, in-depth discussions were held between the Central Statistical Organization (currently the Commission of Statistics and Geographic Information Systems) and the United Nations Development Program (UNDP), aimed at adopting studies complementary to the series of household statistical surveys by taking note of living standards in Iraq in terms of multidimensional and easy-to-interpret measures. In 2006 a composite measure was selected to represent standard of living using the Unsatisfied Basic Needs Index to estimate the level of deprivation of those needs.

The index was built based on six dimensions: education, health, infrastructure, housing, housing environment, and household economic status, and measured through 42 indicators¹. In 2011, the deprivation measure was recalculated through six dimensions: economic status, protection and social security, education, health, infrastructure and housing².

Figure 1: Deprivation rates by dimensions for 2004 and 2007



Source: Central Statistical Organization, living Conditions and deprivation maps, 2006 and 2011.

¹ Central Statistical Organization, UNDP: Deprivation maps and level of living in Iraq, 2006

² Central Statistical Organization, UNDP: Deprivation maps and level of living in Iraq, 2011

Although there are some differences in the composition of the two indices in figure (1), a slight improvement is observed in the decreased deprivation rates, whether at the overall level (from 31.2% to 27.9%) or mostly at the level of each dimension. However, this improvement was achieved before the launch of the first poverty reduction strategy in 2010. Living conditions were declining in the year following the fall of the former political regime in 2003, as human development services and infrastructure in general declined after the massive destruction. Four years later, there has been a relative improvement, and those services and infrastructure have been rehabilitated, at least partially, due to the improvement in the country's economic situation and the international support that Iraq has received to support its construction and stability.

In 2010, the Global Human Development Report for the first time adopted a new approach in poverty measurement, that goes beyond limiting poverty measures only to the income dimension and tracks the deprivations in the human development dimensions. This approach is known as the MPI, in addition to the various

human development indices produced within the aforementioned report. Iraq took the initiative to produce a National Multidimensional Poverty Index (NMPI), the availability of Multi indicators Cluster Survey, (MICS) results in its waves 5 and 6 which is implemented in 2011 and 2018 with UNICEF support had an essential role in this issue. But, although this survey has a significant role in providing important statistical indicators, its focus on the situation of children and women has limited the number of dimensions and indicators related to the methodology of multidimensional poverty measurement.

After 2010, Iraq experienced serious security, political and social challenges and disturbances. The occupation of the large areas of Iraqi territory by terrorist organizations between 2014 and 2017, resulted in an increase in MPI 0.277 in 2011. The security situation witnessed a relative improvement in 2018 after the elimination of terrorist organizations and the liberation of the areas they occupied, as it was estimated then at 0.186³, which is close to the IP rate, estimated at 18.9% in the same year.

Seven years later, it was necessary to measure the multidimensional poverty for the following reasons:

- 2025 is the last year for the implementation of the current Iraqi government's programme. The priorities of the government program have reflected an attention to the dimensions of MPI, where four of the five priorities are obviously targeting those dimensions (Figure 2). Thus, building a new MPI provides a direct assessment base for that program.

³Central Statistical Organization, Kurdistan Region Statistics Office, ESCWA, OPHI, UNDP, National Multidimensional Poverty Index and Child-Adjusted Multidimensional Poverty Index, 2022.

Figure 2: Priorities of the Government Program



Source: Ministry of Planning, National Development Plan 2024 - 2028

• In 2019, Iraq is in the mid of the current decade in its adopted a vision for sustainable development 2030⁴, an objective assessment should be conducted for its with priorities, foremost of which is building the human being through basic goals; to reach the national goals of the SDGs. These goals included poverty reduction, providing decent and protected job opportunities for all the unemployed, a quality and inclusive educational system, an efficient and covered health system, providing decent housing and ending the problem of slums. The NMPI will provide a possibility of the assessment and evaluation of the SDGs' progress and challenges.

• As for the National Development Plan (NDP) 2024-2028⁵, which is the latest in the development building process in Iraq, the trend towards putting an end to poverty inheritance was one of the directions of programming the development action, it included a set of activities:

- Provide financial allocations for the implementation of the Third Poverty Reduction Strategy.
- Support the reconstruction funds of the poorest governorates.
- Identify poverty databases and implement specialized survey.

• The MPI provides detailed indicators that considerably serve the voluntary reports produced by the MOP on the progress achieved in the Sustainable Development Goals, where the third voluntary report is expected to be released this year.

On the other hand, the Iraqi government launched two poverty reduction strategies, the first in 2010 and the second in 2014. Although the focus in describing the state of poverty in Iraq when developing these two strategies was based on measuring IP, the outcomes formulated as sub-goals in these two strategies reflected addressing deprivation in the key dimensions of poverty that constitute the measurement methodology of the MPI. As Iraq prepares to launch the Third Poverty Reduction Strategy, this report will mark the beginning of a process through which the progress achieved in the key dimensions of both the strategy and the index in the coming years.

⁴Ministry of Planning, "Iraq Vision for Sustainable Development 2030", 2019.

⁵Ministry of Planning, National Development Plan 2024-2028.

Figure 3 shows the goals, outcomes and activities of the two strategies mentioned. However, it should be noted that the overall goal of the two Poverty Reduction Strategies in Iraq had sub-goals, which are in fact addressing of poverty reduction from a multidimensional perspective. Both strategies had a set of target outcomes close to the perspective of the Global MPI adopted since 2010.

Figure 3: Goals, Outcomes and Activities of Poverty Reduction Strategies in Iraq for (2010 - 2014) and (2018 - 2022)

Outcomes	Activities	Activities	Outcomes
- Higher and sustainable income from work for the poor. - Improved health. - Promoting and improving education for the poor. - Adequate housing and a resilient environment. - Effective social protection for the poor. - Emergency response activities.	7 4 6 5 6 4	16 14 21 14 11 11	- Higher income from work for the poor. - Improved health standards for the poor. - Expansion and improvement of education for the poor. - Better housing for the poor. - Effective social protection for the poor. - Reduced inequality between women and men among the poor.
6	32	87	6

Source: Central Statistical Organization, National Poverty Reduction Strategy Reports 2009 and 2018.

On a more general level, the seventeen Sustainable Development Goals 2030 (SDGs) reveal that a new MPI will help following up the progress achieved by assessing about half of those goals (Figure 4).

Figure 4: Iraq National Multidimensional Poverty Index Response to Seven of the SDGs

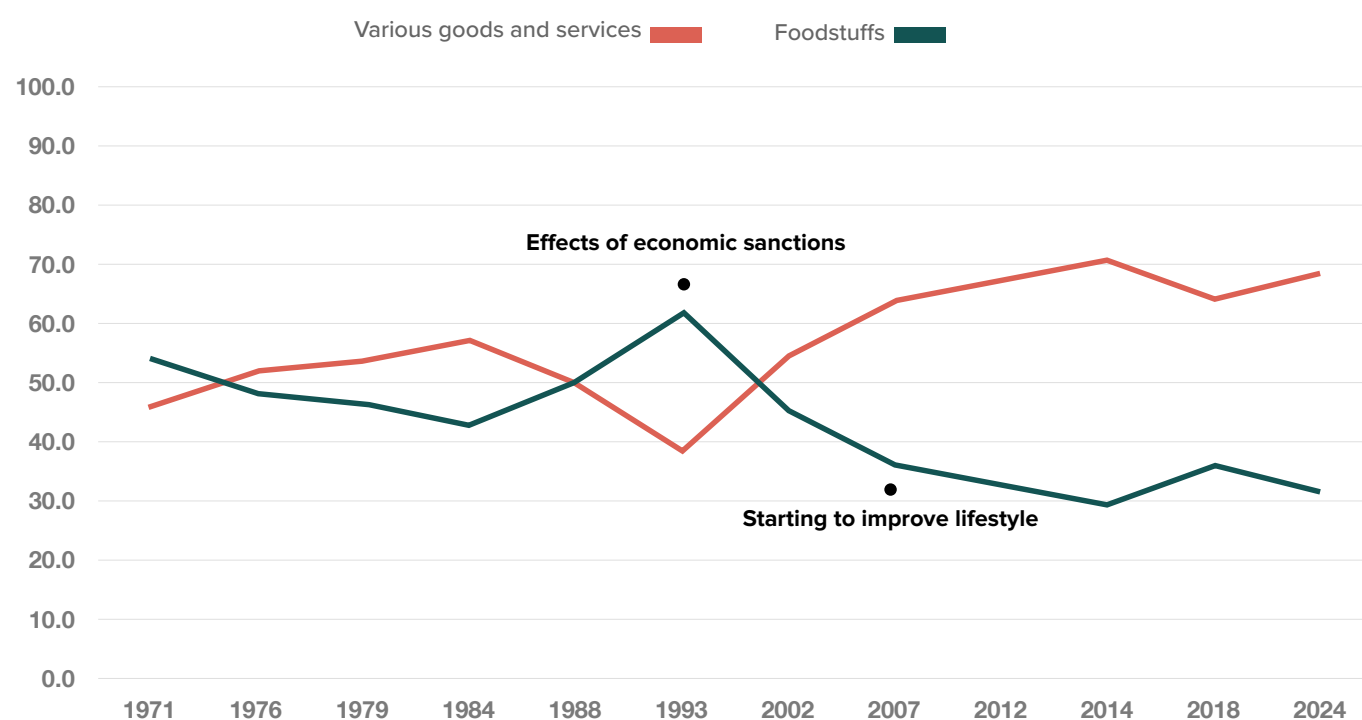


Based on the aforementioned, a new NMPI based on the latest and widest IHSES, effectively contributes to achieving all the programs, tasks and plans previously presented, and its effects will remain for the next five years until 2030, being a direct tool to assessing the impacts of the Iraqi government curriculum in improving the conditions of the poor on one hand, and at the same time serves as a threshold to be used in tracking the effects of the aforementioned activities during next years or at the end of the NDP term in 2028.

2.2 INCOME POVERTY

Despite the availability of reliable statistical data on living conditions in Iraq over decades in which levels of temporal and spatial coverage were completed in 1971, 1976, 1979, 1984, 1988, and 1993, the measurement of poverty was prohibited for purely political reasons. However, the living conditions of Iraqis were extremely poor, especially during the years of economic sanctions imposed on Iraq from 1991 to 2003. This situation was assessed through two main indicators. First, is the pattern of expenditure on goods and services, as the proportional distribution of household spending on goods and services indicates the decline or improvement of the standard of living. Second, is the levels and types of the household income and disparities between different wealth quintiles. In terms of the household expenditure, Iraq witnessed a slight improvement reflected by the relative decrease in the household spending on foodstuffs, as a direct indicator of the improvement in the standard of living until 1991, when economic sanctions imposed on Iraq after the occupation of Kuwait, which had left severed impact on the standard of living by 1993 (Figure 5).

Figure 5: Proportional Distribution of Household Expenditure on Food and Other Goods and Services in Iraq for (1971 - 2024)



Source: Commission of Statistics and Geographic Information Systems, Results of Iraq Household Socio-Economic Survey for different years.

After the political change in 2003 and the end of economic sanctions, the standard of living in Iraq began to improve, the percentage of expenditure on foodstuffs decreased again to shift towards other goods and services related to improving the educational, health, recreational and other conditions. The trend towards studying poverty in Iraq has also been one of the priorities of the official statistical authorities. After the implementation of the Iraq Household Socio-Economic Survey in 2007, the Commission of Statistics and Geographic Information Systems, in coordination with the Kurdistan Region Statistics Office and the support of the World Bank, embarked on building the first poverty measurement model in Iraq that estimates poverty line in terms of two main cutoffs, one related to the food poverty line and the other to the non-food poverty⁶, and built by extrapolating the living details resulted from the 2007 survey. The composition of the mentioned

poverty line was based on the assumption that the said line provides the right to secure non-food goods and services to satisfy the need for those goods and services to an appropriate extent. 47% of the poverty line value is allocated to food to ensure sufficient calories necessary to sustain human life and enable persons to perform daily activities, taking into account the nutritional balance required in terms of quality and quantity. While 53% was allocated to non-food goods and services that cover the main aspects of the individual's needs in an acceptable manner, including health, education and housing services. This methodology went beyond the traditional measure of poverty in terms of income, which is classified by the World Bank as those individuals living on less than \$1.90 a day. The same methodology was adopted after the implementation of the Iraq Household Socio-Economic Survey in 2012, 2018, and 2024 (Table 1).

Table 1: Income poverty lines 2007 - 2024

	2007	2012	2018	2024
Income Poverty line (1000 ID)	77	105	111	137
Income Poverty (%)	22.9	18.9	20.1	17.5

Source: Commission of Statistics and Geographic Information Systems, household surveys results 2007, 2012, 2018, 2024.

⁶Central Statistical Organization, World Bank, Confronting Poverty in Iraq, 2011.

The IP rates for 2007, 2012, 2018 and 2024 reveal a relative but limited improvement, which did not come up to what the two strategies aimed at, as a result of the security and economic conditions that Iraq experienced over a period of more than ten years between 2007 and 2019. The sub-goals of the two strategies have not fundamentally achieved the planned targets. The Second National Poverty Reduction Strategy has adopted reducing poverty rate by 25% in 2022, i.e. by reducing the poverty rate to 14.1% in 2022, but poverty rate for 2023-2024 stood at 17.5%, based on a IHSES3, reflects that the rate of decrease did not exceed 8%, which means that greater efforts need to

be exerted. On the other hand, the poverty gap and poverty severity decreased in Iraq, which reflect severe or very severe, which means that the possibility of falling into the risk of such deprivation is very limited at this level⁷. Severe income deprivation in its low value is attributed to the role of the almost comprehensive coverage of the ration card system which provides a basket of foods stuffs with sufficient quantities that meet the household needs, of which (flour, rice, cooking oil, sugar, and other items) This is reinforced by Gini coefficient, which measures the level of income disparities, where the indicators in table 2 has remained stable at around 30%, reflecting persistent inequalities.

Table 2: Income Poverty Rates in Iraq by Year

Year	2007	2012	2018	2024
Poverty rate (%)	22.9	18.9	20.1	17.5
Poverty gap (%)	4.5	4.1	4.1	3.9
Severity of poverty (%)	1.4	1.4	1.4	1.3
Gini coefficient (%)	30.9	29.5	29.6	29.8

Source: Commission of Statistics and Geographic Information Systems, household surveys results 2007, 2012, 2018, 2024.

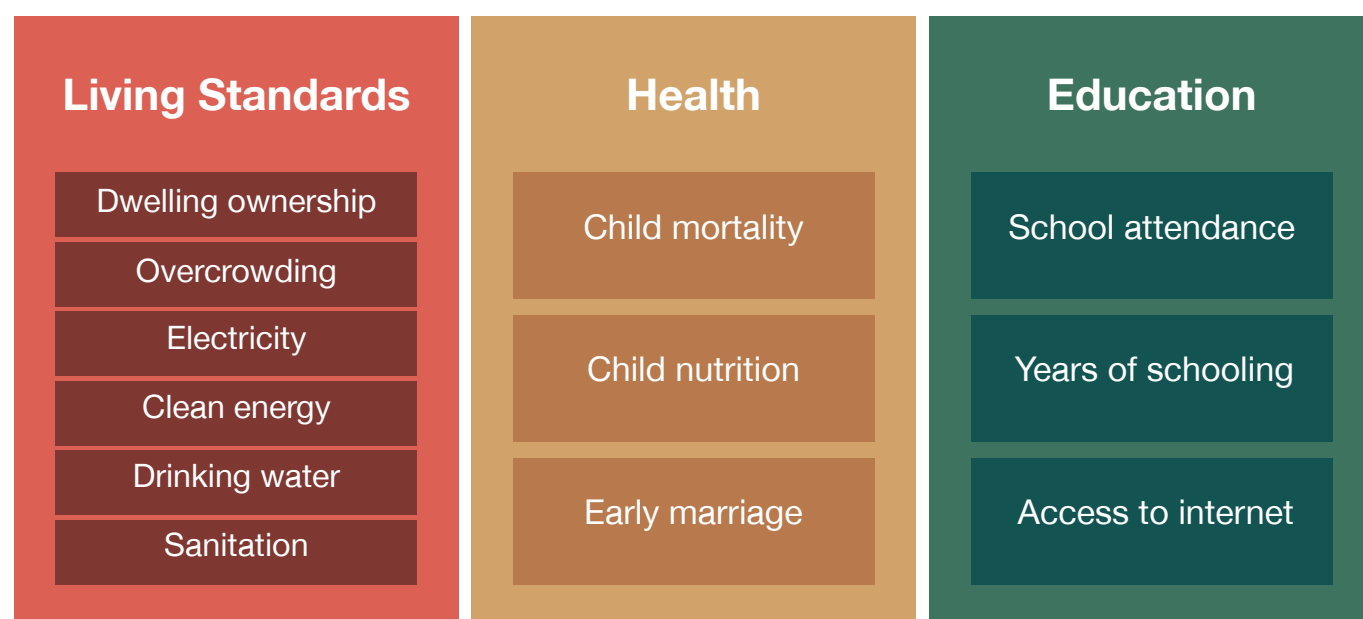
⁷ Poverty gap means the size of the gap between the income of the poor and the level of poverty line and is calculated with absolute monetary units sufficient to raise the levels of consumption of all the poor to the level of the poverty line and calculated as a percentage of the total value of consumption of the entire population when their consumption is equal to the poverty line. While depth of poverty is Square of the value of the poverty gap and reflects the intensity of deprivation.



2.3 PERVIOUS ATTEMPT TO ESTIMATE MPI

A first attempt to estimate NMPI for 2011 and 2018 was in 2022⁸ (Figure 6) based on the results of Multi Indicator Cluster Survey- MICS 5 & 6. The index was estimated by using 3 dimensions only. The details of NMPI are shown in table 3.

Figure 6: Poverty Dimensions and Indicators in Iraq for 2011 and 2018



It is noted that there was a clear decline in multidimensional poverty measures between 2011 and 2018. At the national level, the incidence (H,%) decreased from 42.9% to 24.3%, while the intensity (A,%) decreased from 49.1% to 24.3%. Therefore, the MPI value fell in 2018 to approximately half of its value in 2011 (0.114 and 0.201, respectively).

This conclusion applies to all other classifications, such as environment (urban, rural), Kurdistan region compared to central and southern Iraq, and governorates. Consequently, the absolute change between the two years mentioned for the 3 indicators was negative, reflecting a relative improvement in all classifications.

⁸Central Statistical Organization, Kurdistan Region Statistics Office, OPHI and others, National Multidimensional Poverty Index and Child-Adjusted Multidimensional Poverty Index Analytical Report, 2022.

Table 3: Comparison of Multidimensional Poverty Indicators 2011, 2018

indicator		2011			2018		
		MPI	Incidence (H,%)	Intensity (A,%)	MPI	Incidence (H,%)	Intensity (A,%)
Iraq		0.210	42.9	49.1	0.114	24.3	47.1
Area	Urban	0.161	34.0	47.3	0.089	19.2	46.3
	Rural	0.327	63.6	51.4	0.172	35.7	48.1
Region	Kurdistan Region	0.139	30.1	46.2	0.039	8.6	45.4
	Central/south	0.223	45.1	49.4	0.129	27.4	47.2
Governorates	Ninevah	0.236	47.4	27.7	0.131	49.7	47.3
	Kirkuk	0.211	44.2	12.9	0.060	47.8	46.3
	Diala	0.225	45.7	20.4	0.093	49.2	45.5
	Anbar	0.256	52.0	25.4	0.115	49.3	45.3
	Baghdad	0.151	32.3	21.9	0.100	46.9	45.8
	Babylon	0.204	41.7	29.1	0.140	48.9	48.0
	Kerbela	0.212	41.9	29.4	0.140	50.7	47.6
	Wasit	0.277	54.4	38.6	0.186	50.9	48.1
	Salah Al-Deen	0.236	47.4	18.3	0.083	49.9	45.6
	Najaf	0.244	49.2	33.3	0.165	49.5	49.4
	Qadisiya	0.300	56.6	29.7	0.141	53.1	47.5
	Muthanna	0.353	66.6	41.3	0.197	53.0	47.7
	Thi-Qar	0.266	52.6	30.1	0.142	50.7	47.2
	Missan	0.301	58.5	40.4	0.197	51.4	48.8
	Basrah	0.222	46.4	30.0	0.144	47.9	48.0
	Dohouk	0.167	36.6	11.2	0.050	45.5	45.1
	Sulaimaniya	0.091	20.2	7.1	0.032	45.1	44.5
	Erbil	0.171	36.1	8.6	0.039	47.3	46.0

Source: Central Statistical Organization, OPHI and others, National Multidimensional Poverty Index and Child-Adjusted Multidimensional Poverty Index Analytical Report.



2.4 HOUSEHOLD BASIC CHARACTERISTICS

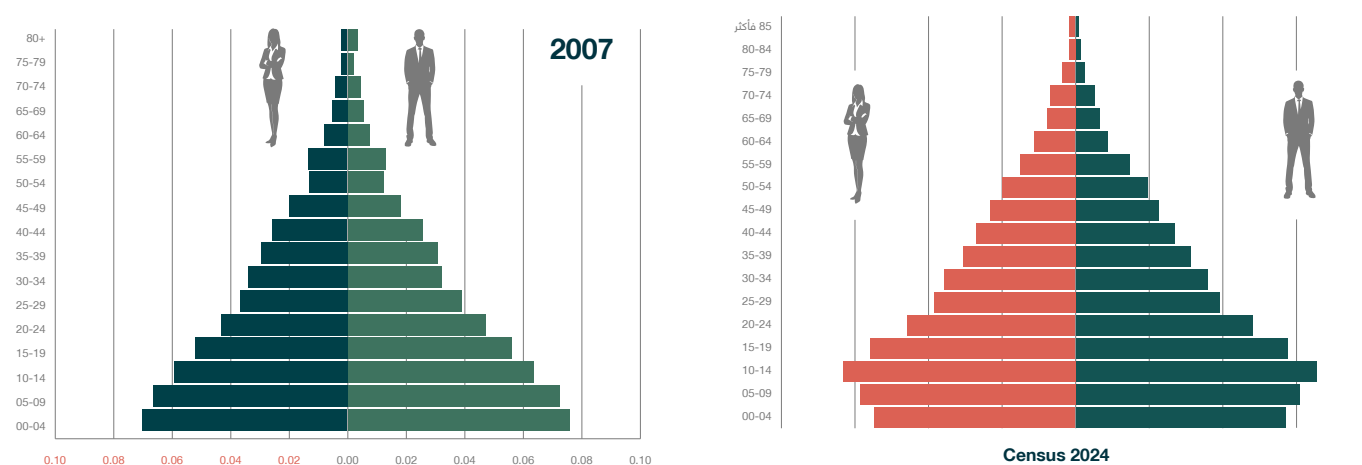
Before building the appropriate model for measuring multidimensional poverty in Iraq, it is necessary to identify some of the basic characteristics related to the Iraqi household lifestyles. The results of the IHSES 2023-2024, and 2024 Iraq Population Census results revealed the following basic characteristics:

1. Demographic Characteristics

The size of the household is still relatively large, reaching 5.9 individuals, with clear differences between urban and rural, 5.7 in urban and 6.5 in rural. The sex ratio was 50.4% males and 49.6% females. The results of the Iraq population census 2024 showed clear transition in the age structure of the population. The category of children under 10 years of age has declined for the first time in Iraq's modern history, as shown by the population pyramids for 2007 and 2024 (Figure 7).. On the other hand, Iraq has entered the context of the

demographic dividend as percentage of population in the age group (15-64) reaches more than 60%. While this demographic transition can be an opportunity to improve productivity, increase savings and investment rates, and reduce the burden of economic and life dependency, the fact that unemployment rates remain relatively high in Iraq is a major challenge that may affect the benefits of the demographic dividend if human capital is not really invested.

Figure 7: Iraq Population Pyramid 2024



Source: Commission of Statistics and Geographic Information Systems, preliminary results of the General Population Census 2024 and results of the Iraq Household Socio-Economic Survey 2007.

Dependency ratio is a measure used to assess the ratio of people who are typically not in the labor force (dependents) to those who are in the labor force. It is usually calculated as the number of dependents (children under 15 years of age and elderly people over 65 years of age) per 100 working-age individuals (those aged 15 to 64).⁹

Table 4 reflects that age dependency ratio fell to 65 for the first time in Iraq, which means that every 100 working-age people (15-64 years old), there are 65 dependents. There are also clear disparities in dependency ratio between governorates. In the three governorates of the Kurdistan Region, the age dependency ratio was the lowest among the governorates with less than 60. While it reached the highest in Maysan at 76, it is certain that the high dependency ratio has a direct impact on poverty rate.

Table 4: Age Dependency Ratio by Governorate, 2024

Governorate	Dependency ratio			Governorate	Dependency ratio		
	Urban	Rural	Urban and Rural		Urban	Rural	Urban and Rural
Ninevah	69	80	74	Qadisiya	60	73	66
Kirkuk	61	74	65	Muthanna	64	82	74
Diala	63	72	67	Thi-Qar	66	78	70
Anbar	65	72	68	Missan	73	85	76
Baghdad	60	75	62	Basrah	66	80	68
Babylon	60	71	66	Dohouk	57	66	59
Kerbela	64	72	66	Sulaimaniya	54	55	54
Wasit	63	75	68	Erbil	56	65	58
Salah Al-Deen	66	76	71	Iraq	62	74	65
Najaf	61	72	65				

Source: Commission of Statistics and Geographic Information Systems, 2024 Population Census results

2. Housing Conditions

IHSES 3 results showed that 77.6% of households live in dwellings they own and 17.2% live in rented, equipped by the employer or for free. Slums accounts for 5.2%. 29.1% of the population experience overcrowding (according to the criterion; more than three individual per sleeping room). These results showed clear disparities between governorates, 22% in Muthanna and 41% in Karbala.

⁹UN – Department of Economic and Social Affairs.

3. Economic Activity

It is well known that high rates of economic participation among the working-age population reflect the economy's efficiency in generating employment opportunities. However, the legacy of Iraq's past and the challenges of the present have produced numerous problems that have clearly impacted the effectiveness of policies and programs aimed at enhancing the efficiency of the Iraqi economy and stimulating job-generating growth.

It is noteworthy that the economically active population (aged 15 years and over) is relatively low in Iraq, estimated at 37%, of which 13.8% are unemployment (Table 5). In addition, most of the governorates have

shown a low rate of economically active population along with the relative similarity of the population age structure in the governorates, which reveals their inability to historically improve this rate (Table 6). Moreover, the women unemployment rate is currently approximated at double men unemployment rate.

On the other hand, there is a greater disparity between governorates in both the economically active population and unemployment rates. This disparity is typically associated with employment opportunities declining in governorates with high unemployment rates.

Table 5: Employment Key Indicators Based on IHESI 2023 - 2024

indicator	No. of governorates	Maximum	Minimum	Mean	Standard Deviation	Coefficient of variation (%)
Economically Active (%)	18	23.60	49.80	37.00	6.94	18.8
Unemployment rate (%)	18	4.20	23.10	13.83	5.13	37.2
Working Hours (Hour)	18	36.70	63.60	42.69	6.12	14.4

Source: Commission of Statistics and Geographic Information Systems, Results of the Iraq Household Socio-Economic Survey 2023 - 2024.

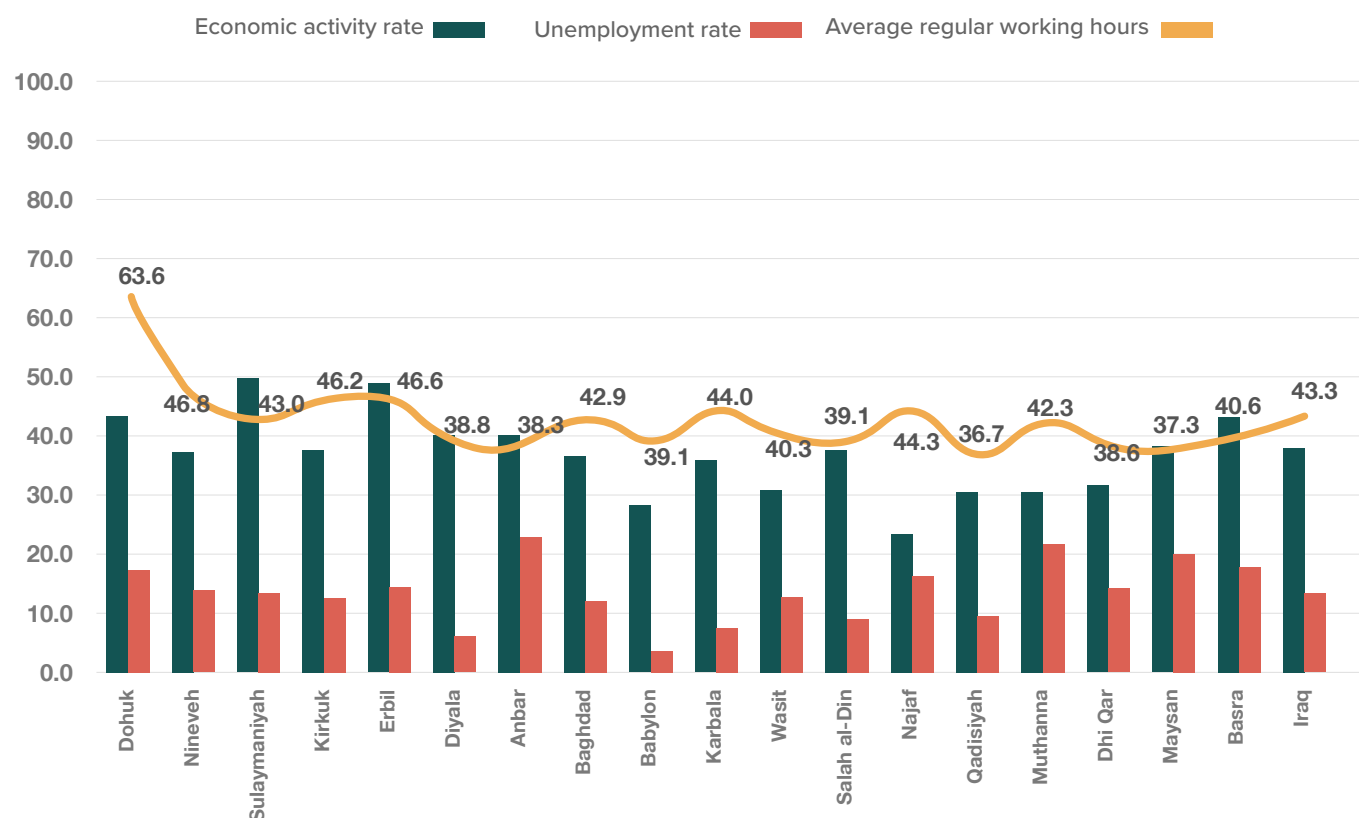
On the other hand, the working hours for individuals aged 15 years and over in the governorates are also close to the national average of 43.3 hours per week. However, this rate is less than the normal working hours specified by 48 hours per week according to the Iraqi Labor Law (Figure 8).

Table 6: Unemployment rates by governorate, 2024

Governorate	Unemployment rate	Governorate	Unemployment rate
Ninevah	14.1	Najaf	16.6
Kirkuk	12.8	Qadisiya	9.9
Diala	6.3	Muthanna	21.6
Anbar	23.1	Thi-Qar	14.2
Baghdad	12.3	Missan	20.0
Babylon	4.2	Basrah	18.0
Kerbela	7.8	Dohouk	17.5
Wasit	12.9	Sulaimaniya	13.6
Salah Al-Deen	9.4	Erbil	14.7
		Iraq	13.8

Source: CSGIS, IHSES 3, 2024

Figure 8: Economic activity rates, unemployment rates and average normal working hours for individuals aged 15 years and over by governorate.



Source: Commission of Statistics and Geographic Information Systems, results of the Iraq Household Socio-Economic Survey 2023 - 2024.

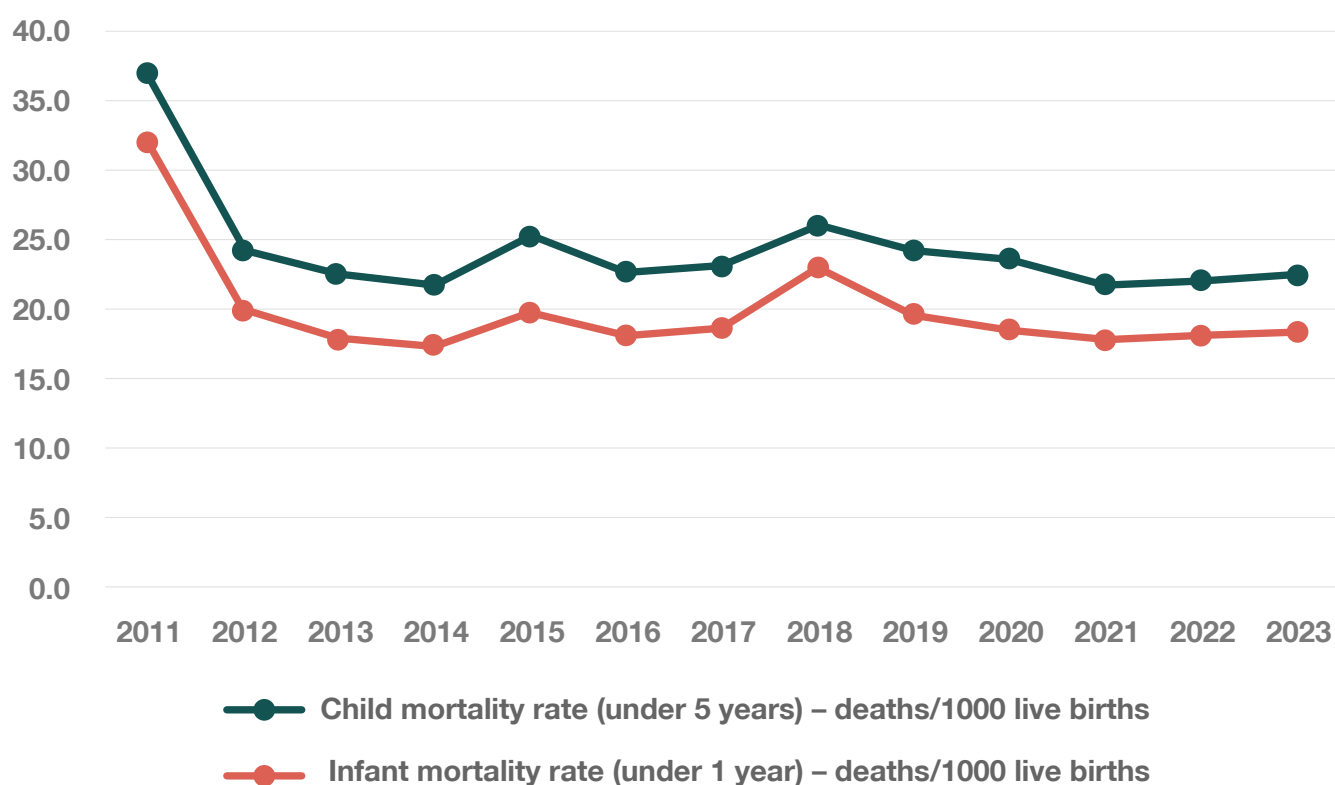
4. Living Conditions

Although households' access to electricity from the national grid is estimated at 93%, these households experience an obvious lack of stable and continuous electricity supply approaching 50% in general, which means that almost half of the population experience deprivation of the national grid supply, and depends on the private generators, which generally lack environmental protection measures. On the other hand, 83% of households have a toilet, the access to drinking water network is more than 85%. However, the availability of drinking water is still not sufficiently secured in the rural.

5. Health Condition

There has been a significant improvement in the health conditions of the population. Health status indicate that life expectancy at birth increased from 69 years in 2014 to around 74 years in 2023. Mortality rates, especially under-five and infant mortality, have declined significantly over the last fifteen years to 22 and 18 deaths per thousand live births in 2023, respectively¹⁰ as reflected in figure 9. However, health services are still facing several problems and challenges, especially the lack of such services in rural areas.

Figure 9: Infant Mortality and Under Five Years Mortality Rates for (2011 - 2023)



Source: Ministry of Health, Annual Abstract, 2023

¹⁰ Ministry of Health, Annual Abstract, 2023.

6. Educational status

Despite the tangible progress in the education sector, the illiteracy rate for individuals aged 10 years and older still accounts for 15%, this rate is double in rural areas compared to urban areas. Net enrollment rate in primary education reached 88% in 2024, although this rate is lower than the estimates recorded during the past ten years (2014-2024). Enrollment in primary school was supposed to be 100% due to the compulsory primary education law issued since the mid-seventies of the last century. However, the 12% dropout rate from primary education will have negative effects in the future and hinders the improvement in the number of years of schooling¹¹.

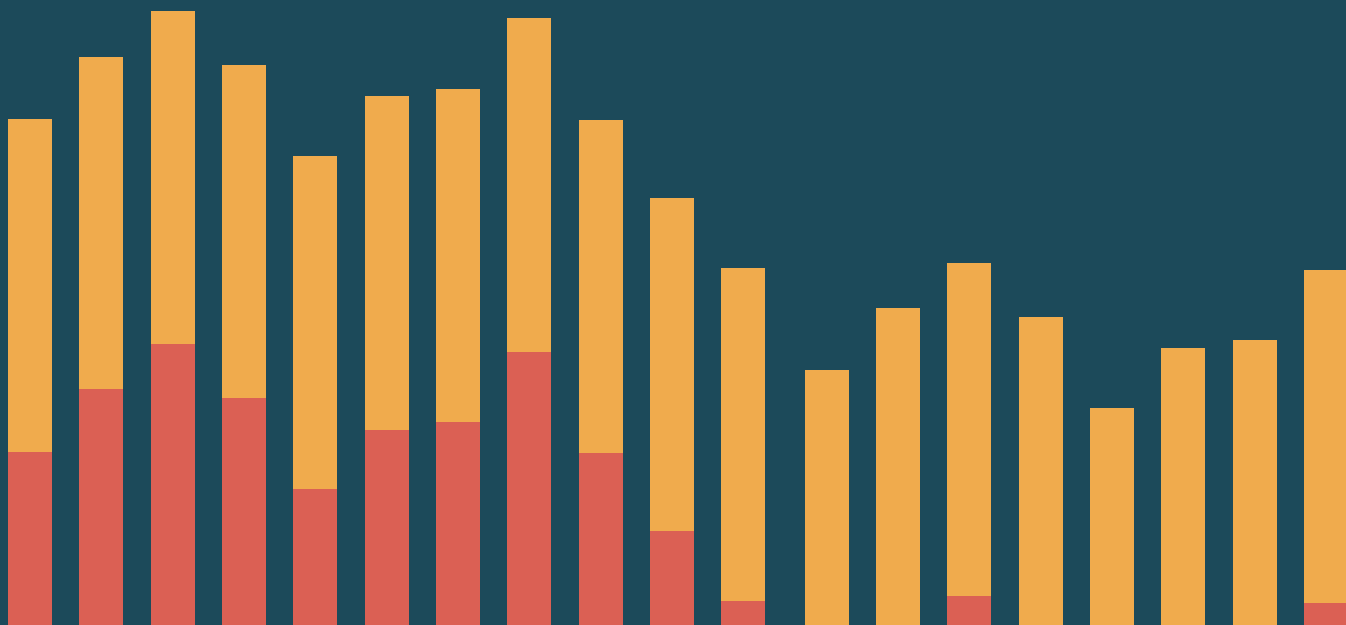
¹¹ Indicators of this paragraph are quoted from Iraq Household Socio-Economic Survey, 2023-2024.



2.5 PURPOSE OF NMPI MEASURE

The MPI for Iraq aims to:

- **Monitor the situation of poverty in the country:** In the context of the SDGs, one of the purposes of a national MPI is to monitor multidimensional poverty trends over time. The MPI could be used as a tool for monitoring and reporting on SDGs 1.2 (specifically indicator 1.2.2). MPI will be used to measure the official level of multidimensional poverty and to compare poverty across governorates, in addition to produce voluntary reports. This requires nationally adapting these dimensions in line with their social development policies, keeping in mind that future surveys include the questions needed to compute the current version of the MPI, to enable tracking the progress with the same measure structure going forward.
- **Complement income poverty indicators:** such as the consumption-based poverty measure. Through the multidimensionality of poverty, the MPI complements the traditional IP measure which provides additional briefing for many forms of poverty. Both measures are jointly used for social policy analysis and evaluation.
- **Policy coordination:** The National MPI guides coordinated actions by several ministries, provides clear goals and targets for each indicator. It is adopted as a policy monitoring and accountability tool within the government to identify the most vulnerable people and show where they are deprived. Thus, target resources and design policies will be more effectively.
- **Targeting:** The National MPI should also be used to direct the allocation of the national resources as targeting regions or subgroups is more efficient in addressing poverty in its various dimensions.
- **Resource allocation:** When designing and calculating the National MPI, the state budget is supposed to responds to the needs of the multidimensional poor or adjust it to tackle their deprivations more effectively within the same budget. The information provided by this analysis allows the federal and local governments to redistribute resources according to the needs of each region or group in order to accelerate the reduction of deprivations in the national or local MPI.



3

MPI MEASUREMENT METHODOLOGY



3.1 ALKIRE-FOSTER METHOD

The Alkire-Foster (AF) is a method of measuring multidimensional poverty developed by Sabina Alkire and James Foster (for a more detailed explanation, refer to Annex 4, Alkire and Foster, 2011), which involves computing the different types of deprivation that individuals experience at the same time, such as lack of education, poor health or inadequate living standards. This measure identifies who is poor by counting the deprivations that each person or household experiences, and then aggregates this information at the national or regional level to determine how many are poor and how many deprivations that poor individuals face. This method for multidimensional poverty measurement has come to be widely used because of its simple, yet specific approach.

There are three key features for a multidimensional poverty measure based on the Alkire-Foster method:

- **Headcount ratio (H) or incidence of multidimensional poverty:** the percentage of the population who are multidimensionally poor.
- **Deprivation Intensity (A):** the average share of weighted indicators in which multidimensionally poor people are deprived.
- **MPI or adjusted headcount ratio:** the product of the multiplication between the incidence and the intensity of multidimensional poverty

$$(MPI = H \times A)$$

The MPI can be computed as a weighted sum of censored headcount ratios – which in turn shows the percentage of people who are identified as poor and are also deprived in a specific indicator. The poverty index is expressed in terms of the dimensions' indicators to show the composition of multidimensional poverty. This feature of dimensional detail in the analysis brings added policy relevance to the analysis. In addition, the MPI can be disaggregated by different population groups, such as, urban/rural areas, age groups, and subnational regions.

3.2 DATA SOURCE

Although Iraq has a long history in conducting living conditions surveys that extend back to 1936 and continued with regular periodicity in the last quarter of the previous century, the biggest shift was in the implementation of the Iraq Household socio-economic survey with three rounds starting in 2007 and then in 2012. IHSES 3 for 2023-2024 is the most recent survey, as the Commission of Statistics and Geographic Information Systems (CSGIS) and the Kurdistan Region Statistics Office (KRSO), with the support of the World Bank, started working on it in mid-2023 and continued for twelve months to provide data that can be used in updating poverty indicators, and providing data on social, economic and health indicators, as well as other data and indicators that help in developing plans and policies.

The survey sample was designed with a size of 24,500 households. Stratified random sample method was adopted to provide detailed indicators at the level of Iraq's eighteen governorates and

other overall indicators at the level of the 171 districts. In general, the level of the survey representation is at governorate, for some specific indicators, the level of representation is added district. The response rate was 90%, thereby, the data of around 22,000 households was fully collected (see Annex 1). The survey was not limited to the main sections previously presented but extended to include other sections such as household shocks and life satisfaction. One of the most important survey outputs was providing data on time use, which constitutes an important addition in NMPI and Woman MPI building and measurement.

The use of Iraq Household Socio-Economic Household Survey results has been expanded since 2007 towards producing two National Poverty Reduction strategies in 2010 and 2018. Work is underway to prepare the third strategy based on the results of the recent survey and the IP measurement and multidimensional poverty results.

3.3 UNIT OF IDENTIFICATION AND ANALYSIS

The unit of identification refers to the level at which deprivation (usually an individual or household) is measured and identified as poor or non-poor. The Iraq National MPI uses the household as a unit of identification. Therefore, it is assumed that all household members are equally affected by deprivations or achievements of other members. For example, in the case a school age child is not attending to school, all household members will be deprived in the school attendance indicator.

In addition, the Iraq National MPI uses the individual as a unit of analysis. This means that the findings presented in this report are based on the number of individuals in Iraq rather than the number of households.

3.4 DIMENSIONS, INDICATORS AND DEPRIVATION CUT-OFFS

The NDP 2024-2028 emphasized, among its general goals on reducing poverty and unemployment rates, developing youth capacities, improving human and social development indicators, and enhancing investment in human capital¹². As the Government of Iraq moves to launch the Third Poverty Reduction Strategy, one of the goals of building a new MPI is to help following up progress in reducing poverty in its main dimensions.

Extensive discussions were held to identify the dimensions that can be included in building the aforementioned model, where the relevant authorities in the MOP, the CSGIS and KRSO, with the cooperation and support of UNDP, held a series of discussion workshops and specialized seminars.

The steering committee of poverty reduction strategy organized a number of meetings for these reasons. The preparation was not limited to the government effort only, an extensive discussion workshop was held in which several civil society organizations and non-governmental organizations participated to finalize the most important dimensions for building a national poverty index. These workshops resulted in a set of proposed dimensions as shown in figure 10.

¹² Ministry of Planning, National Development Plan 2024-2028, Page 30

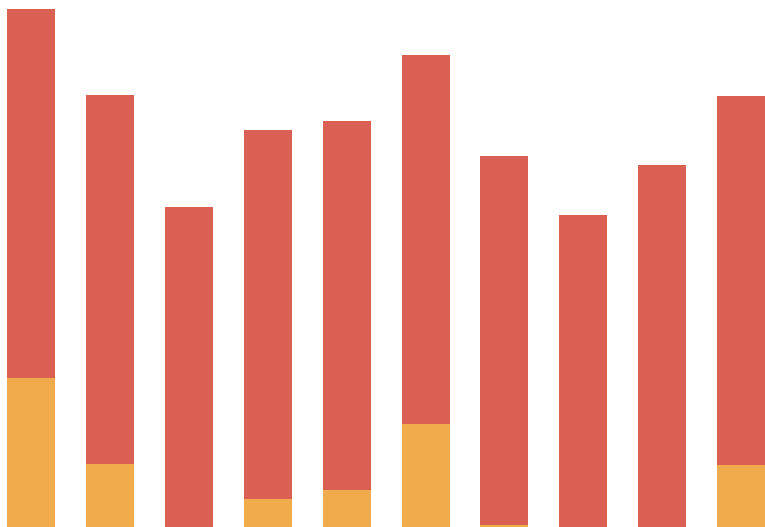
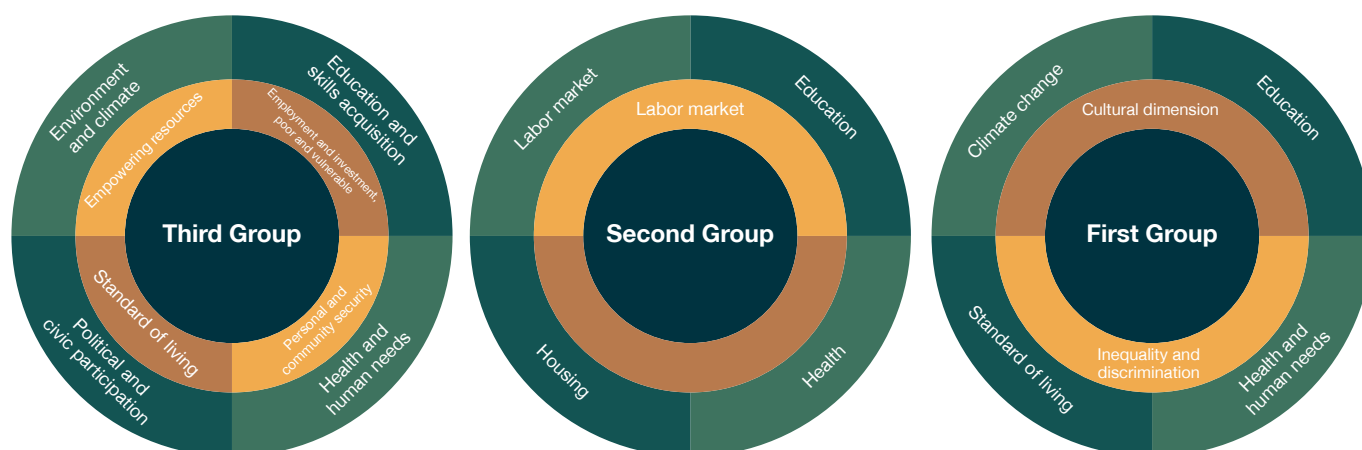


Figure 10: Dimensions Proposed by the Discussion Workshops groups



However, what limits the expansion of the index dimensions and indicators is the availability of sufficient data, especially with the approach adopted in computing the index at governorate level and other basic classifications of Iraqi community. Given that the AF method counts the deprivations for individuals and households, it is necessary to use only one source of information. Details of the household characteristics of Iraq Socio-Economic Household Survey (IHSES, 2024) allowed for adding two new dimensions to the three dimensions of the global MPI. These two dimensions are employment status and household shocks, which enhances the benefit of the indicators of these two dimensions.

Accordingly, five dimensions of Iraq MPI have been formulated in 2024, namely education, health, living conditions, employment, and shocks. The first dimension “education” is made up of three indicators, the first indicator is related to the level of school attendance to express the interest in the educational upbringing of children within the age group (6-17) years, where deprivation is measured in terms of the percentage of households with a child who did not attend school at all. The second indicator is related to the number of years of schooling per individual aged 15 years and over which are sufficient to ensure an acceptable level of education. A household is deprived if a member does not

complete at least 9 academic years, which usually represent the basic stage (primary and intermediate). Access to internet is the third indicator in the education dimension, where a household is deprived when the Internet is not available at the dwelling.

As for the second dimension “health”, three indicators were also selected, the first is the child nutrition, which is usually measured by the proportionality of three basic elements: child’s height, weight and age through the main aspects of malnutrition; stunting, wasting and malnutrition¹³. Deprivation is measured in terms of the proportion of children (under five years) who suffer from stunting when their height against age is more than two standard deviations below the median (moderate and severe). Children who suffer from wasting when their weight against age is more than two standard deviations below the median (moderate and severe). Children who also suffer from malnutrition when their weight against height is more than two standard deviations below the median (moderate and severe). Indicator of early marriage for women was adopted as a second indicator in health dimension, as a woman is deprived if she marries before turning 18 years. The third indicator is the food strategy associated with household’s use of any of the measures to deal with food shortage, as a household is deprived when adopting one or more of these measures three times or more a week.

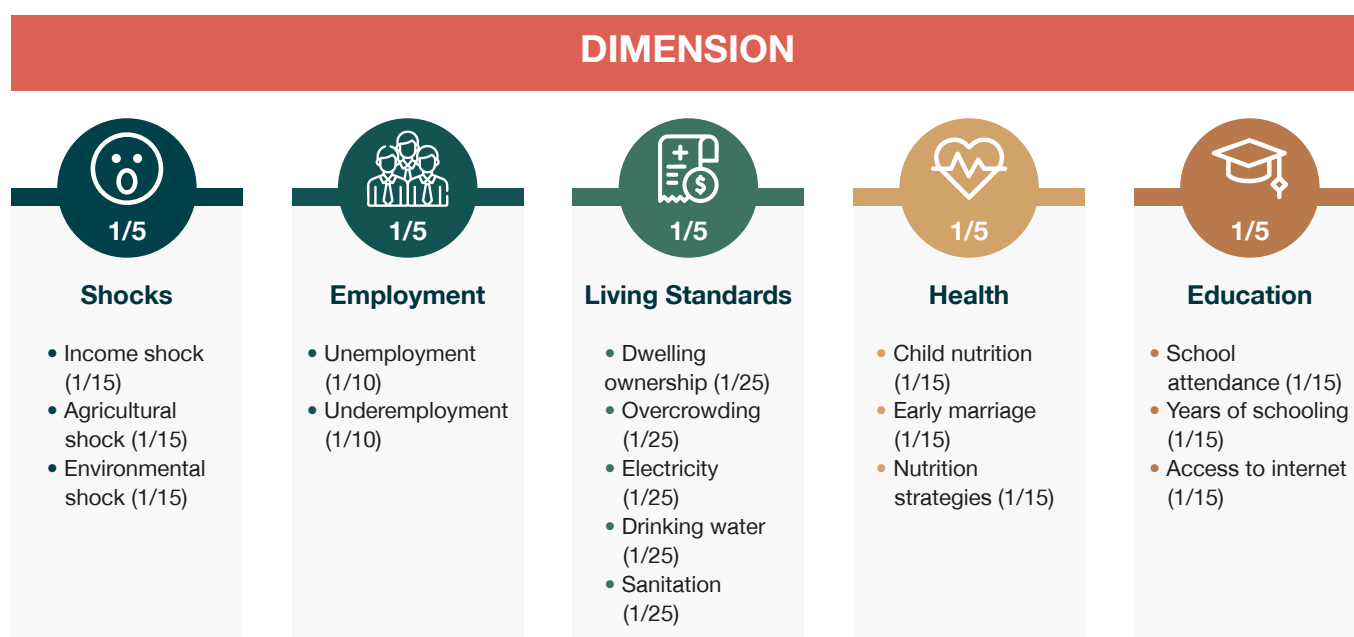
¹³ United Nations, WHO criteria on malnutrition indicator.

“Living conditions” constitutes the third dimension, it is composed of five indicators; the indicator of dwelling ownership, where a household is deprived if one of its members does not own a dwelling. Indicator of overcrowding, where a household is deprived if it has more than 3 individuals per sleeping room. Indicator of electricity, in which the household deprivation is associated with the lack of access to electricity or the supply hours is less than 12 hours per day. As for the indicator of drinking water, a household is deprived if the drinking water source is not improved, it takes more than 30 minutes or more round trip to collect the water, or the amount of water is not sufficient in the past 30 days. Regarding the indicator of sanitation, household is deprived if the sanitary facility is not flowing into the pipe system or septic tank or is shared with other households.

Fourth dimension “employment” is made up of two indicators: unemployment, where a household is deprived if at least half of its economically active members are unemployed, and underemployment, where a household is deprived if an individual aged 15 years and over is working less than 48 hours a week and ready to work more.

The fifth and last dimension is “shocks”, this dimension includes three indicators; income shock, where a household is deprived if it experiences one of the following shocks during the past 12 months (loss of job, reducing working hours, non-payment or delay to pay wages, stop or reducing remittances, death of the household head, death of other household individuals, serious injury or illness experienced by the household head, injury or serious illness experienced by other household individuals) and its impact on the household income and property was strong or the worst of all. As for the agricultural shock indicator, a household deprived if it experiences (loss of property or livestock, an unusual epidemic affects livestock, poor quality of the agricultural water, spread of pests and diseases in crops, crop fire) and its impact on household income and property was strong or worst of all. The third indicator in the shock dimension is environmental shock, where a household is deprived if it experiences drought or natural disasters and its impact on the household income and property is strong or the worst of all (Figure 11).

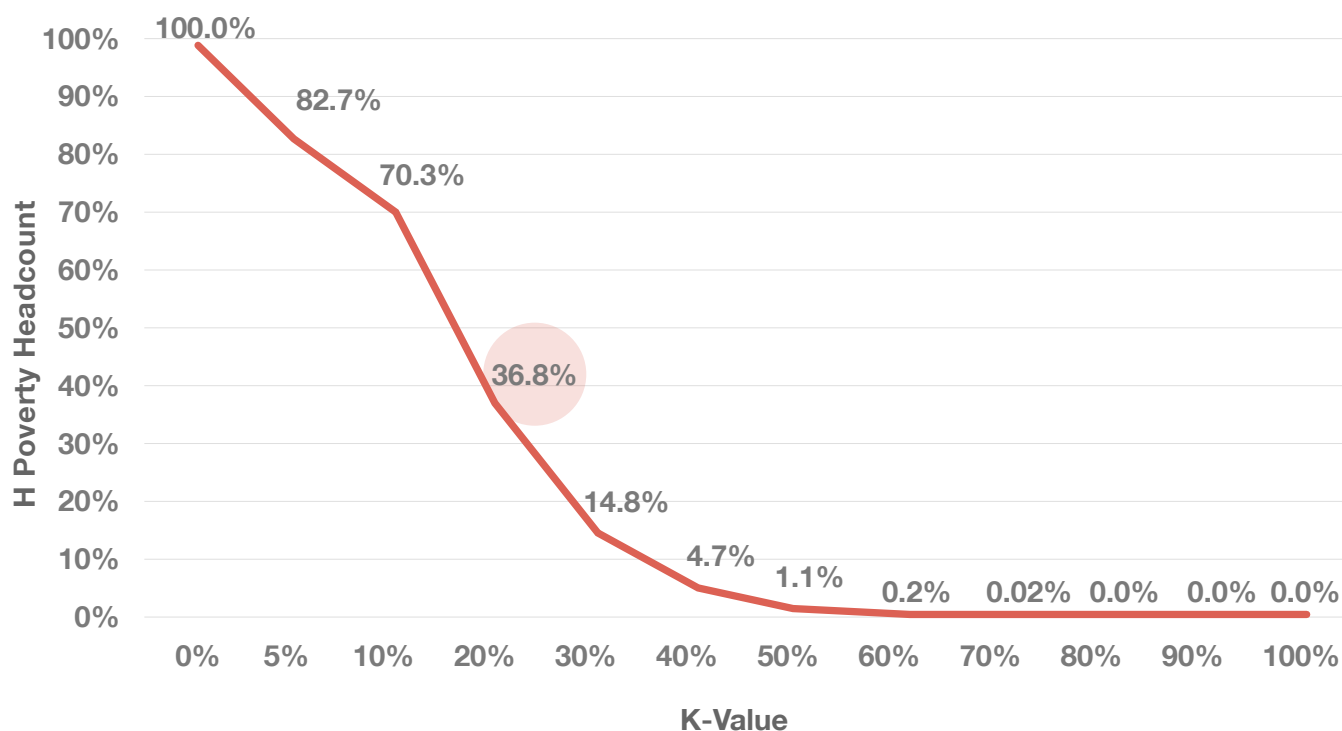
Figure 11: Dimensions, Indicators and Their Weights



3.5 WEIGHTS AND POVERTY CUT-OFFS

Based on the methodology used by OPHI/UNDP for the global MPI, each dimension has the same weight, and indicators within each dimension are weighted using equal weights as well. The importance of each indicator is inversely proportional to the number of a dimension's indicators. Therefore, the deprivation score is the sum of weights of the indicators in which the person is deprived, and the total percentage shows the total potential weighted deprivation the individual experiences. Based on the deprivation score, a person is multidimensionally poor if the score is not less than a certain level, and this level, called "poverty cut-off", is usually supposed to cover at least one dimension. With the MPI adoption of five dimensions, equal weights were given to each of the five dimensions (Table 7), i.e., each dimension represents 20% of the deprivation measure. as presented in figure 11. The level of deprivation of 20% means that the individual is deprived in at least one of the five dimensions. This ratio is the threshold between the poor and non-poor, noting that the selection of the K value equal to 20% indicated on the curve figure 12 was actually linked to the occurrence of concavity, which makes this value the most appropriate for determining the deprivation cutoff.

Figure 12: Headcount Ratio by Deprivation Cut-offs (%)



Prepared by the report team

Table 7: Multidimensional Poverty Index in Iraq - Dimensions, Indicators, Weights and Deprivation Cut-offs

Dimension	Indicator	Deprivation Cutoff: A household is deprived if...
 Education 20%	• School attendance • Years of schooling • Access to internet	Any school-aged child (6–17) in the household is not attending school No household member aged 15 and older has completed nine years of schooling The household does not have access to the internet at home
 Health 20%	• Child Nutrition • Early Marriage • Nutrition Strategies	Any child under the age of 5 in the household is suffering from underweight, stunting, or wasting (moderate or severe) Any female in the household has married before turning 18 The household used the strategy of (borrowing food or asking assistance from relatives and friends or reducing the number of daily meals or consuming less food in meals) at least three times or more week , and the household used the strategy of (selling household properties (e.g., refrigerator, television, jewelry or buying food on credit or through borrowed money from relatives and friends or selling means of transport (e.g., car, motorbike)) or reducing expenditure on non-food items (e.g., health, education) or attending banquets held on religious and social events to have food or beg) for the answer 1 Yes or 2 No, already exhausted the
 Living Standards 20%	• Dwelling Ownership • Overcrowding • Electricity • Drinking Water • Sanitation	A member of the household does not own the dwelling The household has more than three members per sleeping room The public grid is the only source for electricity in the dwelling and power supply is less than 12 hours / day The source of drinking water for the household is unimproved (unprotected well or spring, surface water from river, dam or lake, or other) or it takes 30 minutes or more round trip to collect the water or in the last month the household did not have sufficient quantities of water The sanitation facility is not flush to piped system or septic tank, or it is shared with other households
 Employment 20%	• Unemployment • Underemployment	50% of a member of the household or more (15 and over) who are economically active are unemployed A member 15 or older works, but is available for more hours.
 Shocks 20%	• Income Shock • Agricultural Shock • Environmental Shock	If the household has experienced in the past 12 months (job loss, reduction in working hours, non-payment or late payment of wages, cessation or reduction of remittances, death of the breadwinner, death of other household members, serious injury or illness of the household breadwinner, serious injury or illness of other household members) and its impact on the household's income and assets was severe or the worst that has ever happened If the household suffers from (loss of property or income, unusual livestock epidemic, poor quality of agricultural water, spread of pests and diseases in crops, outbreak of crop fire) and its impact on the household's income and property is severe or the worst that has ever happened. If the household has suffered from any natural disaster and its impact on the household's income and property has been severe or the worst that has ever happened.

3.6 LEVELS OF DEPRIVATION

The uncensored headcount ratio of each indicator is defined as the proportion of the total population deprived in the indicator, regardless of their poverty status. Table 8 shows that 32.5% of the population lives in a household where 3 or more members share a sleeping room, also 27.3% in a household without internet and 26.1% of the population in Iraq live in a household where at least one school age child does not attend school. On the other hand, the indicators with the lowest percentage of population deprived were agriculture and environmental shocks, with less than 5% of the population deprived in these indicators.

Table 8: National Uncensored Headcount Ratio

Dimension	Indicator	Proportion of population deprived	Confidence Interval (95%)	
			Minimum	Maximum
Education	School attendance	26,1	24,4	27,9
	Years of schooling	31,5	29,9	33,0
	Access to Internet	27,3	25,6	29,0
Health	Child nutrition	20,5	19,2	21,8
	Early marriage	25,7	24,1	27,3
	Strategy response	25,3	23,6	26,9
Living standards	Housing ownership	20,6	19,1	22,0
	overcrowding	32,5	30,8	34,1
	Electricity	4,7	4,0	5,4
	Drinking water	27,8	25,5	30,0
	sanitation	8,0	6,7	9,3
Employment	Unemployment	11,9	10,8	13,0
	Underemployment	4,4	3,8	5,0
Shocks	Income shock	6,3	5,4	7,2
	Agricultural shock	2,9	2,0	3,8
	Environmental shock	3,0	2,1	3,9

Prepared by the report team.

The censored headcount ratio is the percentage of people who are both deprived in a specific indicator or dimension and identified as multidimensionally poor overall, excluding those who are deprived but do not meet the poverty threshold. Table 9 indicates that the proportion of population who are poor and deprived in the dimension of education, are one out of every five individuals, while in the dimension of health, approximately one out of every seven individuals are deprived in any of the three Health indicators and multidimensionally poor.

Table 9: National Censored Headcount Ratio

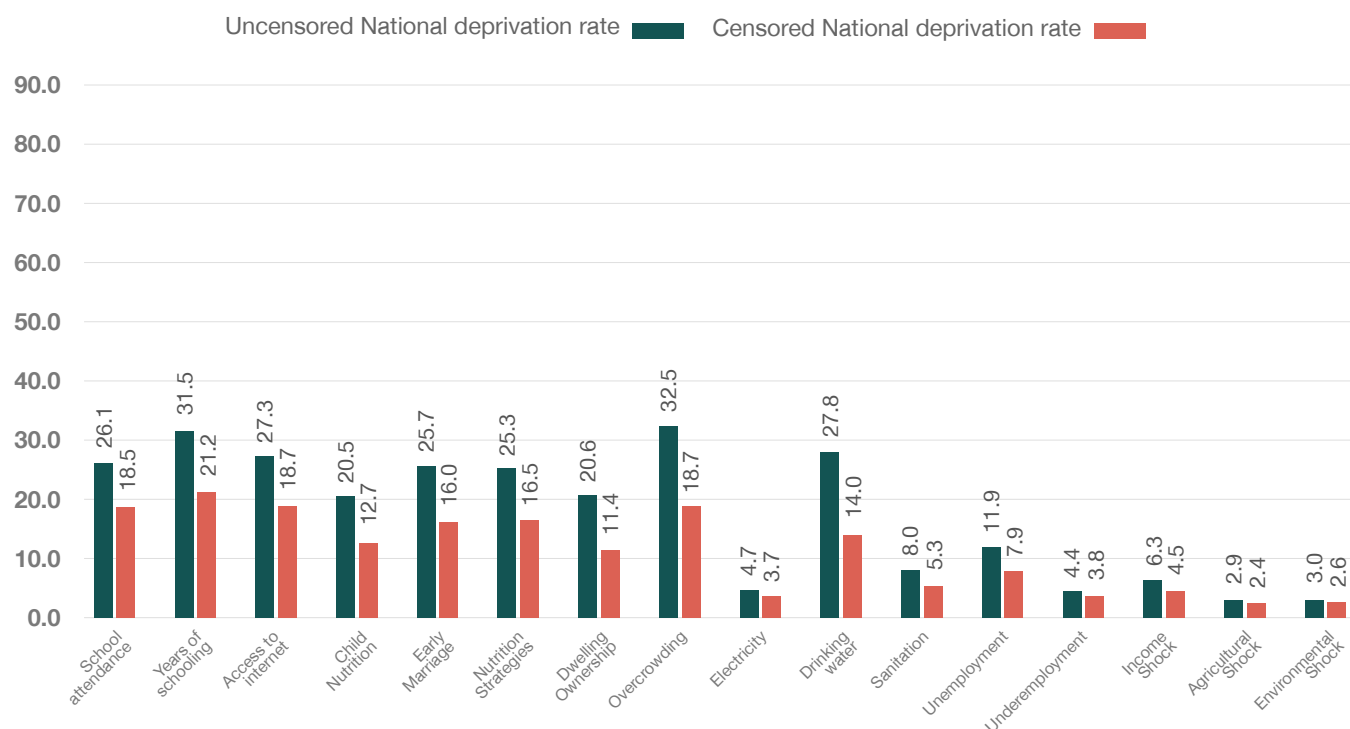
Dimension	Indicator	Proportion of population poor and deprived	Confidence Interval (95%)	
			Minimum	Maximum
Education	School attendance	18.5	17.2	19.9
	Years of schooling	21.2	19.8	22.6
	Access to Internet	18.7	17.3	20.1
Health	Child nutrition	12.7	11.5	13.8
	Early marriage	16.0	14.7	17.3
	Strategy response	16.5	15.2	17.7
Living standards	Housing ownership	11.4	10.4	12.5
	overcrowding	18.7	17.3	20.1
	Electricity	3.7	3.0	4.3
	Drinking water	14.0	12.6	15.4
	sanitation	5.3	4.5	6.2
Employment	Unemployment	7.9	7.1	8.7
	Underemployment	3.8	3.2	4.3
Shocks	Income shock	4.5	3.9	5.1
	Agricultural shock	2.4	1.8	3.1
	Environmental shock	2.6	1.9	3.2

Prepared by the report team.

The censored headcount ratios give a sense of the scale of deprivation at national level. Figure 13 reflects that one out of five people (21.2%) are multidimensionally poor and are deprived of years of schooling (9 years).



Figure 13: National Uncensored and Censored Headcount Ratios



Prepared by the report team.

3.7 REDUNDANCY OF INDICATORS

A redundancy of indicators refers to a situation in a multidimensional poverty measure (like the MPI) where multiple indicators capture overlapping information, meaning they essentially measure the same or very similar aspects of deprivation. A redundancy of indicators has been calculated by using OPHI measures of overlap¹⁴, P , which provides clear and accurate information for indicator selection. It is usually calculated for each pair of indicators. The P value varies between zero and one: zero means that no deprivation observation in one indicator is also found in other; and one means that all people deprived in one indicator are also deprived in the other. If P value is greater than or equal to 0.9, it is suggested to assess the reasons why this high overlap is observed. It is important to highlight that

indicator with high levels of deprivation will present high levels of P value, not because the indicator is measuring the same concept, but because all people who are deprived in this indicator are also deprived in other indicators.

Table 10 indicates that no interaction of incidence between the sixteen indicators shows a redundancy higher than 0.8, which means that although we are capturing deprivations that are presented simultaneously, indicators are capturing different concepts and aspects of poverty. The maximum value of P , 0.688 (Access to internet – Electricity) and the most of combination of indicators present levels of redundancy lower than 0.5 showing that indicators are not redundant.

¹⁴ See Annex 5

Table 10: P – Redundancy values for the Indicators of National MPI

Indicators	School attendance	Years of schooling	Access to internet	Child nutrition	Early Marriage	Nutrition Strategies	Dwelling Ownership	Overcrowding	Electricity	Drinking water	Sanitation	Unemployment	Underemployment	Income Shock	Agricultural Shock	Environmental Shock
School attendance	1	0.495	0.377	0.254	0.329	0.281	0.251	0.449	0.357	0.316	0.323	0.263	0.282	0.353	0.340	0.196
Years of schooling		1	0.541	0.457	0.401	0.409	0.433	0.401	0.592	0.378	0.512	0.275	0.392	0.460	0.431	0.322
Access to internet			1	0.301	0.287	0.405	0.356	0.380	0.688	0.340	0.467	0.276	0.320	0.445	0.471	0.398
Child nutrition				1	0.311	0.276	0.232	0.312	0.208	0.305	0.188	0.122	0.200	0.224	0.191	0.121
Early Marriage					1	0.264	0.262	0.337	0.236	0.262	0.252	0.239	0.322	0.304	0.283	0.196
Nutrition Strategies						1	0.287	0.341	0.319	0.354	0.287	0.306	0.445	0.418	0.368	0.524
Dwelling Ownership							1	0.267	0.263	0.256	0.284	0.262	0.325	0.190	0.181	0.272
Overcrowding								1	0.367	0.305	0.320	0.263	0.320	0.421	0.358	0.266
Electricity									1	0.394	0.093	0.128	0.052	0.105	0.116	0.054
Drinking water										1	0.448	0.236	0.254	0.621	0.511	0.315
Sanitation											1	0.099	0.075	0.339	0.250	0.082
Unemployment												1	0.181	0.339	0.250	0.082
Underemployment													1	0.055	0.037	0.161
Income Shock														1	0.454	0.124
Agricultural Shock															1	0.127
Environmental Shock																1

Prepared by the report team.

4

RESULTS ANALYSIS

This section presents the results of the incidence (H,%) and intensity (A,%) and the MPI for Iraq. The detailed results are then disaggregated by area of residence, geographic areas (Kurdistan Region, central and southern governorates), household size, educational level of household head, and household wealth quintiles.



4.1 NATIONAL MPI

Table 11 shows that 36.8% of people in Iraq are multidimensionally poor—meaning they are deprived in at least one-third of the weighted indicators—and that, on average, these people experience deprivations in 29.4% of all possible indicators, reflecting the intensity of their poverty. Based on the MPI computation formula, which is the product of both incidence and intensity of deprivation, the index is definitely affected by the two values mentioned. The value of National MPI was 0.108, which means that poor individuals experience 10.8% of the total possible deprivations, if all individuals were deprived in all indicators and were multidimensionally poor. MPI reduction policies should take this into account both in reducing both incidence and intensity.

Table 11: Incidence, Intensity and MPI

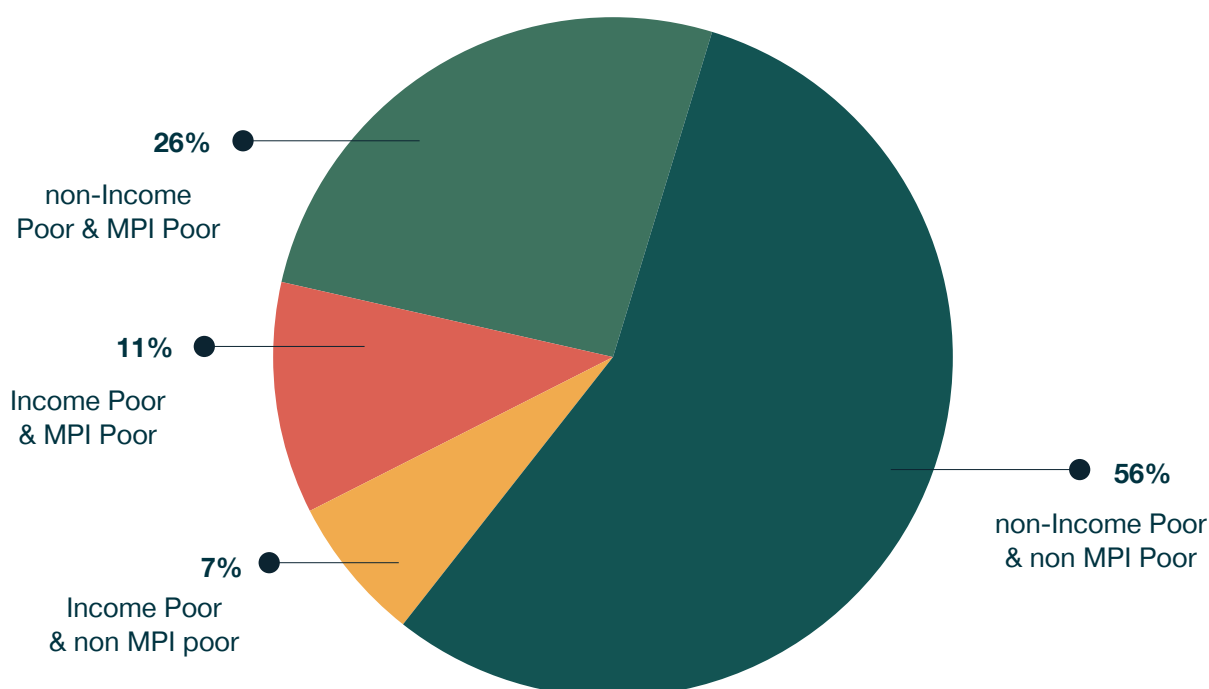
indicator	Value	Confidence interval (95%)	
		Minimum	Maximum
MPI	0.108	0.10	0.11
Incidence (H,%)	36.8	34.9	38.6
Intensity (A,%)	29.4	29.0	29.9

Prepared by the report team.

Using the IHSES-3 data file, an individual's IP was diagnosed by the WB and CSGIS. Each individual's record, whether income poor or not, was compared with the data file for the same individuals regarding multidimensional poverty. An individual may be both income and multidimensionally poor, or they may be income poor but not multidimensionally poor. Conversely, an individual may not be income poor but multidimensionally poor, or they may be neither income nor multidimensionally poor.

A direct comparison between IP and multidimensional poverty reveals a clear compatibility between the two types. Figure 14 indicates that 56% of individuals have neither experienced income nor multidimensional poverty and 11% experience both, (which means that classifying 67% of individuals is identical for both measure). Going back to the IP rate in Iraq of 17.5, the difference between it and the MPI of 11% is attributed (as shown in Figure 14) to the fact that some deprivations, such as education, health and services that are part of multidimensional poverty, are covered by the free services provided by the state.

Figure 14: Proportional Distribution of Poor and Non-poor by Income Poverty and Multidimensional Poverty Criteria



Prepared by the report team

Identifying the level of multidimensional poverty and diagnosing high levels of deprivation is a proactive step to address poverty in its various dimensions and adopting policies that target these levels of deprivation, especially with the ability to break down the MPI to other levels besides national level.

4.2 MULTIDIMENSIONAL POVERTY BY AREA

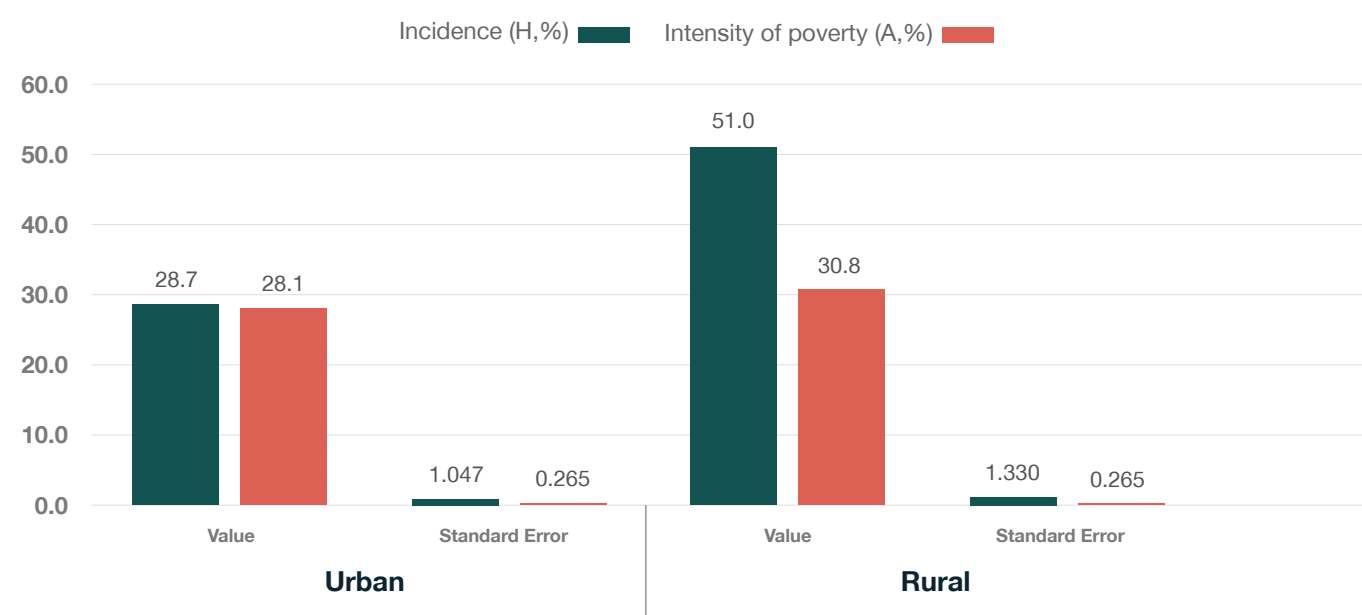
Comparing poverty levels across urban and rural areas in Iraq is essential since lifestyles are different, especially those related to infrastructure and basic services, and the pattern and level of household spending on goods and services. Poverty rate – both income and multidimensional – clearly remained higher in the rural areas. The rate of IP in rural was 30% compared to 14% in urban areas, table 12 shows that

MPI in rural areas is twice than that in urban areas (0.157 and 0.080) respectively, the same goes for the difference in IP rate. This is due to a considerable increase in the multidimensionally poor in rural which is close to twice than in urban areas 51.0% and 28.7% respectively. The intensity of deprivation is significantly higher in rural areas (30.8%) compared to urban areas (28.1%) as shown in figure 15.

Table 12: Incidence, Intensity and MPI by area (urban, rural)

Indicator	Urban			Rural		
	Value	Confidence interval (95%)		Value	Confidence interval (95%)	
		Minimum	Maximum		Minimum	Maximum
MPI	0.080	0.074	0.087	0.157	0.148	0.167
Incidence (H,%)	28.7	26.6	30.7	51.0	48.4	53.6
Intensity (A,%)	28.1	27.5	28.6	30.8	30.1	31.5

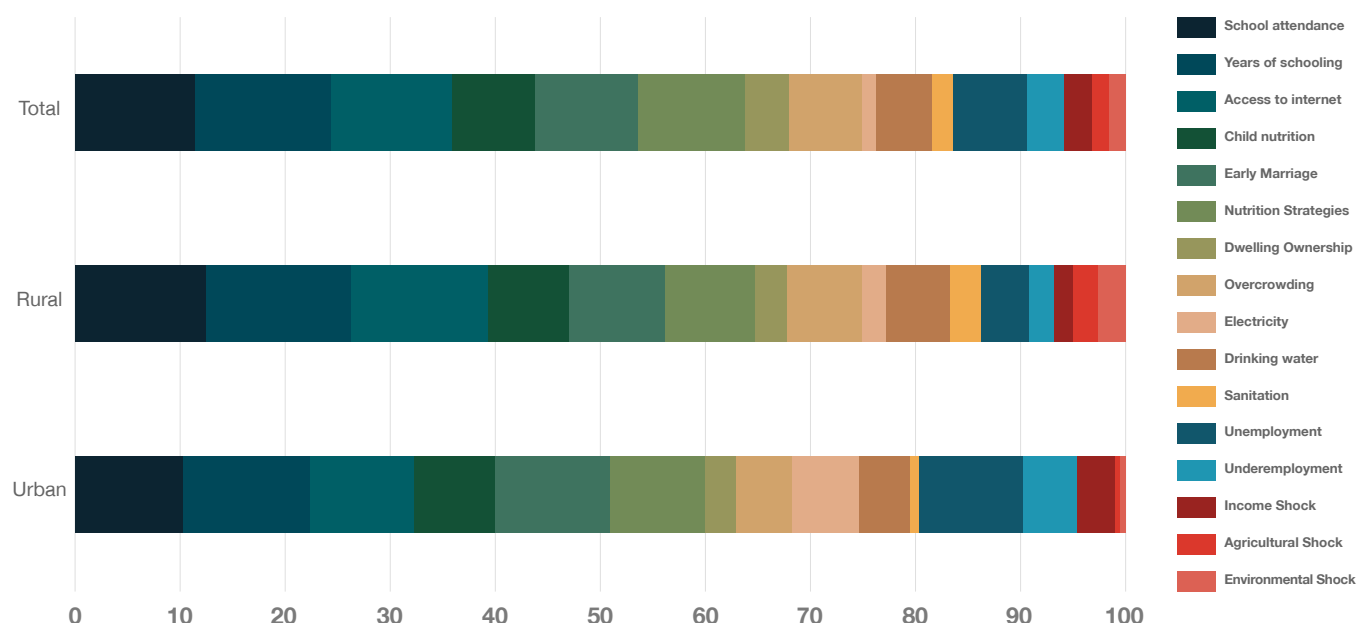
Prepared by the report team

Figure 15: Incidence (H, %) and Intensity of multidimensional poverty (A, %)

Prepared by the report team

Figure 16 shows a relative similarity in the pattern of contribution of each indicator to the MPI by area, although the contributions of deprivation to the indicators of both the education and basic services dimensions are more pronounced in rural than in urban areas, while the indicators of deprivation in the employment dimension are lower in rural compared to urban areas. As for the contribution of household shocks to overall deprivation, it is higher in rural areas. Since the proportion of the rural population constitutes 30% of the total population of Iraq, the percentage contribution to the total Iraq is closer to the urban percentage contribution.

Figure 16: Percentage contribution to each indicator to the MPI by area



Prepared by the report team

The population age structure also still has a clear disparity between urban and rural, as shown in table 13. While the population group (0-14) years is still close to 40% in rural areas, i.e, 4 out of every ten individuals are children, the proportion of population in the age group (15-64) in urban areas reached about 62%, indicating that the population in urban areas entered the demographic dividend before the population of rural areas did, due mainly to the total fertility rate differences between urban and rural. The high proportion of the population in this age group in urban areas provides a demographic opportunity to invest in the increase in the labour force and reduce high dependency ratios that are directly proportional to the increasing poverty rates.

Table 13: Proportional Distribution of Iraq Population by Age Groups for 2024 in rural and urban areas

Age group	Urban (%)	Rural (%)	Urban and rural (%)
0 -14 years	34.2	39.8	35.9
15 –64 years	61.8	57.3	60.4
65 and over	4.0	2.8	3.7
Total	100.0	100.0	100.0

Source: Commission of Statistics and Geographic Information Systems, Results of Population Census 2024

4.3 MULTIDIMENSIONAL POVERTY BY REGION

The political circumstances experienced by Iraq in the early nineties of the last century led to major transformations. Kurdistan Region (north of Iraq) has a different administrative status, it is separated from the previous regime which resulted in significant social and economic implications. After 2003 and the promulgation of the Constitution of the Republic of Iraq in 2005, Kurdistan became a region, enjoys the rights stated in the Constitution. Multidimensional poverty indicators were calculated at KR level on the one hand, and the level of the rest of the governorates in central and southern Iraq on the other hand. The deterioration of the economic situation in Kurdistan region

due the failure to decide some important issues with the federal government caused a decline in its development situations in 2024 (Annex 3).

Although there are differences in the levels of multidimensional poverty between the Kurdistan Region and the Central and Southern region of the country (38.7 vs. 36.4 %) these differences are not significant. However, significant differences were found between the intensity of multidimensional poverty in Kurdistan in comparison with other regions of the country, but these differences are not significant too (Table 14).

Table 14: Multidimensional Poverty by Region

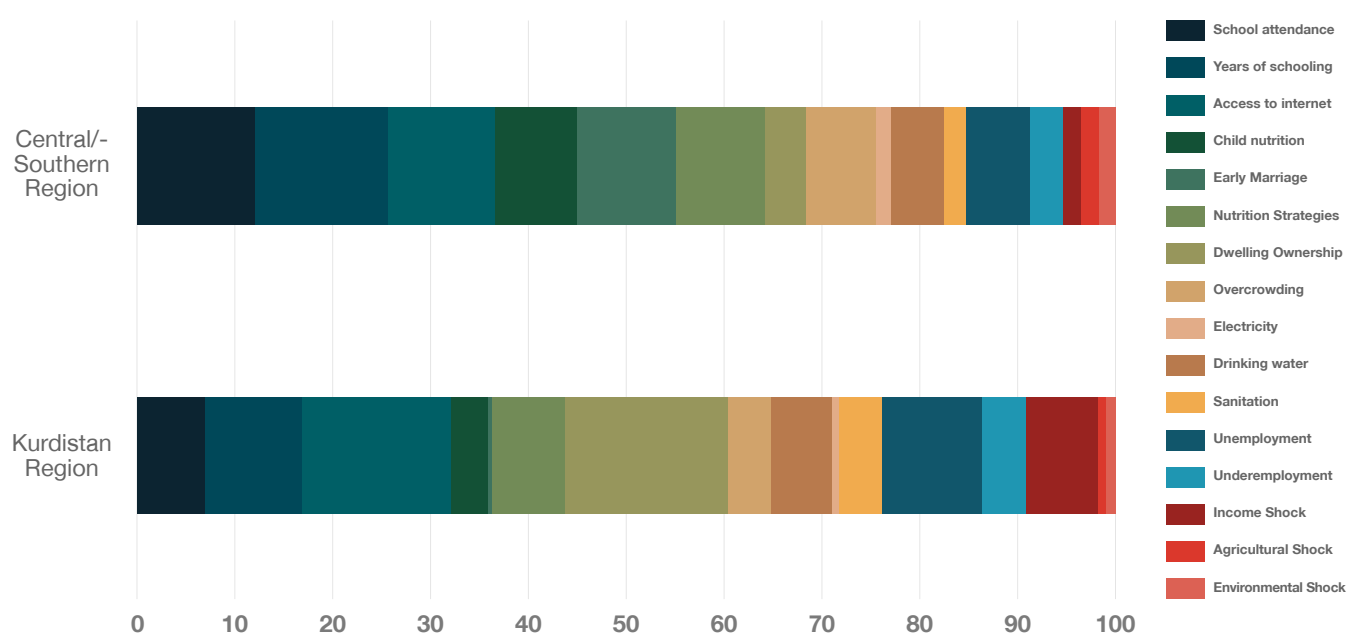
Indicator	Kurdistan Region			Central/southern Iraq		
	Value	Confidence interval (95%)		Value	Confidence interval (95%)	
		Minimum	Maximum		Minimum	Maximum
MPI	0.106	0.097	0.116	0.108	0.102	0.115
Incidence (H,%)	38.7	35.6	41.8	36.4	34.3	38.5
Intensity (A,%)	27.5	26.8	28.2	29.8	29.3	30.3

Prepared by the report team

The contribution of each indicator to the multidimensional poverty in the Kurdistan Region and central/southern Iraq, which is presented in figure 17, can be concluded as follows:

- The contribution of school attendance and years of schooling are higher in central/southern Iraq than in the Kurdistan region.
- The contribution of deprivation of access to the Internet is higher in the Kurdistan Region than the rest of Iraq.
- The contribution of child nutrition deprivation is higher in central/southern Iraq, but the contribution of household shocks is higher in the Kurdistan Region.
- The contribution of the early marriage indicator for women is slightly lower in the Kurdistan Region than in central/southern Iraq.
- The contribution of the strategy to address food shortages indicator is higher in the Kurdistan region.
- The relative importance of deprivation in the dwelling ownership in the Kurdistan Region is lower than the rest of Iraq.
- Unemployment and underemployment have also a greater contribution of deprivation in the Kurdistan Region.

Figure 17: Percentage contribution to each indicator to the MPI by region



Prepared by the report team

4.4 MULTIDIMENSIONAL POVERTY BY GOVERNORATE

Before analysing MPI at governorate level, it is useful to point out a positive and high correlation of the MPI value with IP rate in the governorates, estimated at 0.63¹⁵ which is significant $\alpha=0.005$ to reflect that both types of poverty are correlated (table 15).

Table 15: Correlation Matrix Between MPI and Income Poverty

		MPI	IP
MPI	Pearson Correlation	1	.667**
	Sig. (2-tailed)		0.003
	N	18	18
IP	Pearson Correlation	.667**	1
	Sig. (2-tailed)	0.003	
	N	18	18

**Correlation is significant at the 0.01 level (2-tailed).

Table 16 indicates that Muthanna is the multidimensionally poorest governorate with an MPI value of 0.194, which is close to double of the national index value of 0.108. The governorate is also the highest in IP rate (43.6%) (see Annex 2), and the incidence of multidimensional poverty is also the highest in the country with more of 6 people out of 10 living in multidimensional poverty (62.4 %). Salah al-Din is the second poorest governorate in the country in an incidence of multidimensional poverty of

53.3% and an intensity of 31.1%. Kirkuk is the governorate with the lowest levels of multidimensional poverty, with 20.4 % of the population living in poverty, which is 16 percentage points lower than the national average. Followed by Baghdad, as a capital with infrastructure services, job opportunities, educational and health services, the value of the MPI reached 0.078, with an incidence of 27.6% and an intensity of 28.4%.

¹⁵ Pearson's correlation coefficient between the percentage of monetary poverty and MPI has been computed based on IHSES 2023-2024 and governorates MPI results of this report.

Table 16: Multidimensional Poverty by Governorate

Governorate	MPI			Incidence (H,%)			Intensity (A,%)		
	Value	Confidence interval (%95)		Value	Confidence interval (%95)		Value	Confidence interval (%95)	
		Minimum	Maximum		Minimum	Maximum		Minimum	Maximum
Ninevah	0.125	0.096	0.155	40.7	31.5	50.0	30.8	29.0	32.5
Kirkuk	0.052	0.038	0.066	20.4	15.0	25.7	25.6	24.4	26.7
Diala	0.089	0.067	0.111	30.2	24.0	36.5	29.5	27.3	31.6
Anbar	0.124	0.107	0.141	40.0	35.0	45.1	31.0	29.8	32.2
Baghdad	0.078	0.064	0.093	27.6	22.9	32.2	28.4	26.9	29.8
Babylon	0.141	0.110	0.172	44.5	36.5	52.5	31.7	29.2	34.2
Kerbela	0.097	0.073	0.120	33.0	26.5	39.5	29.3	27.1	31.5
Wasit	0.106	0.089	0.123	37.0	31.6	42.4	28.6	27.3	29.9
Salah Al-Deen	0.166	0.142	0.190	53.3	46.6	60.0	31.2	30.0	32.3
Najaf	0.120	0.080	0.160	40.4	28.9	52.0	29.7	26.6	32.8
Qadisiya	0.145	0.124	0.165	46.0	39.6	52.4	31.4	30.3	32.5
Muthanna	0.194	0.171	0.217	62.4	56.3	68.6	31.0	29.8	32.2
Thi-Qar	0.089	0.076	0.102	31.2	27.0	35.4	28.6	27.3	30.0
Missan	0.155	0.133	0.178	51.9	45.4	58.4	29.9	28.7	31.2
Basrah	0.104	0.085	0.124	35.7	30.4	41.1	29.2	27.0	31.4
Kurdistan Region									
Dohouk	0.117	0.101	0.133	42.0	36.6	47.3	27.9	27.2	28.6
Sulaimaniya	0.102	0.089	0.115	38.6	34.4	42.9	26.4	25.4	27.3
Erbil	0.104	0.085	0.123	36.4	30.2	42.6	28.6	26.9	30.3

Prepared by the report team

If we examine the levels of disparity in the incidence of poverty. We find that the governorates greatly vary in that ratio and the MPI is largely related to the incidence, where Muthana, Salah al-Din and Maysan came in the same order in the values of the index, as their incidence of poverty reached **62.4%**, **53.3%** and **51.9%**, respectively, while Kirkuk came with the lowest incidence at **20.4%**. The incidence of Kurdistan Region, Dohuk, Sulaymaniyah, and Erbil reached **42%**, **38.6%**, and **36.4%**, respectively. However, it is noteworthy that the intensity of deprivation is of less disparity between governorates, ranging between **25.5%** and **31.7%**.

Figure 18: Maps of MPI, Incidence and Intensity Ratio for 2024

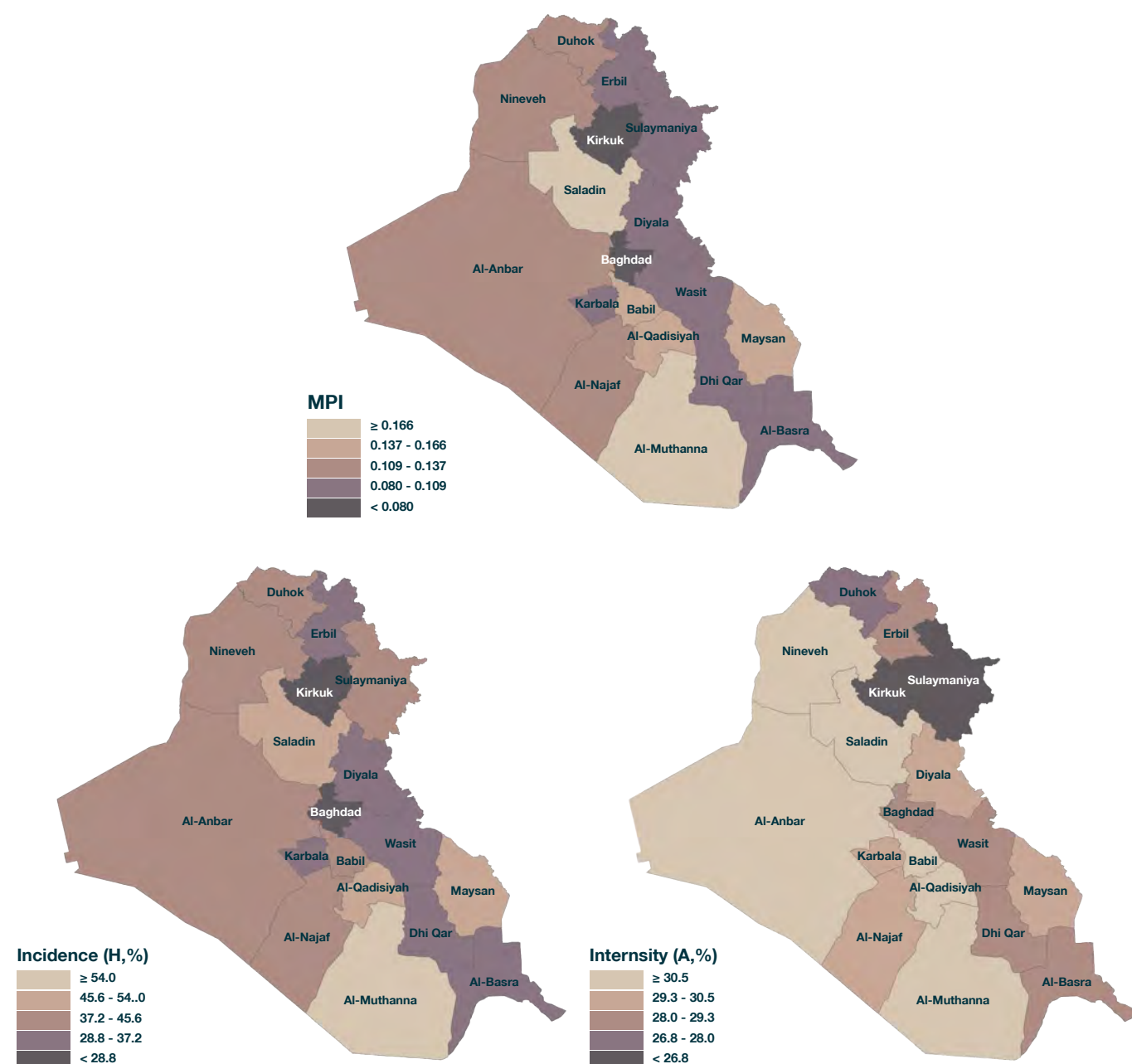
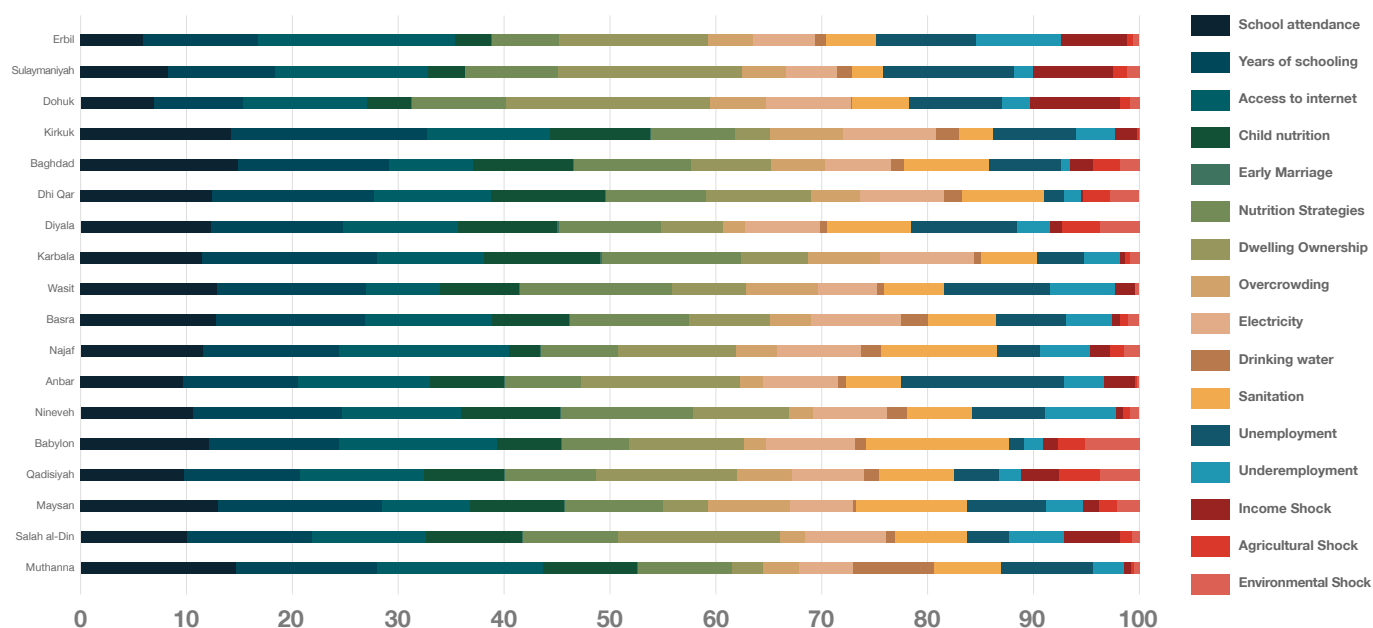


Figure 19 shows the percentage contribution of each indicator to the MPI for governorate. It is not possible to identify a clear pattern that facilitates the interpretation the percentage contributions, but it is clear that the deprivation in the dimension of education is the one with the largest contribution in most governorates given that it contributes more than one third to the MPI except in Dohuk, where education contributes less than one third. Followed by the health dimension, whose contribution is close to 20%. The percentage contribution in the dimensions of living conditions, employment and shocks constitute less than 40% of the total contribution. The shock dimension in its three indicators is the one with the lowest contribution to the MPI. The detailed maps at governorate level show percentage of deprivation of each MPI indicator (Annex 6).

Figure 19: Percentage contribution to each indicator to the MPI by governorate



Prepared by the report team



4.5 MULTIDIMENSIONAL POVERTY BY HOUSEHOLD SIZE

Household size is a direct factor that might be associated with higher levels of multidimensional poverty in Iraq. According to the IHSES 2023-2024, the average household size is 5.9 persons per households. The incidence of multidimensional poverty for households of 3 or less members is 23.0%, with an MPI of 0.061.

In larger households the incidence of multidimensional poverty increases to 31.3% for households of 4 to 6 members and 50.9% for households with 10 or more members with multidimensional poverty index values for the two mentioned categories were 0.086 and 0.159, respectively. The average intensity of deprivation of poor individuals ranges from 26.4% for households with 3 or less members to 31.2% for households 10 members or more (Table 17).

Table 17: Multidimensional Poverty by Household Size

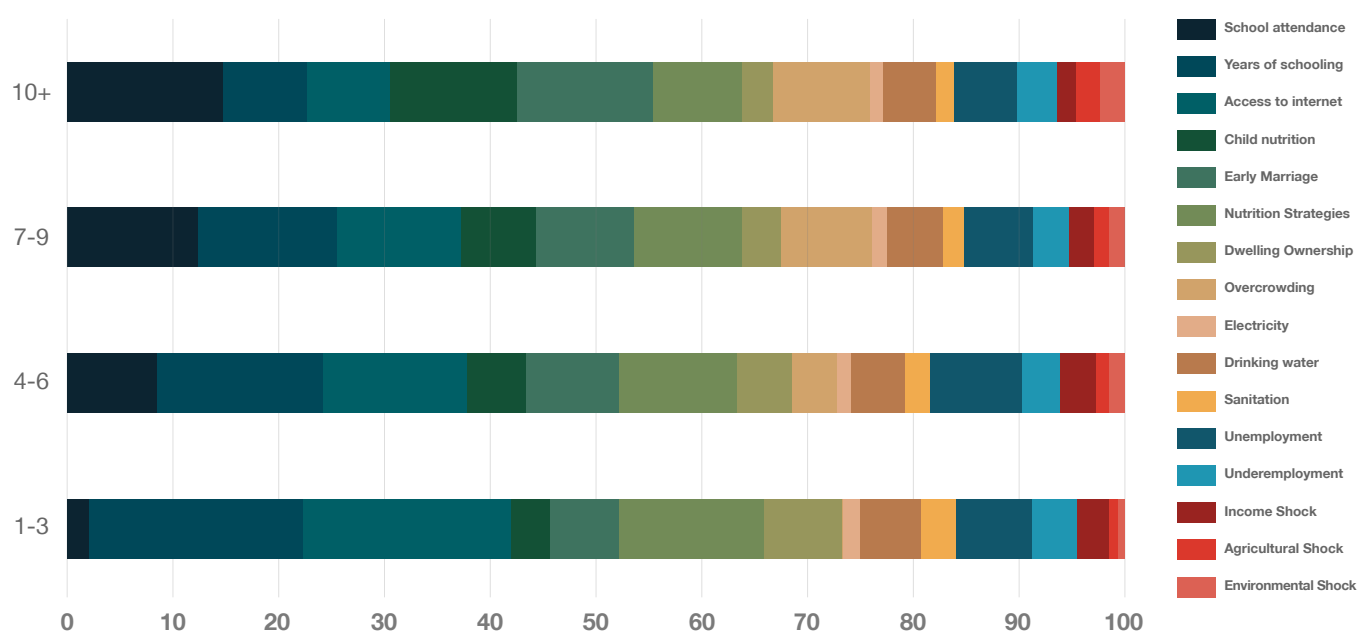
Household size	Population (%)	MPI			Incidence (H,%)			Intensity (A%)		
		Value	Confidence interval (%95)		Value	Confidence interval (%95)		Value	Confidence interval (%95)	
			Minimum	Maximum		Minimum	Maximum		Minimum	Maximum
1-3	6.6	0.061	0.052	0.070	23.0	19.6	26.4	26.4	25.7	27.1
4-6	43.3	0.086	0.080	0.093	31.3	29.0	33.6	27.6	27.0	28.1
7-9	33.3	0.121	0.111	0.130	39.5	36.6	42.4	30.6	29.9	31.3
10+	16.8	0.159	0.143	0.175	50.9	46.0	55.8	31.2	30.3	32.1

Prepared by the report team

Figure 20 indicates that the contribution of school attendance to the MPI increases with the increase in the size of the household, with a contribution lower than 5% in households with 3 or less members and close to 15% for households with 10 or more members. In addition, the contribution of years of schooling decreases as the household size increases, because the years of schooling indicator uses a minimum condition, therefore larger households have higher probability of having at least one adult with 9 years of education.

Instead, the school attendance uses a maximum condition, therefore a household with at least one child not attending to school is deprived and larger households have more children, thus more probability to being deprived. While the relative importance of the indicator of access to internet decrease as the household size increases. As for the indicators of the health dimension, its percentage contribution clearly increases as the household size increases, while the percentage contribution of the other three dimensions (living conditions, employment, and shocks) converges in their relative importance in the MPI with a slight increase in the dimension of household shocks as the household size increases.

Figure 20: Percentage contribution to each indicator to the MPI by household size



Prepared by the report team

4.6 MULTIDIMENSIONAL POVERTY BY EDUCATION OF HOUSEHOLD HEAD

There is no doubt that the educational level of the household head has a clear association to the levels of multidimensional poverty of a household. According to the analysis, there is an inverse relation between the education of household head and the level of its poverty. The MPI of the households headed by an uneducated head account for 0.169 and the household situation begins to improve as the education level of household head rises until it reaches the lowest level of 0.040 when household head complete not less than secondary school. This largest difference of more than four times reveals the importance of raising the education of household head in particular. As for the incidence of multidimensional poverty, it also significantly declines from 54.2% to 44.1% as the education of household head improves, then 25.9% and to 15.8%, meaning that multidimensional poverty is concentrated in households headed by an uneducated person. When comparing the values of the average intensity of poverty of a poor individual, it is noted that they are generally close however they also decrease as the education of household head improves (Table 18).

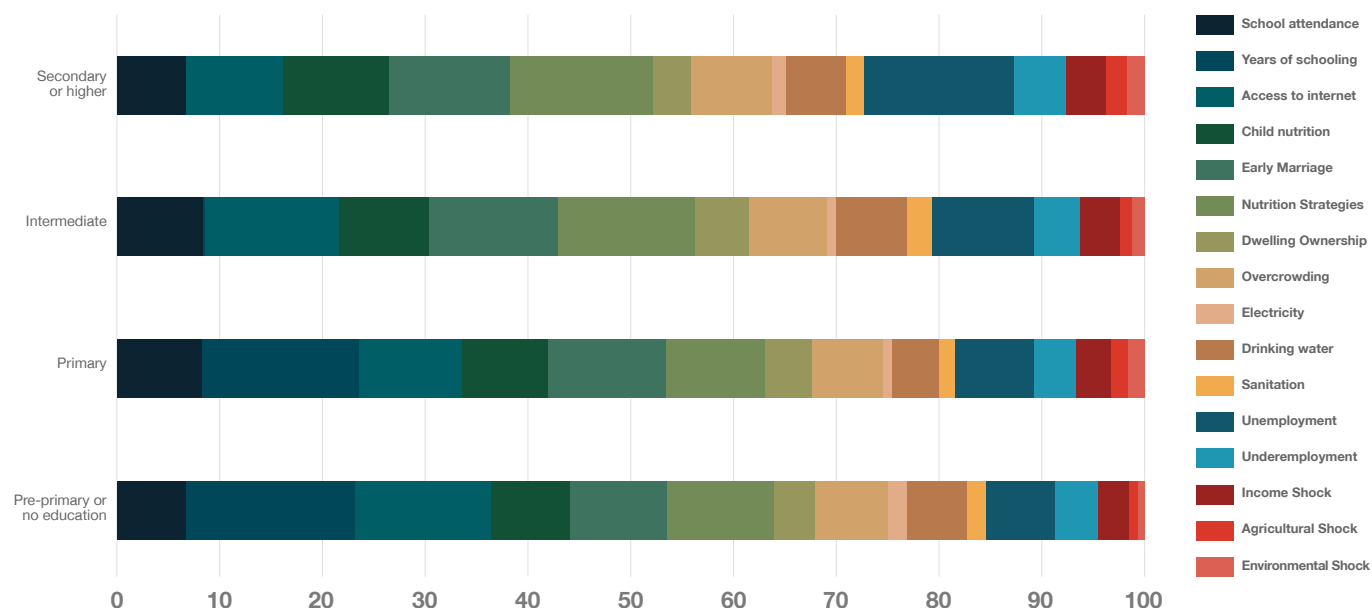
Table 18: Multidimensional Poverty by the Education of Household Head

Wealth quintile	Population (%)	MPI			Incidence (H,%)			Intensity (A%)		
		Value	Confidence interval (%95)		Value	Confidence interval (%95)		Value	Confidence interval (%95)	
			Minimum	Maximum		Minimum	Maximum		Minimum	Maximum
No education	26,06	0,169	0,158	0,181	54,21	51,22	57,21	31,24	30,46	32,03
Primary	33,02	0,129	0,122	0,137	44,10	41,73	46,47	29,30	28,70	29,91
Intermediate	15,98	0,071	0,060	0,082	25,91	22,24	29,58	27,53	26,37	28,69
Secondary or higher	24,94	0,040	0,034	0,046	15,76	13,38	18,13	25,33	24,61	26,06

Prepared by the report team

When comparing the percentage contribution of each multidimensional poverty indicator by education of household head, it is noted that these percentages are generally convergent, as shown in figure 21, except for health indicators, where the contribution to the MPI increases for households headed completed higher education, unlike households headed by persons with lower education.

Figure 21: Percentage Contribution to each indicator to the MPI by education of household head



Prepared by the report team

4.7 MULTIDIMENSIONAL POVERTY BY WEALTH QUINTILE

The MPI is inversely proportional to the level of household income, as the higher the level of income, the lower the MPI, but it should be noted that MPI of the poorest quintile is better than the subsequent quintile, as an exception of the aforementioned conclusion. This might be associated by the fact that the size of the household in the poorest quintile is smaller, the same applies to the incidence in successive quintiles, where this ratio decreases as the income improve, except the poorest quintile, where the incidence is lower compared to the Second quintile (43.4% compared to 55.1%). (Table 19).

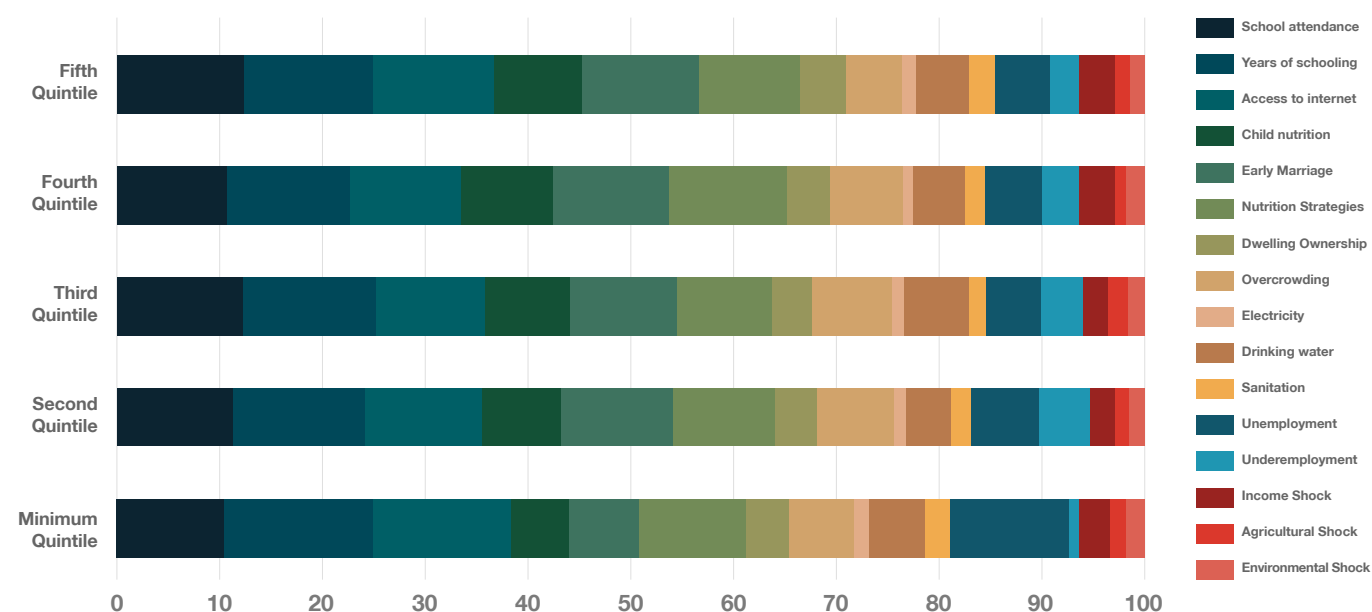
Table 19: Multidimensional Poverty by Wealth Quintile

Wealth quintile	Population (%)	MPI			Incidence (H,%)			Intensity (A%)		
		Value	Confidence interval (%95)		Value	Confidence interval (%95)		Value	Confidence interval (%95)	
			Minimum	Maximum		Minimum	Maximum		Minimum	Maximum
Minimum quintile	18,5	0,132	0,121	0,144	43,4	39,9	46,9	30,4	29,7	31,2
Second quintile	17,2	0,175	0,161	0,189	55,1	51,3	58,9	31,7	30,8	32,7
Third quintile	20,5	0,119	0,107	0,131	41,0	37,4	44,7	29,1	28,1	30,0
Fourth quintile	20,2	0,088	0,080	0,097	32,0	29,1	35,0	27,6	26,7	28,4
Fifth quintile	23,6	0,048	0,042	0,055	18,5	16,1	21,0	26,2	25,3	27,1

Prepared by the report team

As for the percentage contribution of each MPI indicator by wealth quintile shown in figure 22, the differences between the dimensions are generally convergent, except for increase in percentage contribution of the three indicators of health in successive wealth quintile due to the low deprivation levels of rich households in employment and shocks dimensions. It is also noted that the percentage contribution of employment in its indicators (unemployment and underemployment) is higher among poor households.

Figure 22: Percentage Contribution to each indicator to the MPI by wealth quintile



Prepared by the report team

4.8 CORRELATION ANALYSIS BETWEEN POVERTY MEASUREMENT AND SOME CHARACTERISTICS

The correlation matrix (Table 20) showed that there is a significant positive correlation between the MPI and the IP measure with a value of 0.63 to reflect an association between both measures, as the poor from an income perspective is mostly multidimensionally poor as well as a direct and significant correlation between household size and multidimensional poverty, as MPI tends to increase as household size increases. There were no significant correlations between the unemployment rate and other indicators.

The availability of rules of correlations between indicators allows directing policies towards reducing multidimensional poverty, of which, focuses on poor areas where the household size is large, especially in rural areas and giving addressing poverty in the poor areas a greater priority. This is also consistent with the priorities envisaged to addressing IP due to the similar pattern of correlations to other indicators.

Table 20: Correlation Matrix Between MPI, Income Poverty Measure, Unemployment Rate, Household Size, Percentage of Rural Population and the Gap Between Individuals' Incomes

		MPI	Unemployment	Income poverty	HHs	Gap	rural %
MPI	Pearson Correlation	1	0.292	.630**	.509*	-0.353	.574*
	Sig. (2-tailed)		0.24	0.005	0.031	0.15	0.013
	N	18	18	18	18	18	18
Unemployment	Pearson Correlation	0.292	1	0.072	0.294	-0.033	-0.17
	Sig. (2-tailed)	0.24		0.776	0.236	0.896	0.499
	N	18	18	18	18	18	18
Income poverty	Pearson Correlation	.630**	0.072	1	.551*	-.745**	.675**
	Sig. (2-tailed)	0.005	0.776		0.018	0	0.002
	N	18	18	18	18	18	18
HHs	Pearson Correlation	.509*	0.294	.551*	1	-.769**	.576*
	Sig. (2-tailed)	0.031	0.236	0.018		0	0.012
	N	18	18	18	18	18	18
Gap	Pearson Correlation	-0.353	-0.033	-.745**	-.769**	1	-.522*
	Sig. (2-tailed)	0.15	0.896	0	0		0.026
	N	18	18	18	18	18	18
rural %	Pearson Correlation	.574*	-0.17	.675**	.576*	-.522*	1
	Sig. (2-tailed)	0.013	0.499	0.002	0.012	0.026	
	N	18	18	18	18	18	18

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).



5

POLICY & IMPLICATIONS



5.1 KEY FINDINGS

Iraq is witnessing a keen interest in addressing poverty in all its forms and dimensions and the formation of a high administration for poverty reduction policies, the launch of follow-up strategies and setting poverty reduction at the top of the current government curriculum priorities are important directions to support the Iraq Sustainable Vision 2030 and the NDP 2024-2028. Systematic preparation of studies on measuring multidimensional poverty and keeping pace with methodologies is an evident feature. This study comes to ensure the provision of the latest indicators in multidimensional poverty measurement based on a household database which is the latest in light of the completion of the IHSES 2023-2024. The dimensions of the new index were derived from an extrapolation of the challenges and problems associated with the manifestations of multidimensional poverty through a series of community dialogues and workshops. The following are the main conclusions:

1. The development of the 2024 MPI dimensions is important, as the number of these dimensions has expanded from three to five to include one dimension on employment and another on household shocks related to manifestations of deprivation in Iraq.
2. In 2024, 36.8% of the population in Iraq is multidimensionally poor, with an intensity of Poverty of 29.4%, therefore the poor populations in Iraq face almost 30% of the weighted deprivations. The MPI for 2024 was equal to 0.108. Rural areas face higher levels of multidimensional poverty and the governorate Muthanna presents the highest levels of multidimensional poverty with more than 60% of the population living in multidimensional poverty.
3. As for comparing levels of deprivation, it was noted that overcrowding is the highest as the percentage of population deprived amounted 30.8%, followed by percentage of population deprived who didn't complete 9 academic years 29.9% while the percentage in the indicators of employment and household shocks have less than 10% of the population in Iraq deprived.
4. The indicators of unemployment and underemployment present 7.9% and 3.8% of the population deprived and multidimensionally poor in 2024.
5. Multidimensional Poverty data for both urban and rural areas confirm that urban people are less deprived than rural. MPI accounted for 0.080 in 2024 in urban areas and 0.157 in 2024 in rural areas
6. A relative similarity was observed in the contribution of each multidimensional poverty indicator, with some differences when comparing these ratios at the level of urban and rural areas. The contribution of deprivation of indicators in both the education dimension and basic services is more pronounced than in urban areas. The contribution of household shocks is also higher in the level of deprivation.

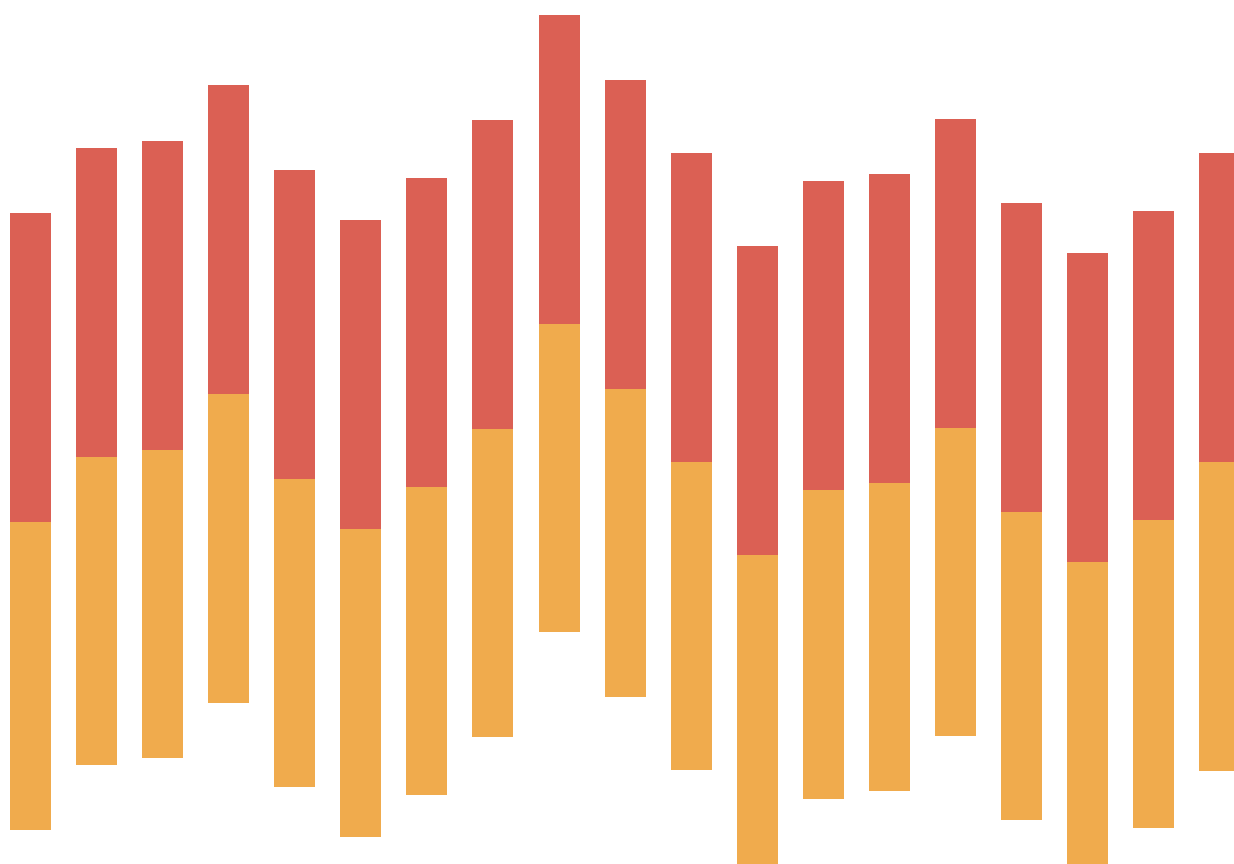
7. MPI in the Kurdistan region is lower than in central and southern Iraq, which might be associated with the political, security and economic stability that the region has been witnessing for more than two decades. However, this difference became limited in 2024, as the MPI was 0.106 in the Kurdistan region and 0.109 in central and southern Iraq.

8. Disparities in MPI between governorates are still relatively large. Kirkuk has with the lowest MPI of 0.052, followed by Baghdad 0.078 and Dhi Qar 0.089, while MPI in the governorates of the Kurdistan Region as MPI reached 0.117, 0.102 and 0.104 in the governorates of Dohuk, Sulaymaniyah and Erbil respectively, Muthanna is the most deprived governorate in Iraq with an MPI equal to 0.194

9. MPI varies depending on the size of the household, as more members it has, higher the MPI, as well as by the incidence, and intensity of multidimensional poverty. MPI decreases in households consisting of one to three members to 0.061 and increases successively to reach 0.168 for large-sized households, the same goes for the incidence which is significantly increase from 23% to 51%.

10. The educational of household head is also inversely proportional to the MPI indicators. MPI increases to 0.162 for the households headed by an uneducated person and decreases as the educational situation improves, reaching the lowest value for the highest educational attainment (secondary and higher) at 0.038. This reflects the role of education in improving the different household conditions.

11. The MPI is inversely proportional to household income. The percentage contribution of each of the MPI indicators by wealth quintile groups are generally similar, except the percentage contribution of the three indicators of health dimension in successive income groups, due to the low levels of deprivation among richer households in employment and shocks.



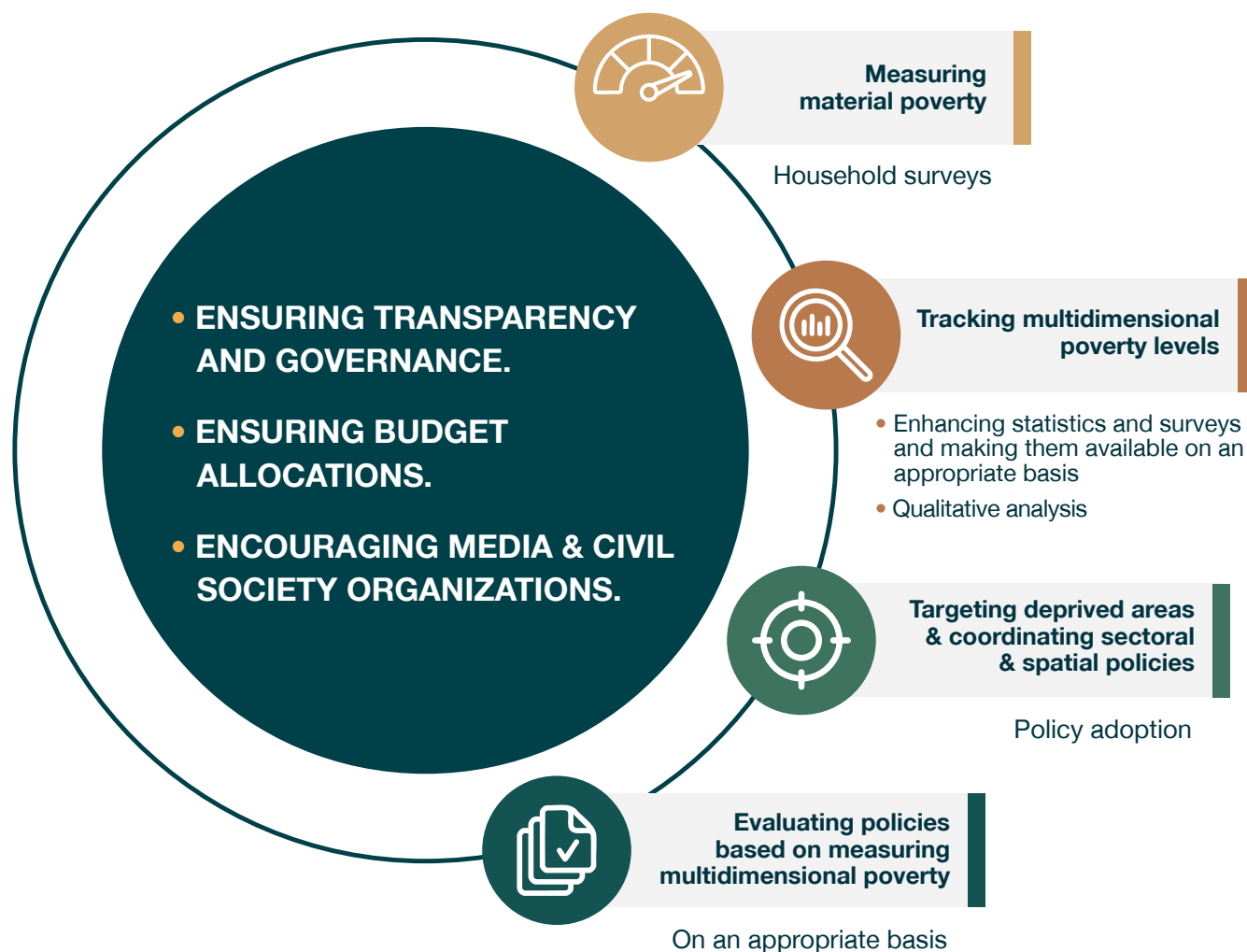
5.2 BUILDING POLICIES TO REDUCING MULTIDIMENSIONAL POVERTY

Multidimensional poverty provides a comprehensive view of poverty and enables its address to be directly linked to policies, contrary to the monolithic view for the IP. School attendance, child health care and the availability of basic services are directly related to poverty when measured in a multidimensional way, which gives government leaders and decision-makers a clear vision when planning various economic and social programs that have an impact on poverty reduction which requires an adoption at the highest levels of government or through the specialized government (for example, the Ministerial Council for Human Development in Iraq,) and linking the poverty reduction activities to the relevant ministry, each according to its field, which falls under the multidimensional poverty measurement, and monitoring the percentage contribution of deprivation to that dimension (or its elements) and what is the target to be reduced.

What distinguishes the multidimensional poverty is that it enables not only to determine where the majority of the poor live, but also to identify the multiple and interrelated clusters of deprivation. What makes it even more important is that it enables them to identify spatial and sectoral poverty levels, allow to adopt policies to reduce disparity and contribute to achieving the sustainable development goals in a better way to achieve the aspiration “leaving no one behind”. The detailed analysis of the MPI makes it possible to identify sectors, regions and segments of society that need special attention, provide opportunities for making broad decisions related to social policies, and allow raising the elements of human development towards the effective use of public funds based on a detailed budget at region and sector levels. In general, measuring multidimensional poverty should be linked to figure 23.



Figure 23: Steps and Measures of MPI Measurement in Iraq



Prepared by the report team

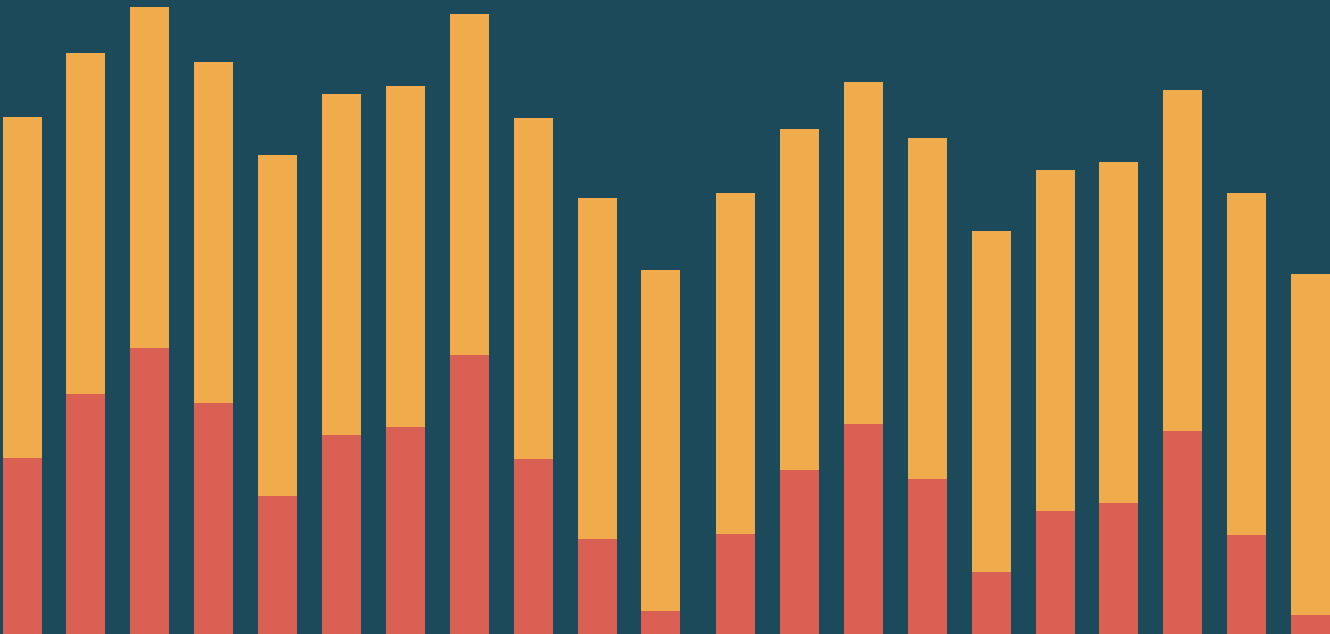


While MPI indicators have key implications in formulating poverty reduction policies due to the following reasons¹⁶ :

- 1. The MPI is important to set institutional goals and coordinate social policy strategies, because poverty reduces when ministries reach their associated goals.
- 2. Budget decisions could be more efficient if MPIs are used because it is possible to see where each dollar is most valuable to reduce poverty.
- 3. The MPI can be used to monitor the implementation of different social and economic programs aiming to reduce poverty and deprivation, making it very useful for budget decisions.
- 4. We can find who the poorest people are by measuring how many deprivations they have, using the MPI. This makes the MPI crucial for targeting resources and services across the country to the poorest households, to leave no one behind.
- 5. The MPI is a useful management tool to track and meet nationally defined poverty reduction goals by ministries – so everyone knows what to do to end poverty.
- 6. Making the MPI an official poverty measurement can be an important tool for accountability, and for SDG reporting.
- 7. The MPI is important as an advocacy tool for various groups such as children, women and people with disabilities, because it can highlight how their situations differ from other populations.

The MPI can be useful to report advances in the agenda 2030, since the national MPI is part of the SDGs and their dimensions cover other goals. We use the national MPI to report in the Voluntary National Reports to the UN and report it as SDG indicator 1.2.2.

¹⁶ Quoted from “How to Use National MPIs as a Policy Tool: From Metrics to Policy, UNDP, 2024.

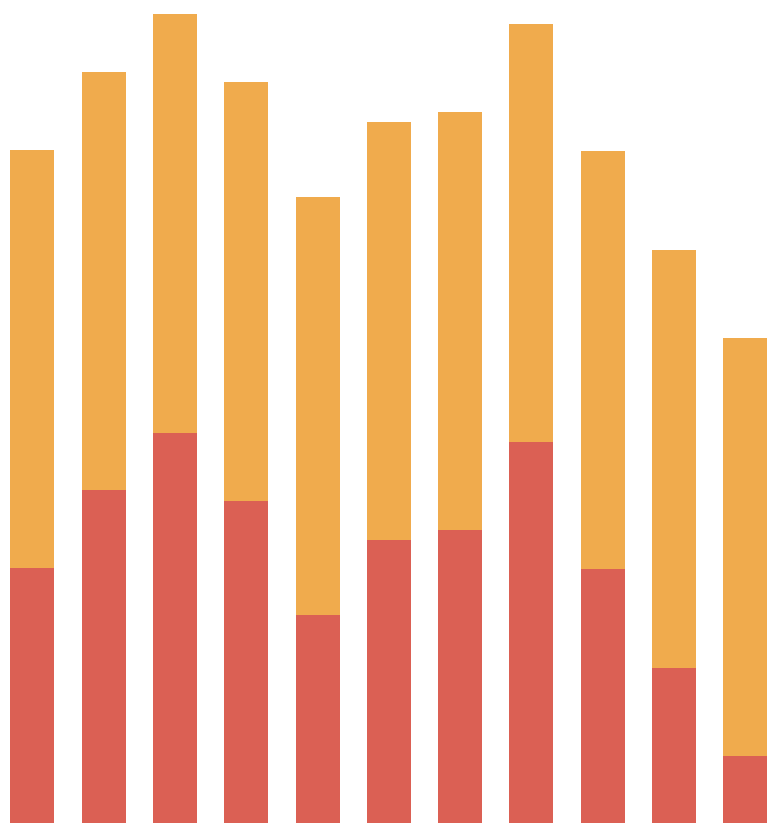


5.3 A SCENARIO FOR FORMULATING A NATIONAL TARGETING MODEL

The establishment of the Executive Department for Poverty Reduction Policies in Iraq in 2010, as general department in the MOP, has played an important role in coordinating plans and programs and preparing a national poverty reduction strategy. In order to activate these plans and programs, it prepares to produce the third poverty reduction strategy. The details of the deprivation indicators at governorate level are suitable for the formulation of sound policies to address deprivation, both at the geographical level (governorates) or at the sectoral level (indicators). While tracking the paths of work referred to in figure 23, the most important track starts from the preparation of the necessary estimates of multidimensional poverty indicators at the level of the governorates of Iraq, starting with headcount ratios for each of the sixteen multidimensional poverty indicators.

Targeting priorities were expressed and policies that reduce the different poverty profiles of each governorate were adopted as presented in the detailed table of MPI deprivation levels (Table 21). Each governorate is represented horizontally by a row in the said table. The more the cells representing level of deprivation appear in the order of least deprivation (green) and the subsequent gradient, the better it reflects a developmental description of the governorate against that indicator, and the closer the color of the cell (for deprivation indicator) to the red color, the more this requires giving appropriate priority to the service or phenomenon reflected by

the indicator in poverty reduction plans. It is clear that Muthanna Governorate that ranked the highest in MPI, reducing deprivation in most of its indicators requires giving it a priority in the development plan. The same goes for the rest of the governorates. This requires designing a combination of priorities at the governorate level on the one hand, and at the sectors level (indicators) on the other. This depends on several factors, the most important of which is conducting studies that lead to the formulation of models for improving services (both at the geographical and governorate levels) in order to achieve better efficiency in the provision of those services. Returning to figure 23, there are requirements that should be linked to each of the main tracks: ensuring transparency and governance; ensuring the allocation of budgets; and urging the media and civil society organizations to promote these policies.



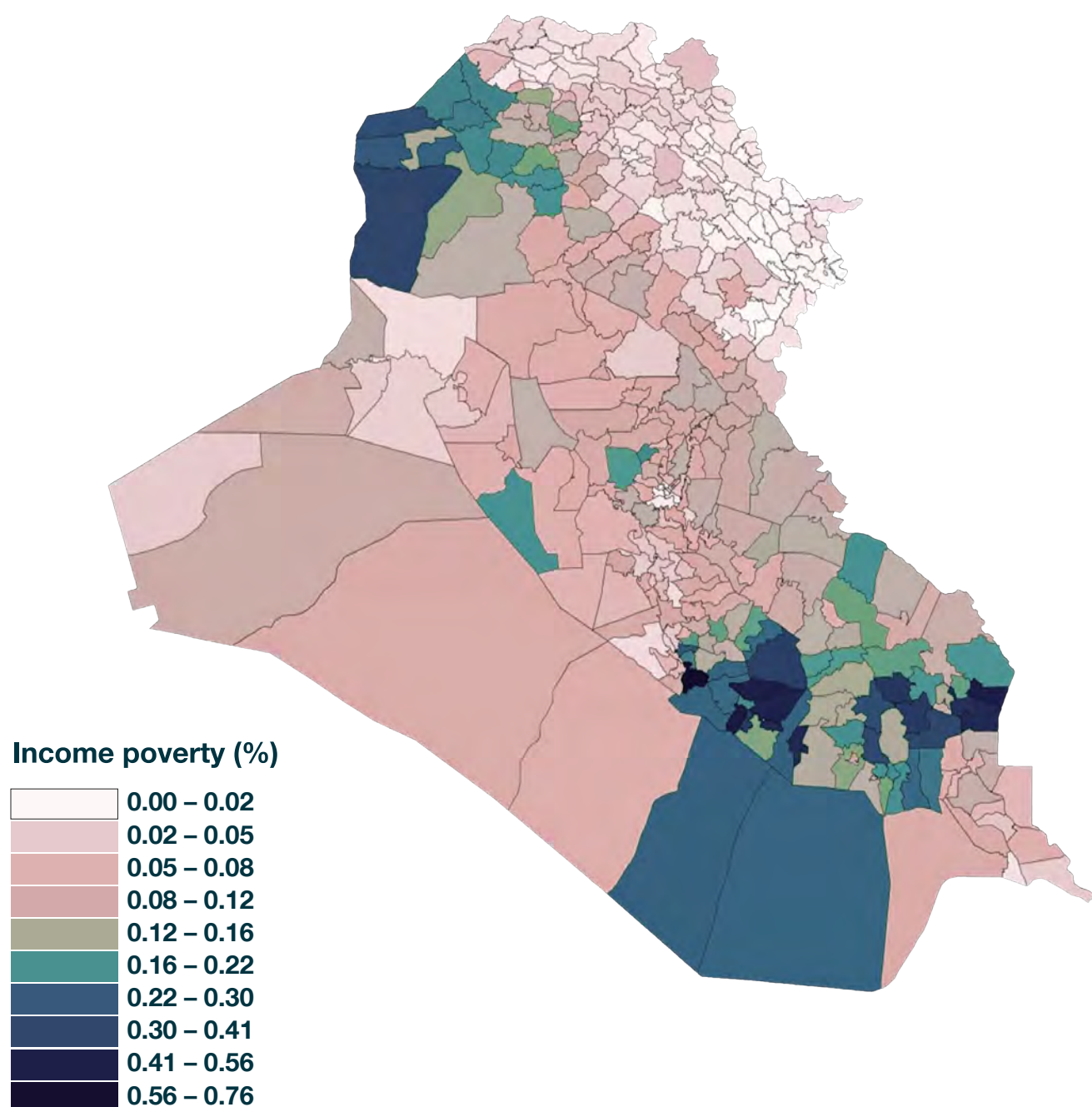
To activate and improve the follow-up on the implementation of the activities and programs of the poverty reduction strategy which is supposed to be identified based on the analysis data concluded, it will be necessary to measure the progress achieved in the implementation of poverty reduction activities and address the challenges that emerged during implementation, adopting communication policies with ministries and other authorities and link their activities to reduce poverty within special and sectoral targeting clusters, as well as developing an effective media plan to let the poor be acquainted with poverty reduction project and explain its importance as well as achieve the advocacy required to keep the privileges of these projects only for the poor.

The steps previously mentioned are preliminary stage for formulating more comprehensive policies and achieving appropriate geographic targeting by diagnosing poverty hotspots at the level of smallest administrative formation (subdistrict). The results provided in this report do not allow for the provision of multidimensional poverty indicators at a level smaller than the governorate due to the sample size primarily designed to provide data representative at governorate level.

In 2013, Iraq carried out a large survey, the Poverty Map Survey in Iraq, the survey included about 300,000 households which enabled the provision of statistical indicators at sub district (the smallest administrative formation) as shown in figure 24, these indicators were used to target the poorest areas. The data of this report can be benefited from by building statistical models to describe the poor households based on the sixteen indicators within the five dimensions of the MPI and then conducting a simulation process to disseminate statistical models at the level of smaller administrative formations in terms of the common denominators of the indicators taken in the proposed model.



Figure 24: Percentage of Poverty at Smallest Administrative Formation (Sub-district) in Iraq 2013



Source: Annual Report on Following up the implementation of poverty reduction strategy, page 20.

Table 21: Detailed Table for Deprivation on Levels of Multidimensional Poverty*

Governorates	School attendance	Years of schooling	Access to internet	Child nutrition	Early Marriage	Nutrition Strategies	Dwelling Ownership	Overcrowding	Electricity	Drinking water	Sanitation	Unemployment	Underemployment	Income Shock	Agricultural Shock	Environmental Shock
Duhok	-1.1	-1.4	0.1	-1.1	-0.2	1.9	0.5	0.7	-0.3	-0.5	-1.0	0.6	-0.4	-0.4	-0.3	2.2
Nineveh	0.0	0.8	-0.2	0.6	1.5	0.0	-0.9	-0.1	0.2	-0.5	0.0	0.1	1.7	-0.3	-0.6	-0.5
Sulaymaniyah	-1.6	-0.7	2.4	-1.8	-1.6	0.5	-0.1	-0.8	-0.1	-0.5	-0.9	0.4	2.0	-0.5	-0.7	1.0
Kirkuk	-0.8	0.4	-0.2	0.0	-2.1	-1.2	1.5	0.5	0.0	-1.8	-0.7	-0.2	-0.8	-0.9	-1.0	-0.7
Erbil	-1.2	-1.2	1.2	-1.5	-0.2	0.7	-0.1	-1.4	0.2	-0.3	-1.1	0.8	-0.8	-0.4	-0.4	2.0
Diyala	-0.1	0.2	-0.4	0.6	-0.5	-0.3	-0.3	0.8	0.0	0.4	-0.7	-1.5	-0.8	0.2	0.7	-0.8
Anbar	-0.1	-0.3	0.2	0.3	-1.2	1.5	-0.8	0.5	-0.2	0.2	-0.9	2.0	0.2	-0.9	-0.8	0.0
Baghdad	0.4	-0.5	-1.0	0.2	0.1	-0.7	-0.2	-1.1	-0.2	0.3	0.5	-0.2	-1.1	-0.1	0.4	-0.3
Babylon	0.5	0.6	1.1	-0.2	-0.8	1.1	-0.6	2.3	-0.1	2.4	1.2	-1.7	-0.3	2.7	1.3	-0.4
Kirkuk	-0.1	1.0	-0.5	1.4	1.6	-0.8	0.6	1.7	-0.1	-1.4	0.5	-1.0	-0.3	-0.5	-0.8	-0.6
Wasit	0.3	-0.1	-0.1	-0.3	0.3	-0.2	-0.4	0.8	0.4	-0.9	0.0	-0.3	0.2	-0.3	-0.7	-0.8
Salah al-Din	0.3	0.5	0.4	1.3	0.5	1.6	-0.7	1.6	-0.1	1.2	-0.6	-0.8	1.6	-0.3	0.3	1.6
Najaf	0.2	0.1	1.0	-1.4	-0.7	0.5	-0.2	1.0	0.0	0.4	1.5	0.0	-1.4	-0.1	-0.3	-0.5
Qadisiyah	0.1	0.0	0.4	0.8	0.0	1.0	1.0	0.9	0.1	1.0	-0.5	-0.7	-0.5	2.0	2.7	0.4
Muthanna	2.9	2.3	2.3	1.3	0.6	-1.0	0.4	-0.4	4.1	0.5	-0.3	1.5	0.4	-0.5	-0.8	-0.6
Dhi Qar	0.0	-0.4	-0.6	0.3	-0.4	-0.9	-0.9	0.0	-0.3	0.3	-0.4	0.0	-0.1	1.1	1.1	-0.7
Maysan	1.5	2.4	-0.4	0.8	0.1	-0.8	2.8	0.2	-0.3	0.3	2.6	1.3	0.6	0.9	0.4	-0.3
Basra	0.2	0.4	-1.1	-0.3	1.2	-0.6	1.5	-0.4	-0.2	-1.0	0.2	1.0	1.1	-0.7	-1.1	-0.5

Prepared by the report team

The table is viewed horizontally when tracking the level of deprivations in each governorate for the purpose of formulating poverty reduction policies. For example, in Duhok Governorate, the highest deprivation is in the nutrition strategies and environmental shocks indicators, and these should be given appropriate priority within Duhok's multidimensional poverty reduction policy (spatial dimension).

The table is viewed vertically when formulating policies that address the problems of each of the sixteen indicators of different governorates. For example, priority in addressing deprivation in enrollment in school attendance is given to Muthanna and Maysan Governorates (sectoral dimension).

* By adopting the data of Annex 3, the sixteen deprivation indicators were transferred into (Z-Scores) to facilitate the classification of deprivation and the formulation of priorities. For example, the school attendance deprivation column has been transferred to Z-Scores as follows:

$$\frac{(\text{Deprivation of } j^{\text{th}} \text{ Indicator for } i^{\text{th}} \text{ governorate} - \text{National } j^{\text{th}} \text{ Deprivation indicator})}{\text{Standard Deviation of } j^{\text{th}} \text{ indicator}}$$

where $i = 1, 2, \dots, 18$ and $j = 1, 2, \dots, 16$

5.4 RECOMMENDATIONS

1.

Achieving an advanced level of interaction between the ministries and various authorities concerned with poverty reduction in its various dimensions under the direct supervision of the Ministerial Council for Human Development by linking poverty reduction activities to the concerned ministry, each according to its field, which falls under the multidimensional poverty measurement, and monitoring the percentage contribution of deprivation to that dimension (or its elements) and what is targeted to be reduced. This requires adopting a double plan based on formulating special priorities according to the governorate deprivation rate on one hand and the more deprived sector based on the analysis results mentioned in this report. This requires regular meetings of the Higher Committee for Poverty Reduction Policies at the Ministry of Planning.

2.

Adopt a regular schedule to provide data on which the measurement of multidimensional poverty is based on an appropriate periodicity (every four years) and annually update data using the partial survey method, to track multidimensional poverty paths and its spatial gaps.

3.

Coordinate national efforts to follow up the progress in achieving the SDGs and multidimensional poverty reduction efforts to ensure integration in the assessment process, as the MPI, as an official measure of poverty, is supposed to be an important tool for accounting and reporting on the SDGs as well as in reporting on the progress in Iraq Vision 2030.

4.

It's important to emphasize the role of the social protection system in reducing poverty. Strengthening its key components—social insurance, social assistance, and active labor market policies are important for poverty reduction. Additionally, adaptive and shock-responsive social protection can help mitigate risks from future shocks, including climate shocks considered in the Iraq MPI framework.

5.

Multidimensional poverty reduction policies require ensuring real linkages between the federal government and local governments, especially with the presence of an executive department for poverty reduction policies in order to benefit from mutual opportunities in supporting these policies, especially the Social Development Fund in the MOP and the Reconstruction and Development Fund for the poorest governorates in the Prime Minister's Office.

6.

Consider advocacy policies at media level on the one hand and at level civil society organizations and non-governmental organizations' level on the other hand as part of the monitoring strategy to ensure transparency and governance.

7.

Ensure the achievement of appropriate budgets to achieve the objectives of the upcoming National Poverty reduction Strategy in Iraq, to be adopted within the government's directions in adopting the programs of this strategy, even exceptionally within special budgets based on the concept of programs and performance budgeting.



ANNEX 1: A BRIEF DESCRIPTION OF THE IRAQ SOCIO- ECONOMIC HOUSEHOLD SURVEY

The commission of Statistics and Geographic Information Systems (CSGIS) and the Kurdistan Region Statistics Office (KRSO) conducted the third round of Iraq Socio-Economic Household Survey (IHSES 3) during 2023-2024, with a support from the World Bank (WB). The first and second rounds of the survey were conducted in 2007 and 2012. This survey is the largest household survey conducted in Iraq, encompassing 25 sections to cover the country's need for data on households and their members in the areas of expenditure, income, education, health, housing characteristics, living conditions, employment and unemployment, time use, family shocks, and more. IHSES data helped build models to measure income poverty. It has been used to construct the 2024 Multidimensional Poverty Index. The Multidimensional Poverty Index for 2011 and 2018 was measured using data from the Multiple Indicator Cluster Survey (MICS). The IHSES survey covered all Iraqi governorates, and a stratified random sample was designed, with each governorate considered a stratum, followed by a random sample of households from each district within the governorate.

The sample size was 24,500 households, with a response rate of 90%, resulting in an actual sample size of 22,000 households. The survey lasted for 12 consecutive months, covering seasonality in expenditure, income, and other characteristics. However, this survey faced field challenges related to the large volume of data required to cover the 25 sections of the questionnaire. This required long hours daily for field researchers over the course of a full year, and sometimes caused boredom for the households included in the survey. The project management faced some challenges related to some of the technical concepts of the survey sections. The team was keen to ensure were adhered to by field researchers due to the breadth of the questions and the accuracy of the responses required to be collected. The most significant challenges were:

- Some households rejected and refused to accept the survey idea due to their disregard for the importance of the project and the results it would provide.
- Households included in the survey were reluctant to provide certain information, such as family income data, for fear that it might be related to tax and other issues, particularly fear of being excluded from the social protection system.
- The hot summer weather, cold winter weather, and rainfall sometimes hindered continuous monitoring of households.
- Lack of confidence and conviction in the results of this data, which could be formulated into concrete development plans and programs that fundamentally serve the citizen and advance the development reality in Iraq in general.

These and other challenges resulted in limited results in some sections, particularly the income section. This is because households tend to underestimate their actual income levels while exaggerating their expenditure data. Furthermore, some individuals refrain from measuring their heights and weights for psychological or social reasons.

ANNEX 2: INCOME POVERTY RATES BY GOVERNORATE FOR 2007, 2012, 2018. 2024

Governorates	MP in Iraq (%)			
	2007	2012	2018	2024
Dohouk	9.3	5.8	8.6	14.8
Ninevah	23.0	34.5	37.7	16.5
Sulaimaniya	3.3	2.0	4.5	7.9
Kirkuk	9.8	9.1	7.6	9.5
Erbil	3.4	3.6	6.7	5.9
Diala	33.1	20.5	22.5	17.2
Anbar	20.9	15.4	17.0	20.9
Baghdad	12.8	12.0	9.9	13.5
Babylon	41.2	14.5	11.1	34.4
Kerbela	36.9	12.4	13.8	19.9
Wasit	34.8	26.1	18.7	19.3
Salah Al-Deen	39.9	16.6	17.9	18.7
Najaf	24.4	10.8	12.6	25.2
Qadisiya	35.0	44.1	47.7	28.9
Muthanna	48.8	52.5	52.1	43.6
Thi-Qar	32.0	40.9	33.9	14.2
Missan	25.3	42.3	45.4	16.3
Basrah	32.1	14.9	16.2	27.9
Iraq	22.9	18.9	20.05	17.5

Source: Commission of Statistics and Geographic Information Systems, Household Survey Results for 2007, 2012, 2018, and 2024.

ANNEX 3: PERCENTAGE OF POPULATION DEPRIVED IN EACH MPI INDICATOR IN IRAQ 2024

Governorates	Education			Health			Living standards					Employment		Shocks		
	School attendance	Years of schooling	Access to internet	Child nutrition	Early Marriage	Nutrition Strategies	Dwelling Ownership	Overcrowding	Electricity	Drinking water	Sanitation	Unemployment	Underemployment	Income Shock	Agricultural Shock	Environmental Shock
Dohouk	16,5	21,7	28,9	11,3	25,1	55,0	25,6	37,8	1,6	21,7	1,3	14,7	3,4	21,4	2,1	1,7
Ninevah	25,4	35,6	24,2	24,0	36,3	24,7	12,7	30,2	6,2	20,9	8,5	12,5	9,5	3,3	1,2	1,7
Sulaimaniya	12,4	26,6	58,1	6,6	14,4	32,5	19,6	26,9	3,5	21,4	2,5	14,8	10,5	13,5	1,2	1,0
Kirkuk	19,4	33,9	24,8	20,1	12,0	5,2	31,9	35,0	4,1	4,5	4,1	11,3	1,9	2,4	0,5	0,0
Erbil	16,9	23,5	42,0	7,3	23,7	42,5	22,6	20,5	4,8	21,0	0,7	17,5	2,2	18,1	2,4	2,0
Diala	25,0	32,4	23,4	24,0	23,7	19,8	18,1	37,6	5,0	32,4	3,9	4,1	2,0	1,1	4,4	3,7
Anbar	25,4	28,8	29,0	21,5	17,6	49,9	13,6	35,4	2,2	31,2	2,0	23,0	4,9	6,3	0,9	0,0
Baghdad	28,3	28,0	13,5	23,8	24,7	13,9	19,6	25,8	2,4	31,0	8,0	10,3	0,9	4,0	4,2	2,9
Babylon	30,2	34,9	43,2	19,0	20,9	41,6	14,0	48,0	3,1	59,5	18,3	3,0	2,5	3,2	5,9	11,3
Kerbela	24,9	38,0	21,1	29,2	36,8	10,9	26,1	42,8	3,3	9,4	12,9	6,8	3,5	2,5	0,9	1,4
Wasit	29,1	32,0	26,2	17,7	28,5	20,0	16,3	38,0	9,0	16,9	9,1	10,7	5,2	1,7	1,1	2,3
Salah Al-Deen	29,3	34,6	33,2	28,3	30,1	50,9	14,0	42,9	3,6	43,7	4,4	7,6	9,3	16,5	3,4	1,7
Najaf	30,7	31,8	40,9	9,8	19,4	33,5	17,0	37,8	5,6	32,8	21,5	13,0	0,0	3,8	2,3	2,7
Qadisiya	26,1	32,0	33,3	23,4	25,5	41,4	28,1	37,6	6,4	41,7	5,1	8,3	3,0	9,5	9,0	9,3
Muthanna	52,9	46,1	57,7	29,3	30,2	9,1	24,6	29,5	49,5	34,7	6,5	19,4	5,8	2,3	1,0	1,5
Thi-Qar	26,8	28,6	19,7	22,6	23,2	10,0	11,9	31,8	2,0	31,5	6,1	12,6	3,8	1,9	5,5	6,3
Missan	40,0	47,9	22,5	25,3	27,9	11,2	44,8	34,4	1,3	32,4	30,8	18,6	5,6	4,6	3,9	6,0
Basrah	28,5	34,2	13,3	19,6	36,0	15,1	34,6	29,7	2,3	11,8	10,4	16,9	8,1	3,8	0,1	0,6
Iraq	26,1	31,5	27,3	20,5	25,7	25,3	20,6	32,5	4,7	27,8	8,0	11,9	4,4	6,3	2,9	3,0

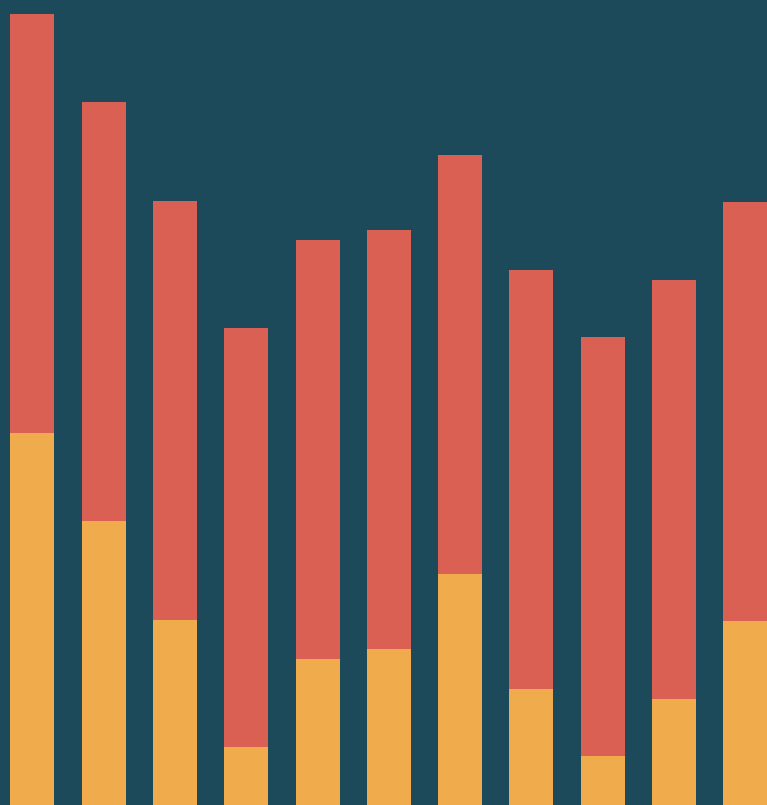


ANNEX 4: ALKIRE – FOSTER METHOD

This Annex provides a systematic overview of the multidimensional measurement method of Alkire and Foster (2011), with an emphasis on the first measure of that class: the Adjusted Headcount Ratio or M0. We focus on the AF method for a number of technical and practical reasons. From a technical perspective, being an axiomatic family of measures, the AF measures satisfy a number of desirable properties, detailed in this section. From a practical perspective, the AF family of measures uses the intuitive counting approach to identify the poor, and explicitly considers the joint distribution of deprivations. Among the AF measures, the M0 measure is particularly applicable due to its ability to use ordinal or binary data rigorously and because the measure and its consistent partial indices are intuitive. The technical and practical advantages of M0 make it a particularly attractive option to inform policy.

It is worth noting from the beginning that the AF method is a general framework for measuring multidimensional poverty, although it is also suitable for measuring other phenomena (Alkire and Santos, 2013). With the AF method, many key decisions are left to the user. These include the selection of the measure's purpose, space, unit of analysis, dimensions, deprivation cutoffs (to determine when a person is deprived in a dimension), weights or values (to indicate the relative importance of the different deprivations), and poverty cutoff (to determine when a person has enough deprivations to be considered poor). This flexibility enables the method to have many diverse applications.

The method for measuring multidimensional poverty consists of an identification and an aggregation method (Sen, 1976). This section first describes how the AF method identifies people as poor using a 'dual cutoff' counting method, standing on the shoulders of a long tradition of counting approaches that have been used in policy making. The aggregation method builds on the unidimensional axiomatic poverty measures and directly extends the Foster–Greer–Thorbecke (1984) class of poverty measures. The main focus of this section is the Adjusted Headcount Ratio, M0, which reflects the incidence of poverty and the intensity of poverty, capturing the joint distribution of deprivations. The section shows how to 'drill down' into M0 in order to unfold the distinctive partial indices that reveal the intuition and layers of information embedded in the summary measure, such as poverty at subgroup levels and its composition by dimension.



THE AF CLASS OF POVERTY MEASURES

Alkire and Foster (2011) propose a method based on the counting approach, which makes adjustments to the traditional FGT family of indicators to bring it to a multidimensional space. This method introduces two cutoffs in the identification stage of the poor.

First, the set of indicators which will be considered in the multidimensional measure is selected. Data for all indicators need to be available for the same household. The achievement matrix contains then the level of achievement of each household in each indicator included in the measure¹⁷.

Then, the deprivation cutoffs for each indicator need to be set – namely, the level of achievement considered sufficient (normatively) in order to be non-deprived in each indicator. After applying these cutoffs, each household is identified as either deprived or non-deprived in each indicator. More formally,

$$\tilde{x}_{ij} = \begin{cases} 1 & \text{if } x_{ij} < z_j \\ 0 & \text{otherwise} \end{cases}$$

where:

x_{ij} is the value of achievement household i in indicator j

z_j is the deprivation cutoff for indicator j , and

$\tilde{x}_{ij}$ is a dichotomous variable that takes value =1 if household i is deprived in indicator j , and =0 otherwise.

The achievement matrix transforms then into the deprivation matrix, which contains the variables for each indicator/household.

At this stage, the relative weight or value that each indicator has is applied, such that these sum to one or 100%. In this way, the dichotomous variables $\tilde{x}_{ij}$ which take values 0 or 1 are multiplied by the weight of each indicator to obtain the weighted deprivation matrix.

¹⁷ In this matrix, each row represents a different household, while columns correspond to each indicator included in the measure. For instance, if we were considering the case of four households and six indicators, the matrix's size would be 4x6 (i.e., four rows and six columns). The first cell, [1,1], would represent the level of achievement of household 1 in indicator 1; the second cell in the first row, [1,2], would represent the achievement of household 1 in indicator 2, and so on.

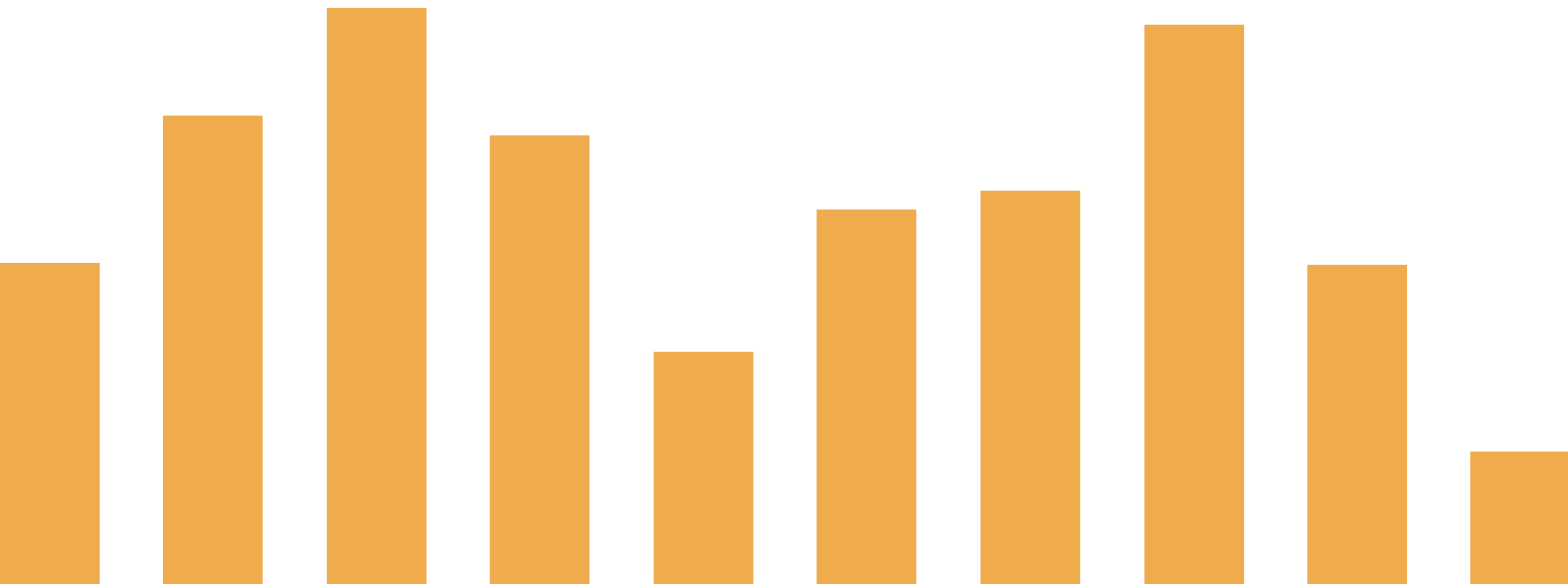
As indicated by Alkire and Foster (2011), “dimension specific cutoffs alone do not suffice to identify who is poor; we must consider additional criteria that look across dimensions to arrive at a complete specification of the identification method”. To do this, once established who is deprived in each indicator, this method counts the number of attributes in which household i is deprived: the counting vector, c_i , represents then the sum of weighted deprivations faced by each household.

At this stage, the second threshold, k , is set. It defines who is multidimensionally poor and who is not. In other words, k represents the minimum number of weighted indicators in which a household must be deprived to be considered as multidimensionally poor. Thus, we have:

$$\rho_i = \begin{cases} 1 & \text{if } c_i \geq k \\ 0 & \text{otherwise} \end{cases}$$

where ρ_i is a dichotomous variable that takes value =1 if household i is poor in at least k weighted indicators. This method allows using the union and intersection approaches, setting $k = 1$ and $k = d$, respectively (where d is the number of indicators included in the analysis). Similarly, an intermediate approach is also allowed setting a value of k between these extremes. That is, the union and intersection approaches can be taken as special cases of this method.

Alkire and Foster (2011) do not provide an algorithm for determining k , but rather consider the results with all possible values of k between 1 and d as a kind of robustness test of the estimations. In addition to these considerations at the stage of identifying the poor, these authors propose adjustments to add the information of households in a population indicator, based on the FGT family of indices.



In particular, the AF method first computes the proportion of people who have been identified as multidimensionally poor in the population. This is the headcount ratio of multidimensional poverty H , also called the incidence of multidimensional poverty.

$$H = \frac{q}{n}$$

where q is the number of households identified as multidimensionally poor using the dual cutoff and n is the total number of households. Then, the average share of weighted indicators in which poor people are deprived is computed. This entails adding up the deprivation scores of the poor and dividing them by the total number of poor people. This is the intensity of multidimensional poverty A , also sometimes called the breadth of poverty.

$$A = \sum_{i=1}^n c_i(k) / q$$

This partial index conveys relevant information about multidimensional poverty, in that households that experience simultaneous deprivations in a higher fraction of dimensions have a higher intensity of poverty and are poorer than others having a lower intensity. Finally, the M_0 is computed as the product of the two previous partial indices: $H \times A$. Analogously, it can be obtained as the mean of the vector of deprivation scores, which is also the sum of the weighted deprivations that poor people experience, divided by the total population. This means that the final measure M_0 considers the headcount of poverty in the traditional way but adjusts it by the intensity of poverty to get a more complete picture of poverty. This correction allows the indicator to verify the multidimensional monotonicity property¹⁸ (which is not satisfied with the rate of incidence). More formally,

$$M_0 = \mu(c(k)) = \frac{1}{n} \sum_{i=1}^n c_i(k)$$

¹⁸ The multidimensional monotonicity implies that if a poor household starts to suffer hardships in an indicator in which it previously did not, global poverty should increase. In the traditional incidence rate this is not verified, as being deprived in at least one dimension is sufficient to classify a household as poor.

Note that the deprivations experienced by people who have not been identified as poor (i.e. those whose deprivation score is below the poverty cutoff, k) are censored, hence not included; this censoring of the deprivations of the non-poor is consistent with the property of ‘poverty focus’ which—analogue to the unidimensional case—requires a poverty measure to be independent of the achievements of the non-poor. For further discussion, see Alkire and Foster (2011).

The measures of the AF family satisfy many of the desirable properties for poverty measures. Several properties are key for policy. The first is decomposability, which allows the index to be broken down by population subgroup (such as region, gender or ethnicity) to show the characteristics of multidimensional poverty for each group. All AF measures satisfy population subgroup decomposability. Thus, the poverty level of a society is equivalent to the population-weighted sum of subgroup poverty levels, where subgroups are mutually exclusive and collectively exhaustive of the population.

All AF measures can also be unpacked to reveal the dimensional deprivations contributing the most to poverty for any given group. This second key property—post-identification dimensional breakdown—is not available with the standard headcount ratio and is particularly useful for policy.

All AF measures also have intuitive interpretations. The Adjusted Headcount Ratio reflects the proportion of weighted deprivations the poor experience in a society out of the total number of deprivations this society could experience if all people were poor and were deprived in all dimensions. The term ‘adjusted’ refers to the fact that all measures incorporate the intensity of multidimensional poverty—which is key to their properties.

Additionally, while each AF measure offers a summary statistic of multidimensional poverty, they are related to a set of consistent and intuitive partial indices, namely, poverty incidence (H), intensity (A), and a set of subgroup poverty estimates and dimensional deprivation indices (which in the case of the MO measure are called censored headcount ratios) and their corresponding percent contributions. Each measure can be unfolded into an array of informative indices.

Among the AF class of measures, the MO measure is particularly important because it can be implemented with ordinal data. This is critical for real-world applications. It is relevant when poverty is viewed from the capability perspective, for example, since many key functionings are commonly measured using ordinal variables. The MO measure satisfies the ordinality property. This means that for any monotonic transformation of the ordinal variable and associated cutoff, overall poverty as estimated by MO will not change. Moreover, MO has a natural interpretation as a measure of ‘unfreedom’ and generates a partial ordering that lies between first- and second-order dominance.

SUBGROUP DECOMPOSITION

In developing multidimensional methods, we would not want to lose the useful properties that the unidimensional methods have successfully employed over the years. Prime among them is population subgroup decomposability, which posits that overall poverty is a population-share weighted sum of subgroup poverty levels. This property has proved to be of great use in analyzing poverty by regions, by ethnic groups, and by other subgroups defined in a variety of ways. The M0 measure, as well as the other measures, satisfies the population subgroup decomposability property, a property that is directly inherited from the FGT class of indices (Foster, Greer, and Thorbecke, 1984).

Population subgroup decomposability allows us to understand and monitor the subgroup levels and compare them with the aggregate M0. The population share and the achievement matrix of subgroup l are denoted by $v_l = n_l/n$ and X^l , respectively. We express the overall M0 as

$$M_0(X) = \sum_{l=1}^m v^l M_0(X^l)$$

Given the additive form of this equation, it is also possible to compute the contribution of each subgroup to overall poverty. Let us denote the contribution of subgroup l to overall poverty by D_l^0 , which is formulated as

$$D_l^0 = v^l \frac{M_0(X^l)}{M_0(X)}$$

Note that the contribution of subgroup l to overall poverty depends both on the level of poverty in subgroup l and on the population share of the subgroup. Whenever the contribution to poverty of a region or some other group greatly exceeds its population share, this suggests that there is a seriously unequal distribution of poverty in the country, with some regions or groups bearing a disproportionate share of poverty. Clearly, the sum of the contributions of all groups needs to be 100%.

DIMENSIONAL BREAKDOWN

A multidimensional poverty measure that satisfies the dimensional breakdown property can be expressed as a weighted sum of the dimensional deprivations after identification. The M0 satisfies the dimensional breakdown property and thus can also be expressed as a weighted sum of post-identification dimensional deprivation, which in the particular case of M0 we refer to as the censored headcount ratio.

Why is this property useful? This property allows one to analyze the composition of multidimensional poverty. For example, Alkire and Foster (2011), after decomposing overall poverty in the United States by ethnic group, break the poverty within those groups down by dimensions and examine how different ethnic groups have different dimensional deprivations, i.e., different poverty compositions.

The censored headcount ratio of an indicator is defined as the percentage of the population who are both multidimensionally poor and simultaneously deprived in that indicator. Formally, we denote the j^{th} column of the censored deprivation matrix $g^0(k)$ as $g_{\cdot j}^0(k)$ and the mean of the column for that chosen indicator j as

$$h_j(k) = \frac{1}{n} \sum_{i=1}^n g_{ij}^0(k)$$

We define $h_j(k)$ as the censored headcount ratio of indicator j . What is the interpretation of? The censored headcount ratio $h_j(k)$ is the proportion of the population that are identified as poor ($c_i \geq k$) and are deprived in indicator j .

The additive structure of the M0 measure allows it to be expressed as a weighted sum of the censored headcount ratios, where the weight on indicator j is the relative weight assigned to that indicator.

$$M_0 = \mu(c(k)) = \frac{1}{n} \sum_{i=1}^n c_i(k) = \frac{1}{n} \sum_{i=1}^n \sum_{j=1}^d w_j g_{ij}^0(k)$$

$$M_0 = \sum_{j=1}^d w_j \left[\frac{1}{n} \sum_{i=1}^n g_{ij}^0(k) \right] = \sum_{j=1}^d w_j h_j(k)$$

Analyses based on the censored headcount ratios can be complemented in an interesting way by considering the percentage contribution of each indicator to overall poverty. The censored headcount ratio shows the extent of deprivations among the poor but not the relative value of the indicators. Two indicators may have the same censored headcount ratios but very different contributions to overall poverty. This is because the contribution not only depends on the censored headcount ratio but also on the weight or value assigned to each indicator. Let us denote the contribution of indicator j to the M_0 by ϕ_j^0 . Then, the contribution of indicator j for poverty cutoff k is given by

$$\phi_j^0(k) = w_j \frac{h_j(k)}{M_0}$$

for each $j = 1, \dots, d$. Whenever the contribution to poverty of a certain indicator greatly exceeds its weight, there is a relatively high censored headcount in this indicator. The poor are more deprived in this indicator than in others. Clearly, the sum of the contributions of all indicators is 100%. The censored headcount ratios and the percentage contributions have policy relevance for understanding the composition of poverty in different regions.

The uncensored headcount ratio of an indicator is defined as the proportion of the population that is deprived in that indicator. It aggregates deprivations pertaining to the poor (censored headcount) with deprivations among the non-poor. The uncensored headcount ratio of indicator j is computed from the j th column $\mathbf{g}_{.j}^0$ of the uncensored deprivation matrix $\mathbf{g}^0$. We denote the mean of the column vector as

$$\mathbf{g}_{.j}^0 \text{ by } h_j = \frac{1}{n} \sum_{i=1}^n g_{ij}^0$$

Therefore, h_j is the uncensored headcount ratio of indicator j .

The censored headcount ratio may differ from the uncensored headcount ratio except when the identification criterion used is union. In this case, a person is identified as poor if the person is deprived in any dimension, so no deprivations are censored. Thus, the censored and uncensored headcount ratios are identical. In every other case, the censored headcount ratio of an indicator can never exceed the uncensored headcount ratio.

EXAMPLE OF THE AF METHOD

Suppose there is a hypothetical society containing four people and multidimensional poverty is analyzed using four indicators: income, years of education, Body Mass Index (BMI), and access to improved sanitation. The 4x4 matrix X contains the achievements of the four people in the four indicators.

	Income	Years of Schooling	Malnourished	Access to Improved Sanitation	
$X =$	700	14	No	Yes	Person 1
	<u>300</u>	13	No	<u>No</u>	Person 2
	<u>400</u>	<u>3</u>	<u>Yes</u>	<u>No</u>	Person 3
	800	<u>1</u>	No	Yes	Person 4
$z =$	(500	5	No	Yes	)

For example, the income of Person 3 is 400 Units, whereas Person 4's is 800 Units. Person 1 has completed 14 years of schooling, whereas Person 2 has completed thirteen years of schooling. Person 3 is the only person who is malnourished of all four persons. Two persons in our example have access to improved sanitation. Thus, each row of matrix X contains the achievements of each person in each of the four indicators. The deprivation cutoff vector is denoted by $z = (500, 5, \text{not malnourished}, \text{has access to improved sanitation})$, which is used to identify who is deprived in each indicator. The achievement matrix X has three people who are deprived (see the underlined entries) in one or more indicators. Person 1 has no deprivation at all.

Based on the deprivation status, we construct the deprivation matrix g_0 , where a deprivation status score of 1 is assigned if a person is deprived in an indicator and a status score of 0 is given otherwise.

	Income	Years of Schooling	Malnourished	Access to Improved Sanitation	
$g_0 =$	0	0	0	0	Person 1
	1	0	0	1	Person 2
	1	1	1	1	Person 3
	0	1	0	0	Person 4
$w =$	(0.25	0.25	0.25	0.25	)

All indicators are equally weighted and thus the weight vector is $w = (0.25, 0.25, 0.25, 0.25)$. We then apply these weights to the deprivation matrix to obtain the weighted deprivation matrix. The weighted sum of these status scores is the deprivation score (c_i) of each person. For example, the first person has no deprivation and so the deprivation score is 0, whereas the third person is deprived in all indicators and thus has the highest deprivation score of 1. Similarly, the deprivation score of the second person is 0.5 ($0.25 + 0.25$).

Income	Years of Schooling	Malnourished	Access to Improved Sanitation	Deprivation score vector
0	0	0	0	0
0.25	0	0	0.25	0.5
0.25	0.25	0.25	0.25	1
0	0.25	0	0	0.25

The union identification approach identifies a person as poor if the person is deprived in any of the four indicators. In that case, three of the four people in this example are identified as poor (i.e., persons 2, 3 and 4). On the other hand, the intersection approach requires that a person is identified as poor if the person is deprived in all indicators. In that case, only one of the four people is identified as poor in this case (i.e., person 3). An intermediate approach sets a cutoff between the union and intersection approaches, say, $k = 0.5$, which is equivalent to being deprived in two of four equally weighted dimensions. This strategy identifies a person as poor if the person is deprived in half or more of weighted indicators, which in this case means that two of the four people are identified as poor (i.e., persons 2 and 3).

Once the poor have been identified, the weighted deprivation matrix is censored so that the measure can focus only on the deprivations of the poor – that is, deprivations of those identified as non-poor are replaced with a zero. This leads to the censored deprivation matrix and the censored deprivation score, as shown below for $k = 0.5$.

	Income	Years of Schooling	Malnourished	Access to Improved Sanitation	Deprivation score vector
$g_0(k) =$	0	0	0	0	0
	0.25	0	0	0.25	0.5
	0.25	0.25	0.25	0.25	1
	0	0	0	0	0

Note that there is one case where the censoring is not relevant: when the poverty cutoff corresponds to the union approach, then any person who is deprived in any dimension is considered poor and the censored and original matrices are identical.

As discussed above, the headcount ratio H is the proportion of people who are poor, which is two out of four persons in the above matrix. That is, $H = 2/4 = 1/2$ or 50%.

The intensity A is the average deprivation share among the poor, which in this example is the average of 0.5 and 1 (i.e., the deprivation scores of the two people that are poor, persons 2 and 3). That is, $A = 0.75$ or 75%.

It is easy to see that the multidimensional headcount ratio $M0 = H \times A = 0.5 \times 0.75 = 0.375$. It is also straightforward to verify that $M0$ is the average of all elements in the censored deprivation score vector $c(k)$, i.e., $M0 = (0 + 0.5 + 1 + 0)/4 = 0.375$. Analogously, it is equivalent to compute as the weighted sum of deprivation status values divided by the total number of people: $M0 = (0.25 \times 2 + 0.25 \times 1 + 0.25 \times 1 + 0.25 \times 2)/4 = 0.375$.

Following the explanations above, the analysis can be completed by computing decompositions by populations subgroups and dimensional breakdowns.



ANNEX 5: REDUNDANCY

When creating the MPI, the redundancy of indicators should be analysed because it is desirable that there is no high correlation or that two indicators do not capture the same phenomenon. To evaluate and rule out these cases, OPHI proposes a measure of overlap or redundancy, P , which provides clear and accurate information for indicator selection (OPHI-UNDP, 2019; OPHI, 2015).

The formula for obtaining the value of P is denoted in the following formula (OPHI-UNDP, 2019):

$$P = \frac{p_{11}^{jj'}}{\min[p_{+1}^{j'}, p_{+1}^j]}; 0 \leq P \leq 1$$

Where:

$p_{11}^{jj'}$ Number of households deprived in both indications.

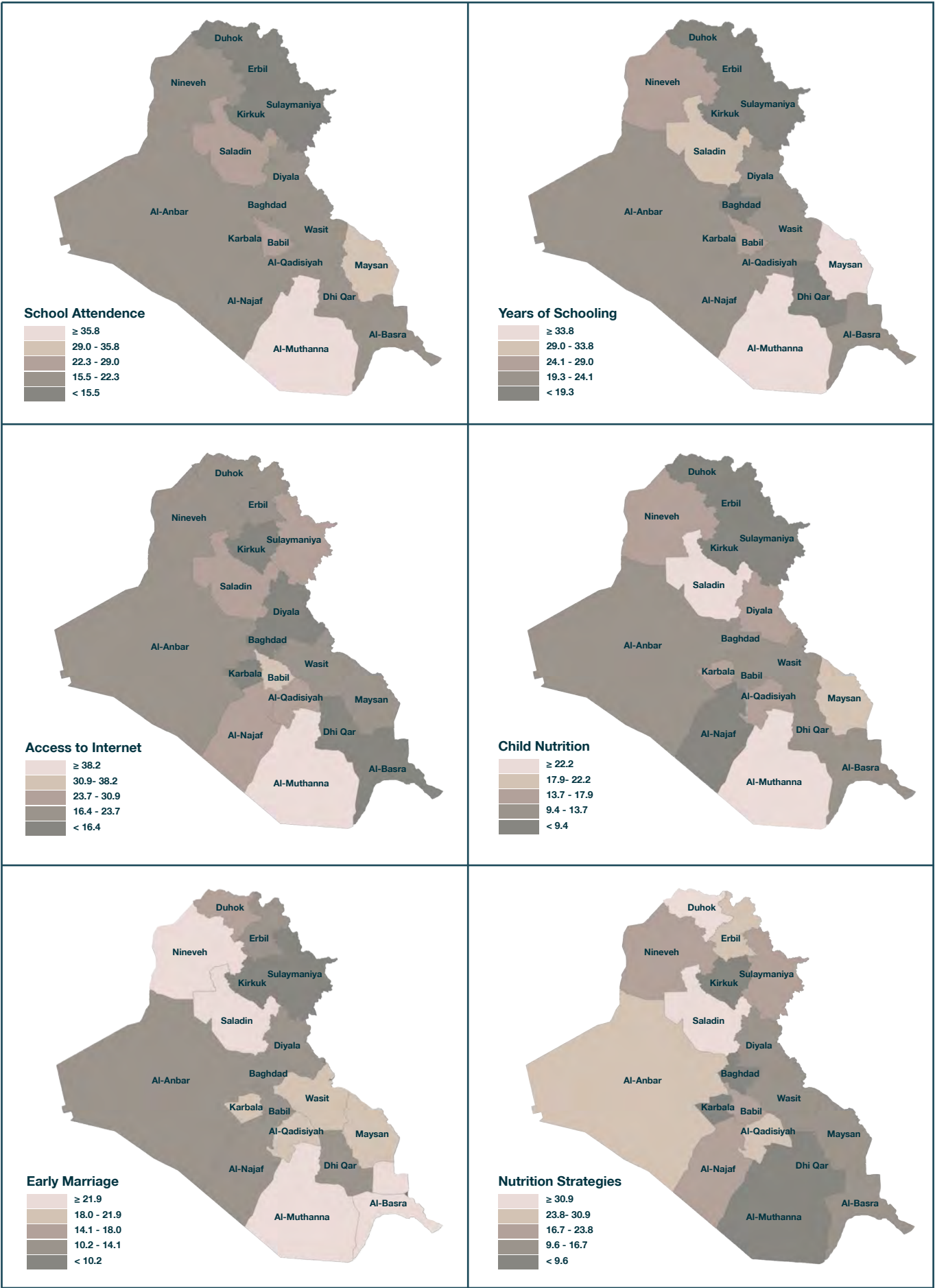
$p_{+1}^{j'}$ Total households deprived in indicator j'

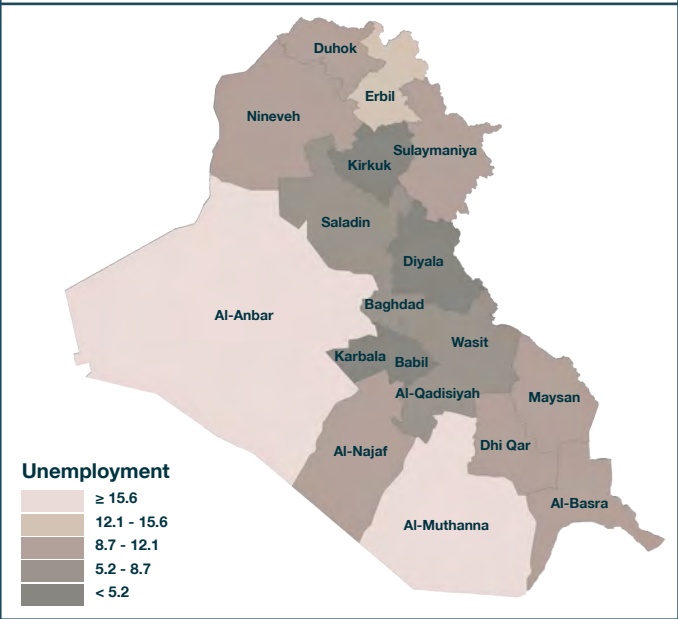
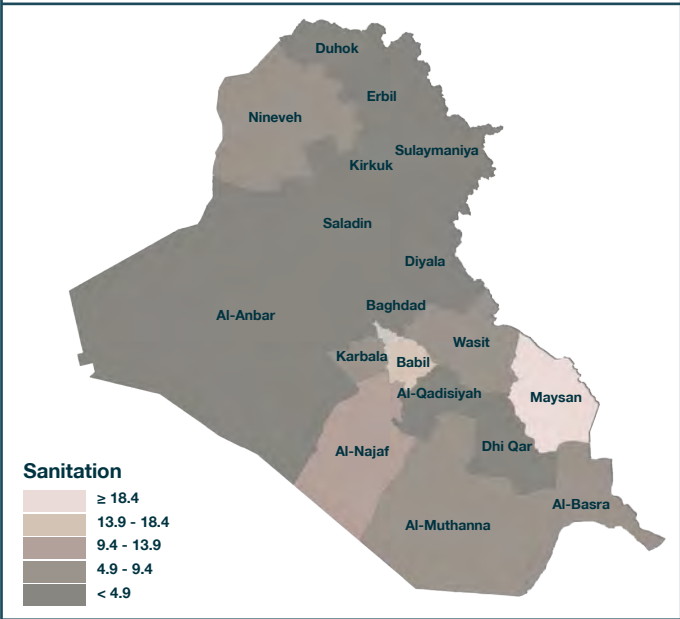
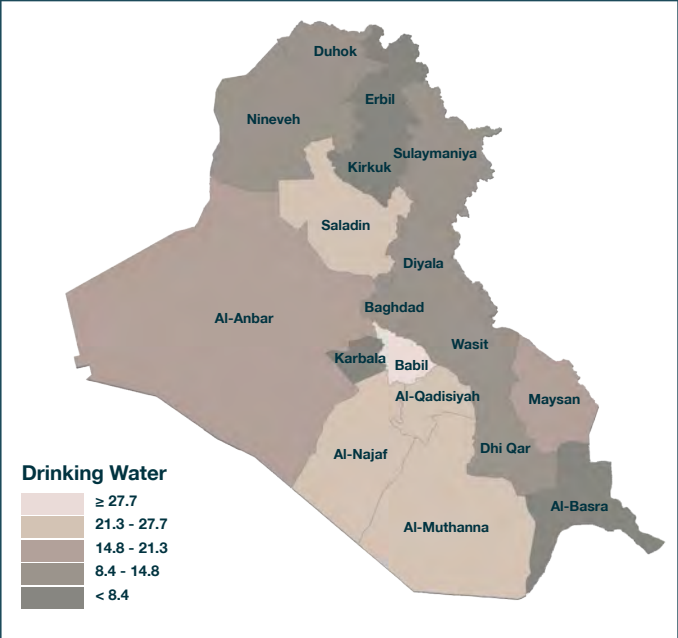
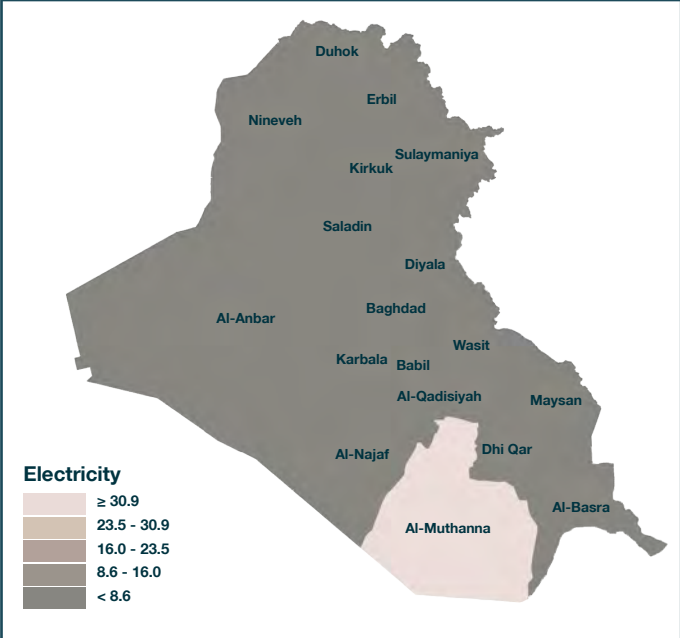
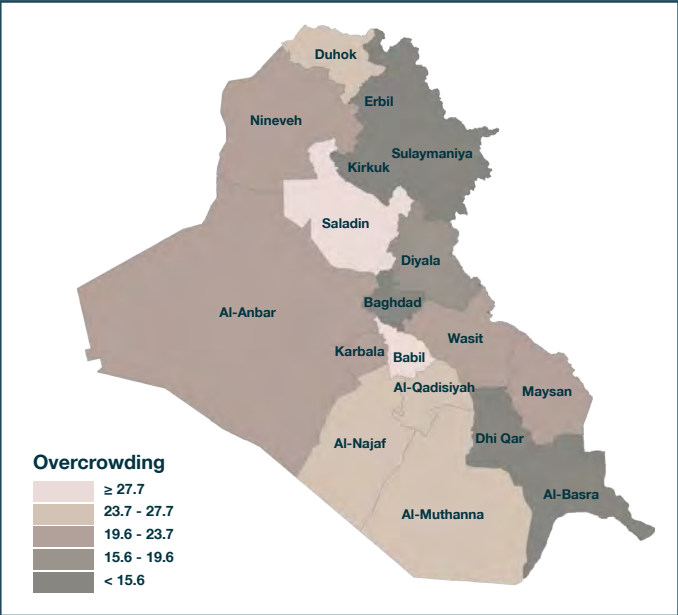
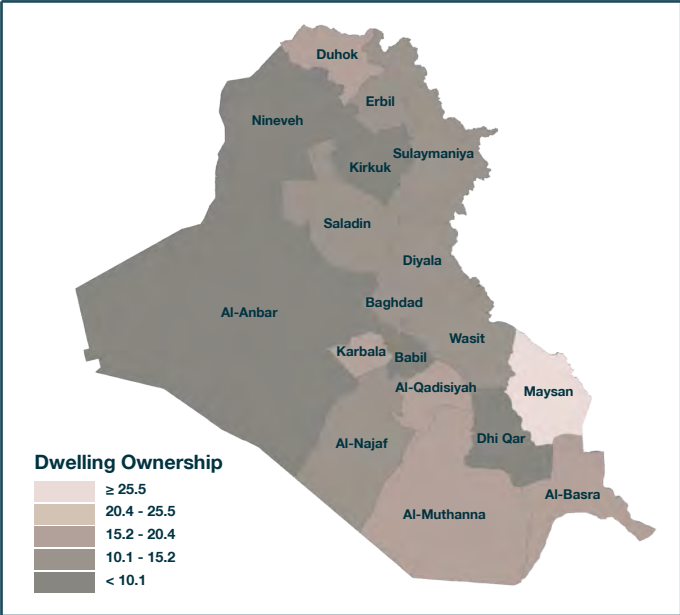
p_{+1}^j Total households deprived indicator j

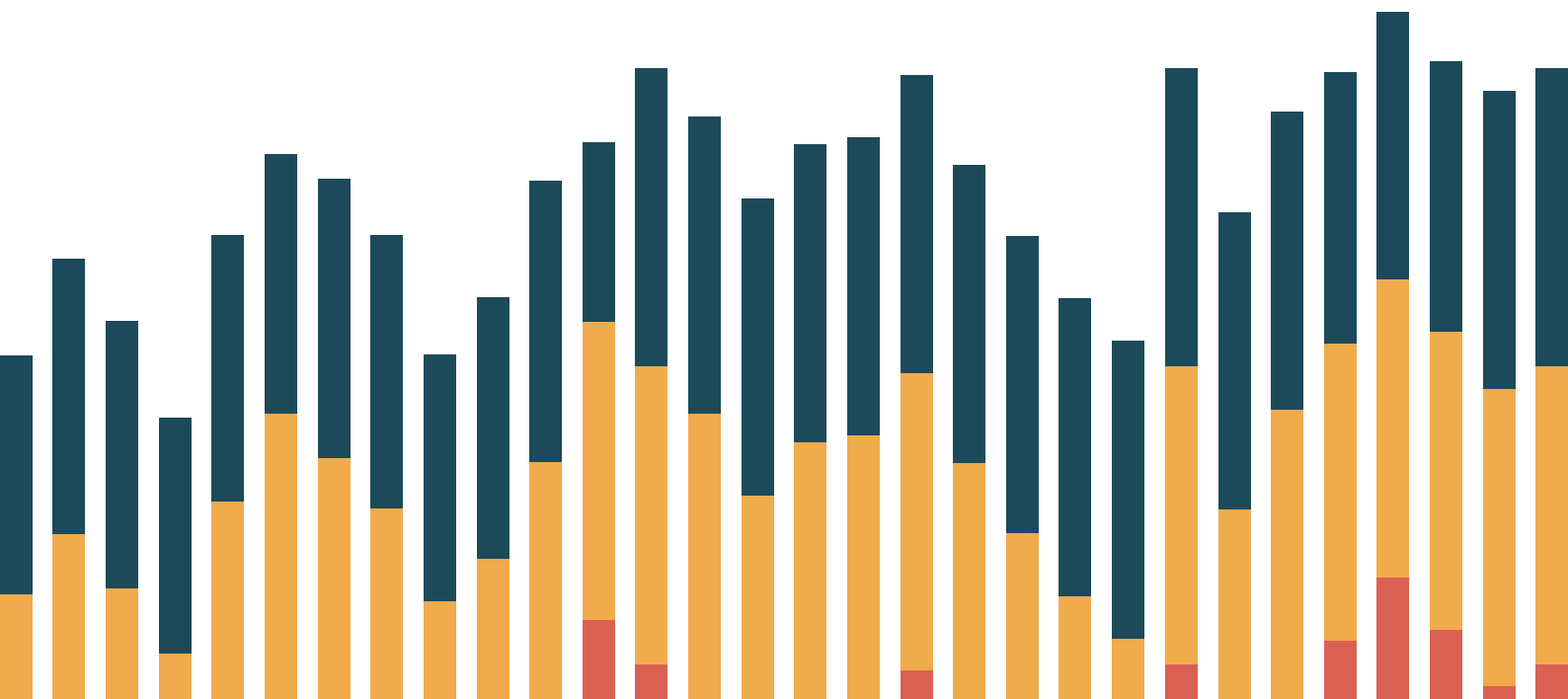
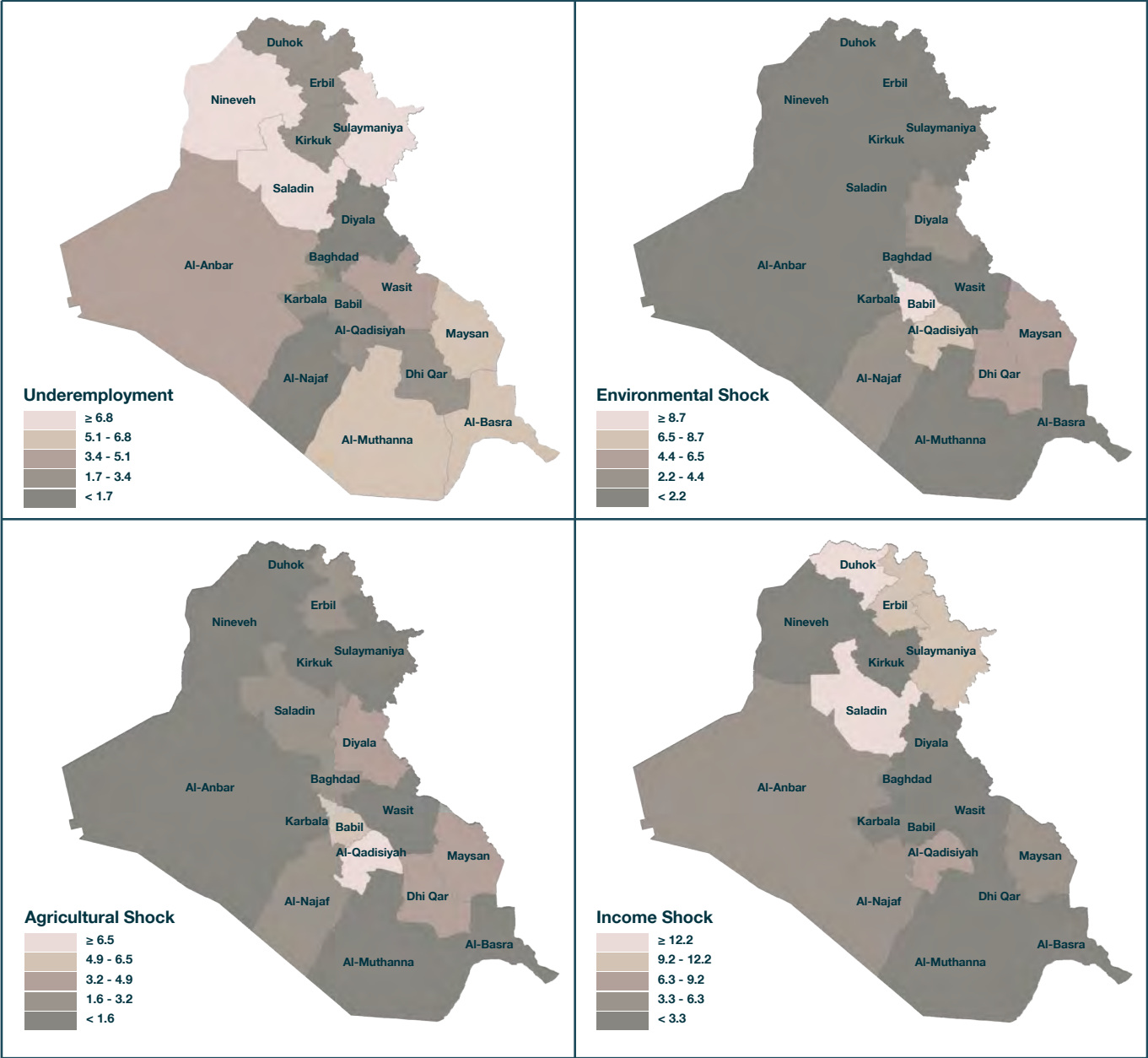
The value of P assesses the overlaps between deprivations as a proportion of the minimum of the marginal deprivation rates. This value varies between zero and one: zero means that no deprivation observations in one indicator are also found in the other, and one means that all people deprived in one indicator are also deprived in the other; If the redundancy is greater than or equal to 0.9 both in one period and over time, it is suggested that one of the two indicators be assessed and discarded.



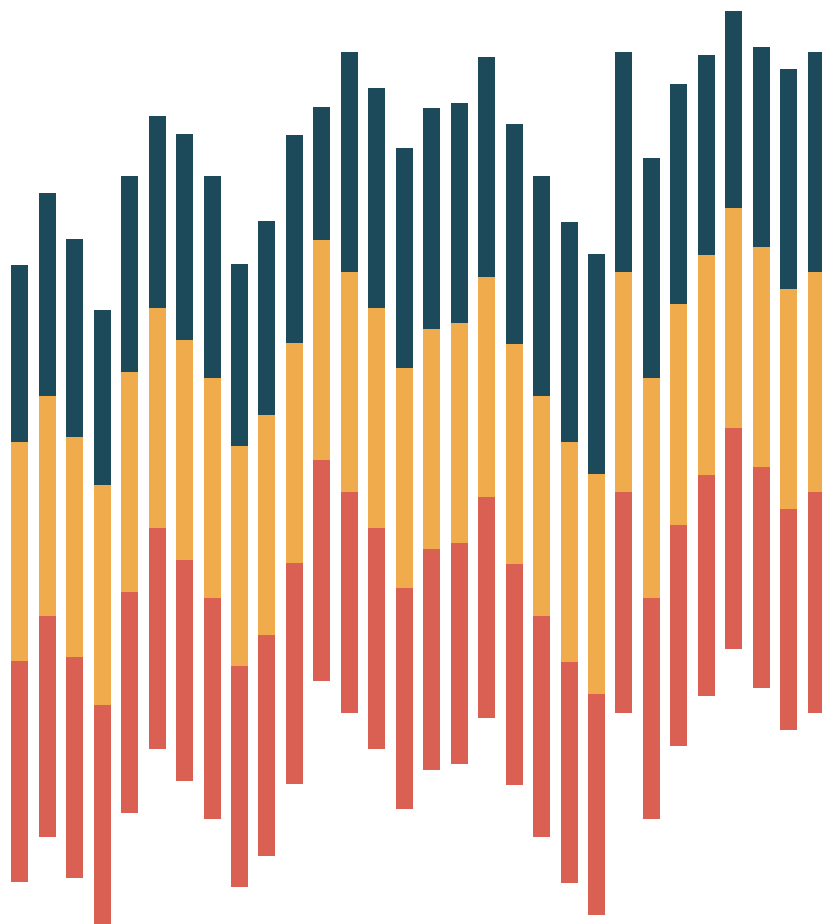
ANNEX 6: MAPS OF CENSURED HEADCOUNT RATIOS BY GOVERNORATE (%)

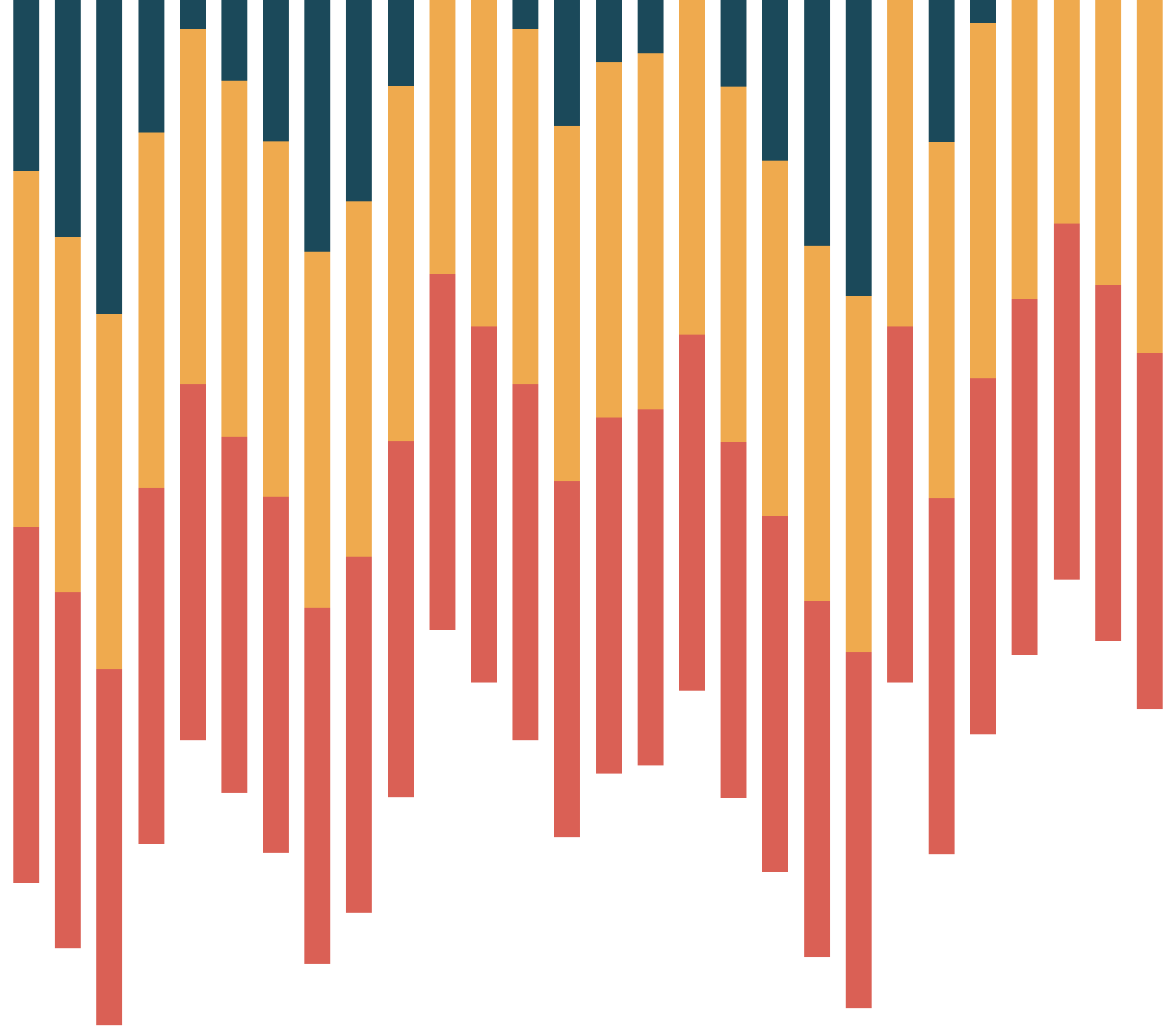












Since 2011, Iraq has been included in the global Multidimensional Poverty Index (global MPI), computed by OPHI and UNDP and reported in the Global Human Development Report, using data from MICS 2006, 2011, and 2018.



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