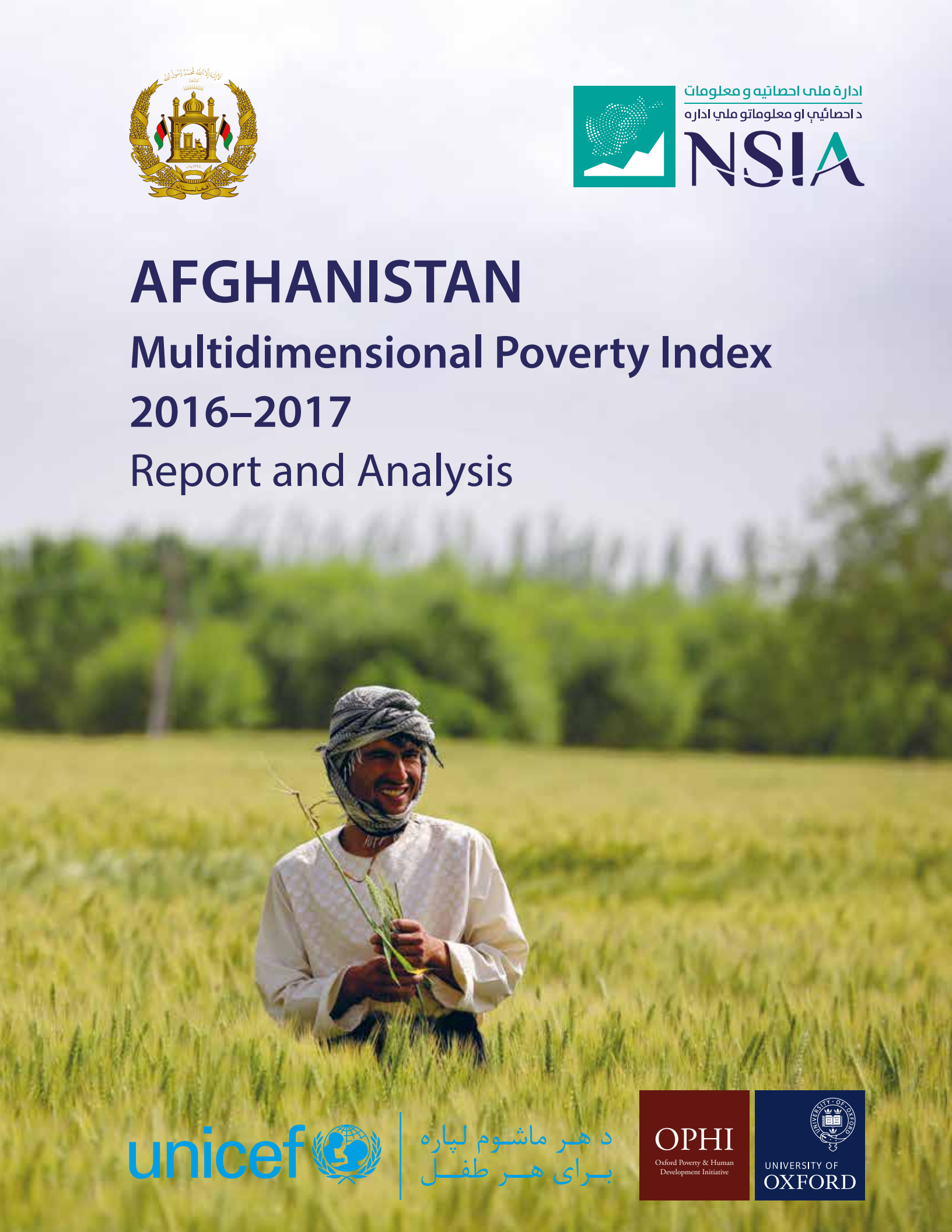
ادارة ملی احصائیه و معلومات
د احصائیې او معلوماتو ملي اداره
NSIA

AFGHANISTAN

Multidimensional Poverty Index 2016–2017

Report and Analysis



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Afghanistan Multidimensional Poverty Index 2016–2017: Report and Analysis

The Afghanistan Multidimensional Poverty Index 2016–2017 was implemented by the National Statistics and Information Authority (NSIA) of the Government of the Islamic Republic of Afghanistan with technical assistance from the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford.

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Foreword

THE NATIONAL STATISTICS AND INFORMATION AUTHORITY (NSIA) has been authorized by the High Council on Poverty Reduction to publish a national Multidimensional Poverty Index of Afghanistan (A-MPI). The A-MPI complements the monetary poverty measure and uncovers the deprivations experienced by the Afghan people in various aspects of their lives.

The report is produced in accordance with the National Priority Programs (NPP) and Afghanistan National and Peace Development Framework (ANPDF). Both give primacy to making integrated and evidence-based policies in order to overcome the poverty, deprivations, and related consequences that the surviving population of the country have suffered for decades. This report vigorously helps the government of Afghanistan with budget allocation, policy coordination, and integrated policies.

Following the High Council on Poverty Reduction's authorization, the current report is the result of the efforts and collaboration of the NSIA and Oxford Poverty and Human Development Initiative (OPHI) towards publishing the first national MPI for Afghanistan. OPHI's training programs, technical support, and in-person involvements were key to producing this report.

NSIA is grateful and convinced that the results of the A-MPI will be instrumental for developing effective poverty reduction policies for the people of Afghanistan.

Ahmad Jawed Rasuli
Director General
National Statistics and Information Authority

MULTIDIMENSIONAL POVERTY in Afghanistan is a situation in which people are affected by multiple and intersecting deprivations in health, education, living standards, employment, and security.

The Afghanistan Multidimensional Poverty Index (A-MPI) is an official permanent poverty measure that was developed by the National Statistics and Information Authority (NSIA) under the direction of the Islamic Government of Afghanistan. The A-MPI aims to guide policies that will accelerate the reduction of interlinked deprivations. Using data from the Afghanistan Living Conditions Survey (ALCS) 2016–17, the A-MPI finds that more than half of the population are multidimensionally poor, but that one-third of MPI poor people are not income poor.

By providing one high-resolution picture of people's lives, the A-MPI will henceforth monitor poverty and hence provide incentives for accelerating poverty reduction.

Hasibullah Mowahed

Deputy Director General
National Statistics and Information Authority

IT IS AN HONOUR to have been able to collaborate with and learn from our colleagues at NSIA who designed the A-MPI. Based on data from ALCS 2016–17, the A-MPI is innovative in having a gendered education indicator and cutting-edge indicators on employment and security. It also includes an analysis of child poverty.

The aim is for the A-MPI to provide a prominent tool to coordinate the actors and programmes that address distinct forms of poverty, bringing these into a coherent whole and creating a common momentum.

The A-MPI will also inform decentralized activities with detailed data on provincial challenges. When the A-MPI is updated in future surveys, it will enable actors to celebrate visible progress and will provide updated evidence for high-impact integrated policy interventions.

Sabina Alkire

Director
Oxford Poverty and Human Development Initiative (OPHI), University of Oxford

Acknowledgements

We are deeply grateful to His Excellency the President and to members of the High Council for Poverty for the trust vested in the National Statistics and Information Authority to complete the important work of establishing Afghanistan's first multidimensional poverty index (MPI).

The design of the Afghanistan MPI (A-MPI) was based on the Afghanistan National Peace and Development Framework and also on consultations with many ministries. We are particularly grateful to the Ministry of Economy, Ministry of Finance, Ministry of Public Health, Ministry of Labor and Social Affairs, Ministry of Rural Rehabilitation and Development, and Ministry of Education, for their participation in MPI-related consultations.

We are grateful to colleagues at the Oxford Poverty and Human Development Initiative at the University of Oxford, particularly Ricardo Nogales, and from the Multidimensional Poverty Peer Network for sharing technical details on MPI computations as well as case studies of how other countries implemented national MPIs as permanent official statistics and used national MPIs to shape policies that accelerate poverty reduction.

Our genuine and warm thanks are offered to the international donor community and the World Bank and European Commission for prior investments in data and social policies and to UNICEF for providing solid cross-cutting support to a nationally owned and nationally computed A-MPI that can be used to make policies more integrated and more effective.

Executive Summary

This report presents the Islamic Republic of Afghanistan's MPI (A-MPI), which is a new, official, and permanent statistic of multidimensional poverty that complements the monetary poverty indicator. The A-MPI reflects the priorities present in the *Afghanistan National Peace and Development Framework (ANPDF) 2017 to 2021*. In the ANPDF, poverty is recognised to be multidimensional, and, furthermore, poverty reduction is taken to be a central priority. A key priority of the ANPDF is to overcome policy fragmentation and link evidence and policy in an integrated manner. The MPI is an appropriate tool to support the ANPDF because it has been used in many countries to improve policy design, coordination, and budget allocation, as well as the monitoring and evaluation of ambitious targets to accelerate poverty reduction.

The A-MPI is based on the data from the Afghanistan Living Conditions Survey (ALCS) 2016–17, conducted by the National Statistics and Information Authority (NSIA).

The 2016–17 A-MPI value is 0.272, indicating that poor people in Afghanistan experience more than 27% of the deprivations that could be faced if all the population were deprived in all indicators. The multidimensional poverty headcount ratio stands at 51.7%. The A-MPI complements Afghanistan's national monetary poverty measure. We find that the people who are monetarily poor are not necessarily multidimensionally poor. In fact, while 51.7% of people are MPI poor and 54.5% are monetary poor, only about 36.3% of people in Afghanistan are poor by both measures. Both measures are needed to adequately illuminate poverty in its many forms and dimensions.

The design of the A-MPI draws directly on priorities as articulated in our pivotal national document, ANPDF, and its associated National Priority Programmes, as well as on extensive consultations across government ministries and leaders.

The consultations included individual meetings with experts and roundtables convened by both the NSIA and the Ministry of Economy (MOEC). A week-long training was held at NSIA (previously known as the Central Statistics Organisation [CSO]), and, subsequently, two lead statisticians joined an intensive training on multidimensional poverty measurement and analysis given by the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford. A further workshop on the use of the national MPI for policy – covering topics such as budgeting, policy coordination, and sectoral policies – was also organised by NSIA. Candidate measures were developed using ALCS data and were thoroughly analysed. The High Council on Poverty Reduction selected one of these and authorized NSIA to publish a national MPI for Afghanistan within six months, using the same five dimensions as the chosen measure. Extensive work was undertaken to improve certain indicators as well as to examine the final measure to ensure that it was robust to different plausible specifications and appropriate as a policy tool.

The A-MPI comprises five dimensions and 18 indicators that were selected in a consultative process with high-level policymakers in the country and technical experts. It is a reflection of policy priorities in the country and the data available in the ALCS 2016–17.

The A-MPI uses an equal nested-weight scheme, assigning a weight of 1/5 to each of the five dimensions of education, health, living standards, work, and shocks. For the dimensions of education and shocks, two indicators have a weight equal to 1/20; however, the indicators of school attendance and security have a weight equal to 1/10. Child school attendance and adult years of schooling (male and female combined) are roughly equal in importance, and gendered adult

schooling indicators illuminate adult outcomes. Finally, in the case of the shocks dimension, security in the context of Afghanistan covers the vital aspect of personal security from violence, whereas production and income are related to security from sudden economic hardship. A person is identified as poor if they are deprived in at least 40% or more of the dimensions or weighted indicators. The A-MPI was assessed and found to be technically robust to a plausible range of weights and poverty cut-offs.

In 2016–17, it is estimated that 51.7% of Afghans live in multidimensional poverty. On average, the intensity of multidimensional poverty is 52.5%, which means that, on average, Afghans are deprived in 52.5% of the 18 weighted indicators that form the A-MPI. The A-MPI, estimated as the product of the percentage of poor people and the average intensity of poverty, is 0.272.

An MPI of 0.272 means that in 2016–17, poor people experienced 27.2% of the deprivations that could be experienced if all Afghans were poor and deprived in each indicator. Deprivations in terms of school attendance (14.1%) and assisted delivery (12.5%) contribute the most to the value of the A-MPI. Furthermore, although the incidence of MPI and monetary poverty are similar, the overlap between the two measures is not perfect. In particular, nearly 16% of the population are not monetary poor but are multidimensionally poor. Thus, the lens of the A-MPI is a useful complement to the monetary approach to poverty because it makes visible both people who are poor but not captured by a monetary metric and because it shows concretely how they are poor across 18 indicators. The shape and composition of multidimensional poverty varies widely across the country. The urban poverty rate is 18.1%, whereas the rural rate is 61.1%. It is estimated that 89% of the Kuchi population live in multidimensional poverty. Stark differences are found across provinces too. While 14.7% of the population in Kabul are poor, the poverty rate reaches 80.2% and 85.5% in Nooristan and Badghis. However, considering the size of the population in each province, Herat and Nangarhar are home to the highest number of poor people.

Multidimensional poverty shows different patterns across an array of socioeconomic characteristics. While nearly 33.2% of people living in households of four members or less are poor, 60.2% of people living in households with 15 or more members are poor. Multidimensional poverty is also higher in households that lack education. More than 60% of people live in households where the head has no education, while only one in four persons are found to be poor when the head of house has a secondary education or higher. In terms of age groups, multidimensional poverty is most prevalent among children. Fully, 56.4% of children aged 0–17 are poor, while less than 49% of people aged 18 and above are MPI poor.

The key motivation for designing an MPI in Afghanistan is to guide evidence-based policies that accelerate poverty reduction. Among the salient policy recommendations is a need to focus on children, as they are a particularly vulnerable group, whose high poverty rates also pose additional challenges for the whole country in the future. Actions to improve children's health, education, employment opportunities, and survival chances also affect their potential in the future and hence should be a priority in intersectional development programs. Another key observation is that deprivations are interlinked, so an emphasis on integrated policies is appropriate. Improvements in terms of school attendance, assisted delivery, and food security clearly should be priority components of these programs.

The A-MPI can also guide evidence-based budgeting across key social policies and infrastructure investments. The budget allocations should reflect the level of poverty while also rewarding good performance in poverty reduction in the most recent period, in order to create strong incentives for policy reduction. However, to create such incentives, the A-MPI must be updated frequently; thus, the questions used for MPI calculations – which are listed in the Appendix III – should be included in the Income and Expenditure and Labor force survey (IE&LS) and the Afghanistan Development Condition Surveys (ADCS). Frequent monitoring generates visibility, familiarity, and momentum to swiftly redress development gaps. Countries with frequent MPI monitoring, such as Colombia, which updates measures annually, have been able to reduce their MPI swiftly because the same budget envelope is spent more efficiently using the MPI evidence. Thus this document contains the MPI survey questions as an appendix in order that future surveys can easily incorporate them and provide a sustained assessment of the pace of future MPI reduction in Afghanistan.

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Contents

	Foreword	iii
	Acknowledgements	v
	Executive Summary	vi
I.	**INTRODUCTION**	1
II.	**METHODOLOGY**	3
2.1	Methodological Basis of the A-MPI	3
2.2	Design of the A-MPI	3
2.3	Data for Analysis: ALCS 2016–17	6
III.	**RESULTS**	7
3.1	Afghanistan's National MPI: Key Results	8
3.2	Disaggregation by Urban, Rural, and Kuchi Areas, and Provinces	9
3.3	Robustness of the Results to Alternative Poverty Cut-offs	17
3.4	Multidimensional Poverty and Monetary Poverty	20
3.5	Performance across Household Size	21
3.6	Performance according to Education of Household Head	23
IV.	**MPI AMONG CHILDREN AND OTHER AGE GROUPS**	26
V.	**NEXT STEPS**	33
	REFERENCES	35
	APPENDICES	37
Appendix I	Poverty Maps	37
Appendix II	The Multidimensional Poverty Index: An Adjusted Headcount Ratio	39
Appendix III	Questions Used for MPI Computations	41

I. Introduction

> "Poverty in Afghanistan is multidimensional: it varies by region, by gender, and by access to exit pathways."
>
> ANPDF 2017 to 2021

This report presents the Islamic Republic of Afghanistan's Multidimensional Poverty Index (A-MPI), which is a new, official, and permanent statistic of multidimensional poverty that complements the consumption poverty indicator.

The priority of poverty in all its forms: The move to develop a national MPI was motivated by priorities articulated in the *Afghanistan National Peace and Development Framework (ANPDF) 2017 to 2021*. In the ANPDF, poverty is recognized to be multidimensional. Hence that pioneering five-year strategic plan articulated the vision of Afghanistan's wellbeing and self-reliance in terms that were far wider than monetary measures alone. Furthermore, poverty reduction is taken to be a central priority: "The overarching goals of our government are to reduce poverty and improve the welfare of our people" (p. 4). The plan's components encompass jobs, security, infrastructure, health, education, service delivery, and technology. It is therefore natural that the traditional monetary poverty measure should now be complemented by a multidimensional poverty index that establishes and tracks progress in a cross-section of these non-monetary objectives.

Holistic policy: Furthermore, a key priority of the ANPDF is to link evidence and policy in an integrated rather than fragmented way. The ANPDF vision statement closes with the words: "Achieving these goals requires a collective effort to overcome fragmentation, increase accountability, and introduce proper policies for sustainable growth" (p. 3).

The national MPI has been used as a policy tool in many countries to date, starting with Mexico, Bhutan, and Colombia in 2009–11 and expanding from there to include over 18 countries. Learning from the observations, data, and analyses of members of the South-South Multidimensional Poverty Peer Network (MPPN), it has become apparent that, where the political will and organizational structures exist, a national MPI can be catalytic when it is used

- To **overcome fragmentation** – by making visible interconnections across indicators and providing an integrated metric that different ministries can directly affect and analyse;
- To **increase accountability** – by monitoring the trends in each component indicator over time, disaggregated by subnational region, and also monitoring the trends among the poor who are affected by at least 40% of possible deprivations at the same time;
- To **introduce appropriate policies** – by providing detailed and policy-salient information that can inform budget allocation by sector and region as well as just-in-time policy adjustments, targeting, and coordination across sectors and across levels of government.

As these needs are evident in Afghanistan, they are described more specifically below.

BUDGET ALLOCATION: The MPI functions as a headline indicator tracking outcomes of core programmes, ministries, and priorities. It is used in many other countries to inform budget allocation across sectors and subnational regions, and this consonance between budget and evidence was called for in the ANPDF, which states: "Aligning the Cabinet, policy priorities, and the budget is at the heart of our national development strategy. This will overcome the fragmentation of the past by using a holistic approach to turning policies into effective expenditures" (p. 12).

MAINSTREAMING AND INTEGRATING: The ANPDF also called for attention to be paid to how the language of and unwavering commitment to poverty in all its forms is mainstreamed across many government priorities, "All National Priority Programs should articulate their approach to reducing poverty and supporting policies on gender" (p. 12). And it recognised that "There has been an absence of poverty-focused investments over the long years of conflict" (p. 21).

CITIZEN ACTION: The National Citizens Charter, which enables communities to shape their own priorities and development responses, and whose leadership is affirmed in the ANPDF, is a key counterpoint and important conversation partner for work on multidimensional poverty because concerns about water, health, education (both access and quality), and electricity were already articulated and expressed in the Charter and are reflected in the national MPI. In addition, the actions of these communities have the potential to catalyse and accelerate multidimensional poverty reduction swiftly and definitively.

WOMEN AND CHILDREN: Naturally, a national poverty measure must cover and address all groups. Yet the need to empower women, whose leadership can effectively redress so many other deprivations, is presented in the ANPDF as fundamental to poverty reduction. Thus any measure of multidimensional poverty must be able to make visible the success of gendered policies. Further, it is recognized that child poverty is "particularly pernicious" (p. 7); hence a multidimensional poverty measure must be disaggregated to reflect these needs.

PROCESS OF DESIGNING AFGHANISTAN'S NATIONAL MPI: Based on the alignment between the ANPDF, with its multidimensional understanding of poverty, and an overwhelming national motivation to reduce poverty insofar as is possible between 2017 and 2021, the NSIA chose to develop the baseline measure from the Afghanistan Living Conditions Survey 2016–17 and then to update the survey(s) used to compute the A-MPI frequently in order that it might be used for change management and evidence-based policy adjustments. In addition, the public, disaggregated, and intuitive nature of the A-MPI is intended to make transparent the successes and challenges that people are experiencing across different regions and social groups in Afghanistan.

This document presents Afghanistan's national MPI. Its indicators were selected in order to provide clear insights as to how to design programs that deliberately target the poor and follow the national priority to reduce or eradicate multidimensional poverty. The A-MPI was created to be used in monitoring and evaluating plans and programs at the national and subnational level, as well as in policy design, targeting, and coordination.

II. Methodology

Afghanistan's national MPI is estimated using the Alkire-Foster (AF) method. This chapter presents this method in general terms along with the measure's design and the dataset used for its computation. In this chapter, we cover the following subjects:

2.1 Methodological basis of the A-MPI;

2.2 Design of the A-MPI;

2.3 Data for analysis: ALCS 2016–17.

2.1. METHODOLOGICAL BASIS OF THE A-MPI

The A-MPI is calculated using the AF method, which consists of counting the simultaneous deprivations that negatively affect a person's life. The AF method allows the construction of individual deprivation profiles that can then be used to identify multidimensionally poor people. The number of people living in multidimensional poverty and the intensity of their poverty are combined in the value of the MPI.

By applying this method, the A-MPI reflects simultaneous deprivations in the 18 indicators that were chosen based upon a detailed analysis of relevance as well as data availability. In order to identify whether or not a person in Afghanistan is deprived in an indicator, a deprivation cut-off was set for each indicator. This yields a set of 18 binary variables for every person, each one taking the value of 1 if the individual is deprived in that indicator and 0, otherwise.

Once the set of binary variables is calculated, each person is assigned a deprivation score denoted as c, indicating the proportion of deprivations weighted by the relative importance of each indicator in the structure of the MPI. The deprivation score c is defined to take values ranging between 0 (indicating that the person does not experience any weighted deprivations) and 1 (indicating that they experience weighted deprivations in all the 18 indicators).

In order to identify people who suffer multidimensional poverty in Afghanistan, the deprivation score c is compared to a poverty cut-off or the k-value. All people suffering deprivations in a number of weighted deprivations equal to or greater than this cut-off are identified as multidimensionally poor.

Once the poor people in Afghanistan are identified, the MPI is computed as the product of two component indices: the multidimensional headcount ratio and the intensity of multidimensional poverty.

> The **headcount ratio (H)** is the proportion of the population who are multidimensionally poor.
>
> The **intensity of poverty (A)** reflects the proportion of the weighted indicators in which, on average, multidimensionally poor people are deprived.
>
> The **MPI** combines these two aspects of poverty in the following way:
>
> **MPI = H x A**

It is important to note that the MPI can be equivalently computed as the weighted sum of censored headcount ratios – which show the percentage of people who are identified as poor and are also deprived in a particular indicator. Because of this structure, the MPI can be broken down by indicator to show the composition of multidimensional poverty. This feature of dimensional detail brings added policy relevance to the analysis.

2.2 DESIGN OF THE A-MPI

Afghanistan's national MPI uses a set of dimensions, indicators, and cut-offs that reflect its priorities as expressed in the ANPDF and the National Citizen's Charter (NCC), and via the consultations described in Chapter I.

TABLE 2.1 Dimensions, indicators, and weights of the A-MPI

Dimensions of Poverty	Indicator	Household is deprived if...	Weight
Health	Food security	There is no borderline or acceptable food consumption.	1/10
	Assisted delivery	Any woman who was pregnant in the last 5 years preceding the interview received fewer than 4 antenatal care visits OR the delivery did not take place at a health facility OR was not attended by a doctor or a nurse.	1/10
Education	School attendance	At least one child aged 7–16 is not attending school or never did.	1/10
	Female schooling	No woman aged 10+ has completed primary schooling or knows how to read and write.	1/20
	Male schooling	No man aged 10+ has completed primary schooling or knows how to read and write.	1/20
Living Standards	Access to water	They lack access to improved water sources.[1]	1/30
	Sanitation	They lack access to improved sanitation facilities.[2]	1/30
	Electricity	There is no adequate lighting source (i.e. there is no lighting, or it comes from candles or solid fuel)	1/30
	Cooking fuel	There are no adequate fuel cooking sources (i.e. they use animal dung, crop residue or cooking is done in the dwelling using bushes, twigs, firewood or charcoal).[3]	1/30
	Housing	Dwelling is made of inadequate roof, floor or wall materials.[4]	1/30
	Asset ownership and agriculture	They own less than 3 assets (refrigerator, washing machine, vacuum cleaner, gas cylinder, iron, television, mobile, satellite dish, bicycle and motorbike) OR agricultural items (land and livestock).[5]	1/30
Work	Dependency	There is less than one household member who works for every 6 people.	1/20
	Unemployment	No one in the household is employed in the labour force.	1/20
	Underemployment	One or more people in the household are underemployed.	1/20
	Youth NEET	There are one or more people aged 17–24 who are not employed, and do not attend school or any training program.	1/20
Shocks	Production	They have experienced one or more of the following shocks, with a strong negative effect on household members: i) reduced drinking or agriculture water, ii) unusually high crop pests or disease, iii) severe loss of opium production, iv) unusually high livestock disease, v) reduced availability of grazing area or reduced availability of Kuchi migration route.	1/20
	Income	They have experienced one or more of the following shocks, with a strong negative effect on household members: i) increased food prices, ii) a reduction in household income or iii) a decrease in farm food prices.	1/20
	Security	One or more of the following situations apply: i) they have suffered violence or theft, ii) they live in a district rated as very insecure, iii) they are displaced or iv) they respond that the government's first priority should be to disarm local militia or to increase local security.	1/10

[1] Improved sources are those that have the potential to deliver safe water by nature of their design and construction. These include piped supplies and non-piped supplies (such as boreholes, protected wells and springs, rainwater and packaged or delivered water, e.g. by tanker trucks). Unimproved drinking water sources that do not protect against contamination are unprotected springs and wells. The category 'no service' identifies surface water, such as rivers, streams, irrigation channels and lakes.

[2] An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. These facilities include wet sanitation technologies (flush and pour flush toilets connecting to sewers, septic tanks or pit latrines) and dry sanitation technologies (ventilated improved pit latrines, pit latrines with slabs and composting toilets).

[3] The use of inadequate (solid) cooking fuels is a direct cause of household air pollution, and thus directly associated to respiratory diseases, disabilities and death.

[4] Adequacy is related to durability. Housing of which the outer walls, roof and floor are made of durable materials that protect its inhabitants from the extremes of climatic conditions, such as rain, heat, cold and humidity. Fired brick, concrete, mud bricks and stone are considered durable materials. For roofs, wood is regarded as durable.

[5] A person is identified as deprived in assets if their household owns less than three of the considered agricultural items.

Source: Author's calculations based on data from ALCS 2016–17.

2.2.1 Dimensions, indicators, and deprivation cut-offs

The A-MPI comprises five dimensions and 18 indicators that were selected in a consultative process with high-level policymakers in the country and technical experts. These choices reflect both policy priorities and data availability. The weights for each indicator, which mirror their relative importance in the MPI, were set based upon the same priorities (see Table 2.1).

The unit of identification for the A-MPI is the household. This approach assumes intra-household caring and sharing, and thus considers a household as a unit formed by individuals whose lives are deeply intertwined.

For instance, if one household member is unemployed, other household members are affected. Notice that this approach allows the measure to include indicators that are specific to certain age groups (such as school attendance or youth 'not in employment, education or training' [NEET]).

The unit of analysis, which is the unit for which results are reported and analysed, is the individual. This means that the headcount ratio is the percentage of individuals who are identified as poor.

2.2.2 Weights

The A-MPI uses an equal nested-weight scheme, assigning a weight of 1/5 to each of the five dimensions of education, health, living standards, work, and shocks. The five dimensions were approved by the High Council on Poverty, which also approved equal weights between each of them. The adopted scheme of equal weights for every dimension implies an identical relative importance for each one. Within the dimensions of health, living standards, and work each indicator is equally weighted. Each of the two health indicators has a weight of 1/10; each of the living standards indicators has a weight of 1/30; and each of the work indicators has a weight of 1/20. This is because the indicators were considered to be roughly similar in importance across the index. Within the dimensions

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of education and shocks, two indicators have a weight equal to 1/20; however, the indicators for school attendance and security have a weight equal to 1/10. Child school attendance and adult years of schooling (male and female combined) are roughly equal in importance, but gendered adult schooling indicators were created in order to illuminate gender disparities.

And in the case of shock, security in the context of Afghanistan covers the vital aspect of personal security from violence, whereas production and income cover security from sudden economic hardship. Robustness tests to weights are found in section 3.3.

2.2.3 Poverty and deprivation cut-offs

Two kinds of thresholds are used to decide whether a person is deprived and whether they are poor: (1) an indicator-specific poverty cut-off (deprivation cut-off, shown in Table 2.1), according to which a person is considered deprived in each indicator if their achievement falls below the cut-off, and (2) a cross-indicator cut-off (or poverty cut-off), which sets the minimum share of deprivations (or deprivation score) needed for a person to be considered poor. In Afghanistan, the poverty cut-off or the k-value was set at 40%, based on the reasoning that this threshold is equivalent to being deprived in two or more dimensions, or the equivalent of weighted indicators. It is thus aligned with the notion of poverty in multiple dimensions. In the MPI estimation process, all poverty cut-offs were applied and Figure 3.8 demonstrates results for all poverty cut-offs by province.

2.3 DATA FOR ANALYSIS: ALCS 2016–17

The data used for the national poverty measure is from the ALCS 2016–17, which is the longest-running and most comprehensive source of information about the living conditions of people in Afghanistan. It is the flagship of the Central Statistics Organization (now NSIA), and it covers 45 indicators of which 15 are SDG indicators.

The sampling design of the ALCS 2016–17 is representative at the national level, as well as at the provincial level. In total, 35 strata were specified, corresponding to the number of provinces (34) in the country plus the nomadic Kuchi population. For analytical purposes, the Kuchi population is not designated as rural or urban but is treated as an area of its own.

The data provides information for around 20,000 households and 155,000 people. Out of the 2102 originally sampled clusters, 304 (14%) were not covered mainly because of security reasons. A total of 176 clusters were replaced, meaning that 1926 out of the 2102 (92%) originally sampled clusters were effectively covered.

III. Results

This chapter presents details of Afghanistan's national MPI estimation results based on the ALCS 2016–17 data. We first present the A-MPI as well as the poverty rate and intensity among the poor. We then list disaggregated results by household and individual characteristics. The third section presents robustness tests for the choice of weights and of the k-value. This chapter has the following sections:

3.1 Afghanistan's national MPI: Key results;

3.2 Disaggregation by urban, rural, and Kuchi areas, and provinces;

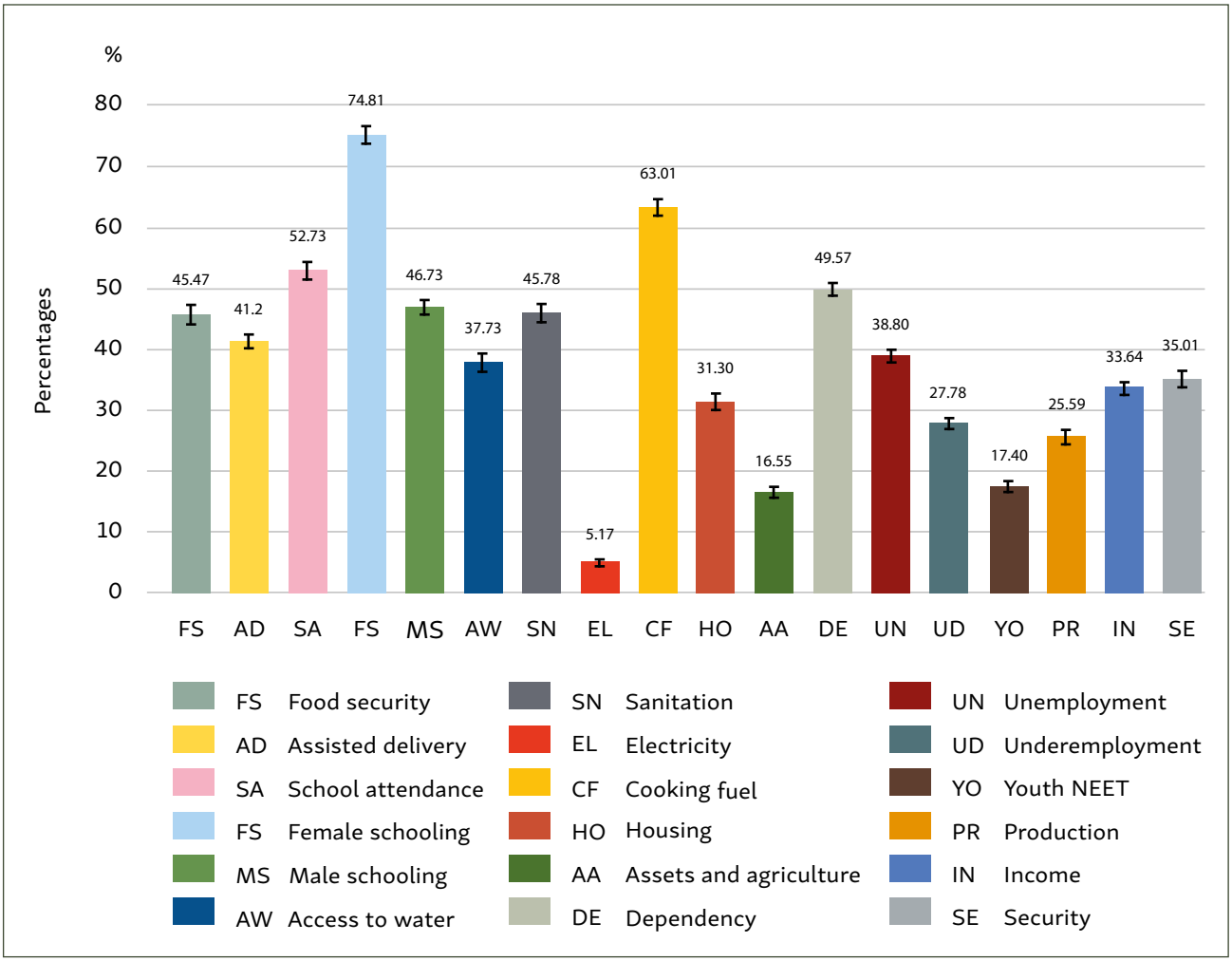
3.3 Robustness of the results to alternative poverty cut-offs;

3.4 Multidimensional poverty and monetary poverty;

3.5 Performance across household size;

3.6 Performance according to education of household head.

FIGURE 3.1 National uncensored headcount ratios, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

3.1 AFGHANISTAN'S NATIONAL MPI: KEY RESULTS

The basic building block of multidimensional poverty analysis is the set of uncensored headcount ratios. These headcount ratios are estimated for each indicator, and they represent the proportion of the population who are deprived in the corresponding indicator, irrespective of their poverty status. As Figure 3.1 shows, the highest deprivations at the national level are found for female schooling (with 75% of the population deprived in this indicator), cooking fuel (63%), school attendance (53%), and dependency (50%). On the other hand, some indicators show much lower rates of deprivation. In particular, the rate of deprivation in electricity (5%) is the lowest among all indicators, and relatively fewer people are deprived in youth NEET (17%)[6] and asset ownership and agriculture (17%).

Complementing the uncensored headcount ratios, Table 3.1 shows the main figures related to the A-MPI for 2016–17, including its partial indices: the headcount ratio or poverty rate, H, which is also called the incidence of poverty (or the proportion of people identified as multidimensionally poor), and the intensity of poverty (or the average proportion of weighted indicators in which the poor are deprived, A). As can be seen in the table, the incidence of multidimensional poverty is nearly 52%. Since this estimate is based on a sample, it has a margin of error. Thus, the 95% confidence interval is also presented in the table. This means that we can say with 95% confidence that the true multidimensional poverty headcount ratio of the population is between 50.3% and 53.1%.

The average intensity of poverty, which reflects the share of deprivations each poor person experiences on average, is 52.5%. That is, each poor person is, on average, deprived in more than half of the weighted indicators. With 95% confidence, the true value of the intensity of poverty lies between 52.2% and 52.9%.

The MPI, which is the product of H and A, has a value of 0.272. This means that multidimensionally poor people in Afghanistan experience 27.2% of the total deprivations that would be experienced if all people were deprived in all indicators. The MPI is the official statistic of poverty used to declare whether poverty has fallen or risen over time, because it considers progress on two levels – H and A. From analytical and policy-making viewpoints, it is important to notice that there are situations in which only one statistic goes down over time and not the other, but it is important to always keep in mind that both are important. If we use only the headcount ratio, for example, we might see a rise in poverty in some years, where, if we use MPI, the fuller picture would reveal a fall in multidimensional poverty – if there had been a sufficiently large decrease in intensity.

Figure 3.2 depicts the distribution of the intensity of poverty among the poor. It gives an idea of the c-vector schedule for values equal to or greater than 40%, thus

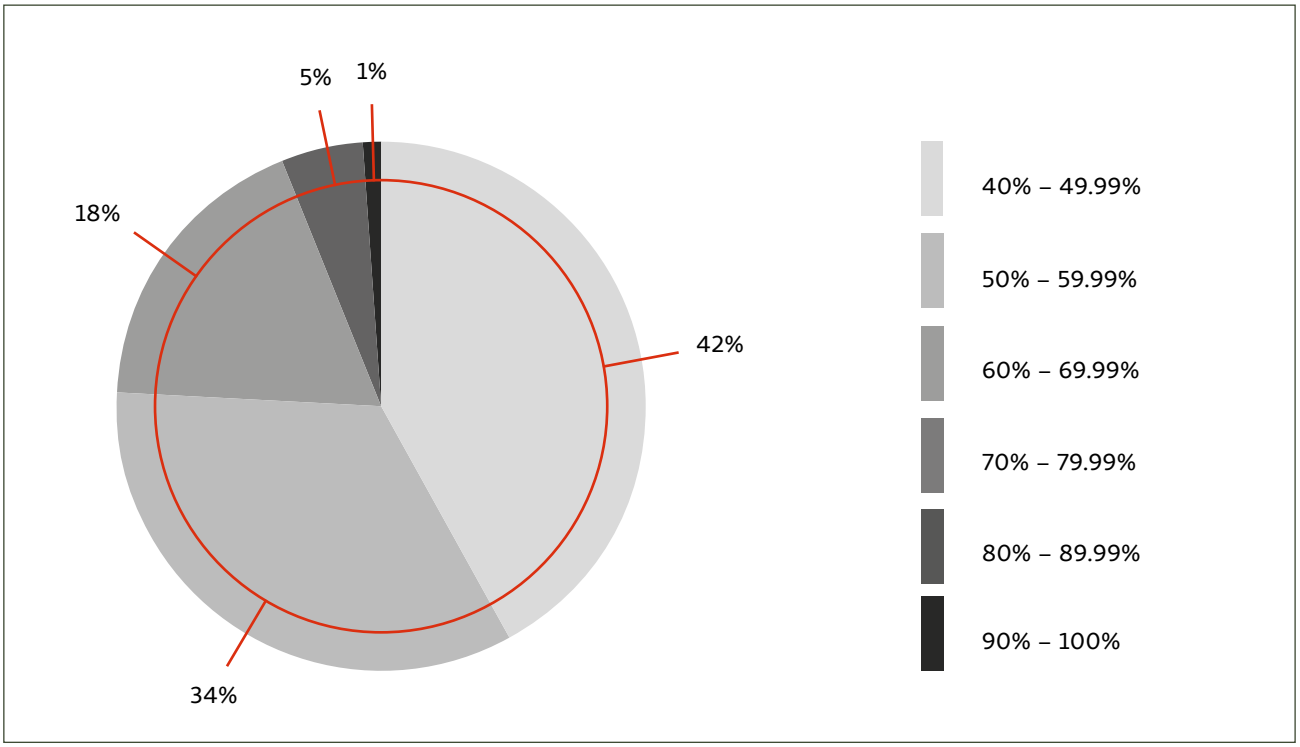
TABLE 3.1 Incidence, intensity, and MPI, 2016–17

Poverty cut-off (k)	Index	Value	Confidence interval (95%)	
k-value = 40%	MPI	0.272	0.264	0.28
	Headcount ratio (H, %)	51.7	50.3	53.1
	Intensity (A, %)	52.5	52.2	52.9

Source: Author's calculations based on data from ALCS 2016–17.

[6] In this particular indicator, it is worth noting that 37.4% of the population live in households where there is no one aged 17–24. Also, 16.1% of people aged 17–24 belong to the NEET group. Finally, gender differences are noticeable: 21% of female youth can be classified as NEET, as opposed to 11.2% of male youth. This disaggregation shows the extent to which female youth are disadvantaged compared to their male counterparts.

FIGURE 3.2 Incidence, intensity, and MPI, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

corresponding to the population that has been identified as multidimensionally poor. Around 42% of all poor people in Afghanistan are in the lowest intensity band, which is between 40% and 49.99%, and one-quarter of the poor have deprivation scores of more than 60%. This suggests that further progress in MPI is a legitimate policy objective even in the short and medium term, as most of the poor are very near to the multidimensional poverty line. However, 6% of the poor experience the highest intensities of poverty, as they are deprived in more than 70% of the weighted indicators.

3.2 DISAGGREGATION BY URBAN, RURAL, AND KUCHI AREAS, AND PROVINCES

The nomadic Kuchi population is treated as an area of their own, as they are not considered as members of the rural and urban areas in the ALCS. Thus, applying the property of subgroup decomposability of the MPI, it is possible to disaggregate the levels of poverty for different areas of Afghanistan – urban, rural and Kuchi areas as well as provinces.

In Table 3.2, the MPI, incidence, and intensity of poverty are shown by urban, rural, and Kuchi areas. As can be seen in the table, the vast majority of the population lives in rural areas (70%), which have particularly high levels of poverty compared to urban areas. More than 60% of the rural population are multidimensionally poor, which greatly contrasts with the 18.1% multidimensional poverty headcount ratio in urban areas.

On average, poor people in rural areas experience deprivations in nearly 53% of the weighted indicators, a figure that is slightly under 50% in urban areas. As a result, the MPI in rural areas is 0.312, whereas in urban areas it amounts to 0.088. The Kuchi represent 5% of the Afghan population, and the levels of poverty they experience deserve particular attention. The vast majority of this population (89%) lives in multidimensional poverty, and, on average, they are deprived in more than 56% of the weighted indicators. The MPI for the Kuchi population (0.500) is higher than that in rural areas, and thus they can be considered as nomadic pockets of poverty in the country. To some extent, this may reflect the selected living standards indicators. However, it is useful for policy purpos-

TABLE 3.2 Multidimensional poverty by rural/urban areas, 2016–17

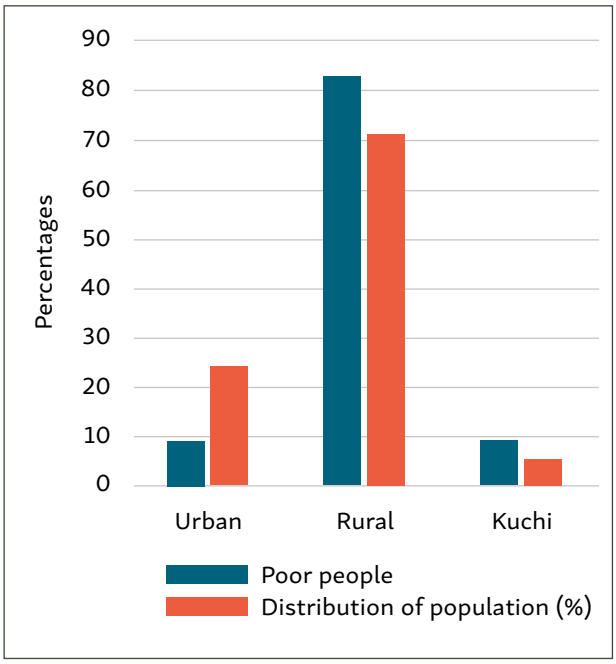
Index	Urban				Rural			
	Population share (%)	Value	Confidence interval (95%)		Population share (%)	Value	Confidence interval (95%)	
MPI	25%	0.088	0.075	0.1	70%	0.312	0.313	0.33
Headcount ratio (H, %)		18.1	15.7	20.5		61.1	59.7	62.6
Intensity (A, %)		48.5	47.6	49.4		52.6	52.2	53

Source: Author's calculations based on data from ALCS 2016–17.

es to have an objective gauge of the Kuchi population that is identical to the measure applied to the rest of the country's population.

Figure 3.3 compares the distribution of the poor and general population by area of residence and for the Kuchi population. Although only 5% of the population belong to the Kuchi population, nearly 9% of multidimensionally poor people belong to this nomadic part of the population. This figure also covers those living in urban areas, which are home to 25% of the population. Overall, poverty is heavily concentrated in rural areas, as they are home to more than 83% of the poor population, while 70% of the total population live in rural areas.

FIGURE 3.3 Distribution of the poor and population by urban, rural, and Kuchi Areas, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

Turning now to an analysis at the province level, Table 3.3 shows the province-level estimates for the MPI, incidence of poverty, and intensity of poverty. The incidence of poverty is above 70% in eight out of the 34 provinces, namely Badghis (85%), Nooristan (80%), Kunduz (77%), Zabul (77%), Helmand (74%), Samangan (73%), Urozgan, (71%), and Ghor (70%). Although these regions are relatively small in that each of them is home to less than 4% of the population, they deserve particular attention as a very large proportion of their populations live in multidimensional poverty.

Conversely, the incidence of poverty is below 20% only in the capital, Kabul (15%), which is home to 16% of the population and thus represents the most densely populated province in the country. As a general pattern, people who live in multidimensional poverty suffer relatively similar levels of poverty intensity. In all regions, the intensity of poverty is around 50%, but it ranges from 46.1% in Logar to 59.3% in Nooristan. Maps for these and other figures are presented in Appendix I.

The MPI for each province and its corresponding 95% confidence intervals are depicted in Figure 3.4. If these confidence intervals do not overlap, then a significant

TABLE 3.3 Multidimensional poverty by province, 2016–17

Subnational Region	Population Share (%)	MPI			Headcount Ratio (H, %)			Intensity (A, %)		
		Value	Confidence Interval (95%)		Value	Confidence Interval (95%)		Value	Confidence Interval (95%)	
Kabul	16.00	0.071	0.056	0.085	14.7	11.8	17.7	48.0	46.6	49.4
Kapisa	1.60	0.119	0.074	0.164	24.7	16.6	32.9	48.0	45.0	51.0
Parwan	2.40	0.217	0.171	0.263	42.4	34.6	50.3	51.1	48.6	53.7
Wardak	2.20	0.337	0.303	0.370	67.1	61.5	72.7	50.2	49.2	51.3
Logar	1.70	0.140	0.084	0.197	30.4	19.4	41.5	46.1	44.1	48.2
Nangarhar	5.80	0.349	0.305	0.393	66.3	58.3	74.2	52.7	51.2	54.1
Laghman	1.70	0.341	0.286	0.396	62.7	54.3	71.2	54.4	52.3	57.0
Panjsher	0.50	0.117	0.090	0.143	25.0	19.1	30.8	46.8	45.2	48.4
Baghlan	3.20	0.291	0.253	0.329	58.0	51.1	64.9	50.2	49.0	51.0
Bamyan	1.60	0.309	0.271	0.346	59.3	52.7	66.0	52.1	50.1	53.1
Ghazni	4.40	0.305	0.255	0.354	58.7	49.7	67.7	51.9	50.6	53.2
Paktika	1.50	0.140	0.102	0.179	29.7	21.7	37.7	47.1	46.0	48.2
Paktya	1.90	0.235	0.203	0.266	48.3	41.9	54.8	48.5	47.5	49.6
Khost	2.20	0.252	0.210	0.294	51.6	43.6	59.7	48.8	47.8	49.8
Kunarha	1.60	0.302	0.263	0.342	57.0	50.5	63.4	53.1	51.6	54.5
Nooristan	0.50	0.476	0.387	0.565	80.2	67.4	93.0	59.3	55.7	62.9
Badakhshan	3.40	0.348	0.307	0.389	64.9	58.4	71.5	53.7	52.1	55.2
Takhar	3.40	0.259	0.221	0.296	51.9	45.0	58.9	49.8	48.7	51.0
Kunduz	3.80	0.430	0.392	0.469	77.3	71.6	83.0	55.6	54.1	57.2
Samangan	1.30	0.409	0.364	0.455	72.7	65.8	79.6	56.3	54.6	58.0
Balkh	4.80	0.237	0.192	0.282	45.0	37.3	52.8	52.6	50.4	54.7
Sar-e-Pul	2.00	0.324	0.283	0.364	61.3	54.3	68.4	52.8	51.3	54.3
Ghor	2.60	0.365	0.319	0.412	70.1	62.8	77.4	52.1	50.3	54.0
Daykundi	1.60	0.348	0.309	0.388	67.4	60.4	74.5	51.7	50.4	52.9
Urozgan	1.30	0.378	0.322	0.434	71.2	60.6	81.8	53.1	51.4	54.7
Zabul	1.20	0.416	0.375	0.457	76.9	70.4	83.3	54.1	53.0	55.2
Kandahar	4.40	0.342	0.303	0.380	66.7	59.8	73.5	51.3	50.2	52.3
Jawzjan	1.90	0.207	0.166	0.247	43.0	34.9	51.0	48.1	47.2	49.0
Faryab	3.90	0.388	0.337	0.438	68.3	60.4	76.2	56.2	54.3	58.1
Helmand	3.30	0.376	0.340	0.411	73.9	66.6	81.2	50.8	49.6	52.1
Badghis	2.40	0.504	0.470	0.537	85.5	81.2	89.8	58.9	57.4	60.4
Herat	7.10	0.316	0.274	0.358	57.6	50.6	64.5	54.8	53.3	56.4
Farah	2.10	0.367	0.318	0.416	66.7	58.2	75.3	55.0	53.9	56.1
Nimroz	0.70	0.237	0.186	0.288	47.5	37.5	57.4	49.9	48.8	51.0

Source: Author's calculations based on data from ALCS 2016–17.

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difference in multidimensional poverty is clearly obtained. With this important technical detail in mind, it is not possible to pinpoint the poorest province by the MPI.

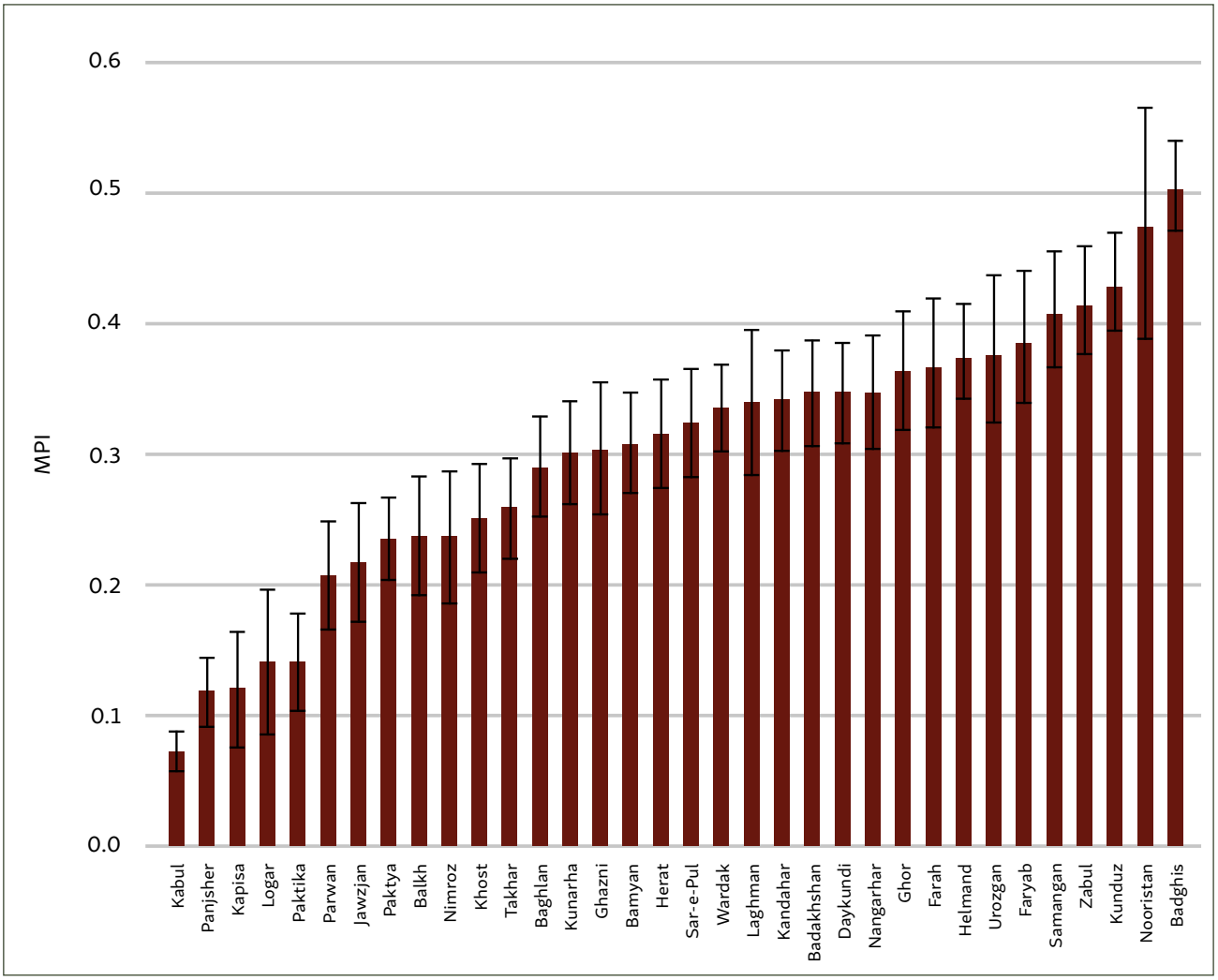
On average, however, MPI values in Badghis (0.504) and Nooristan (0.476) are the highest. The capital, Kabul, has an MPI of 0.071. This value is significantly lower than nearly every other province in country, with Kapisa and Logar being the only exceptions.

Figure 3.5 depicts where the MPI poor people live across the different provinces in Afghanistan. This graph is particularly important because it combines the size of the province in terms of population with the intensity of multidimensional poverty.

It is important to note that more than a quarter of poor people live in just four provinces. Herat is home to nearly 8% of poor people in the country, followed by Nangarhar (7%), Kandahar, and Kunduz (6% each).

At this point, it is natural to ask what deprivations create this poverty and how can they be reduced? To answer these questions, we break the MPI down by indicator and examine its composition. The censored

FIGURE 3.4 MPI by province 2016–17

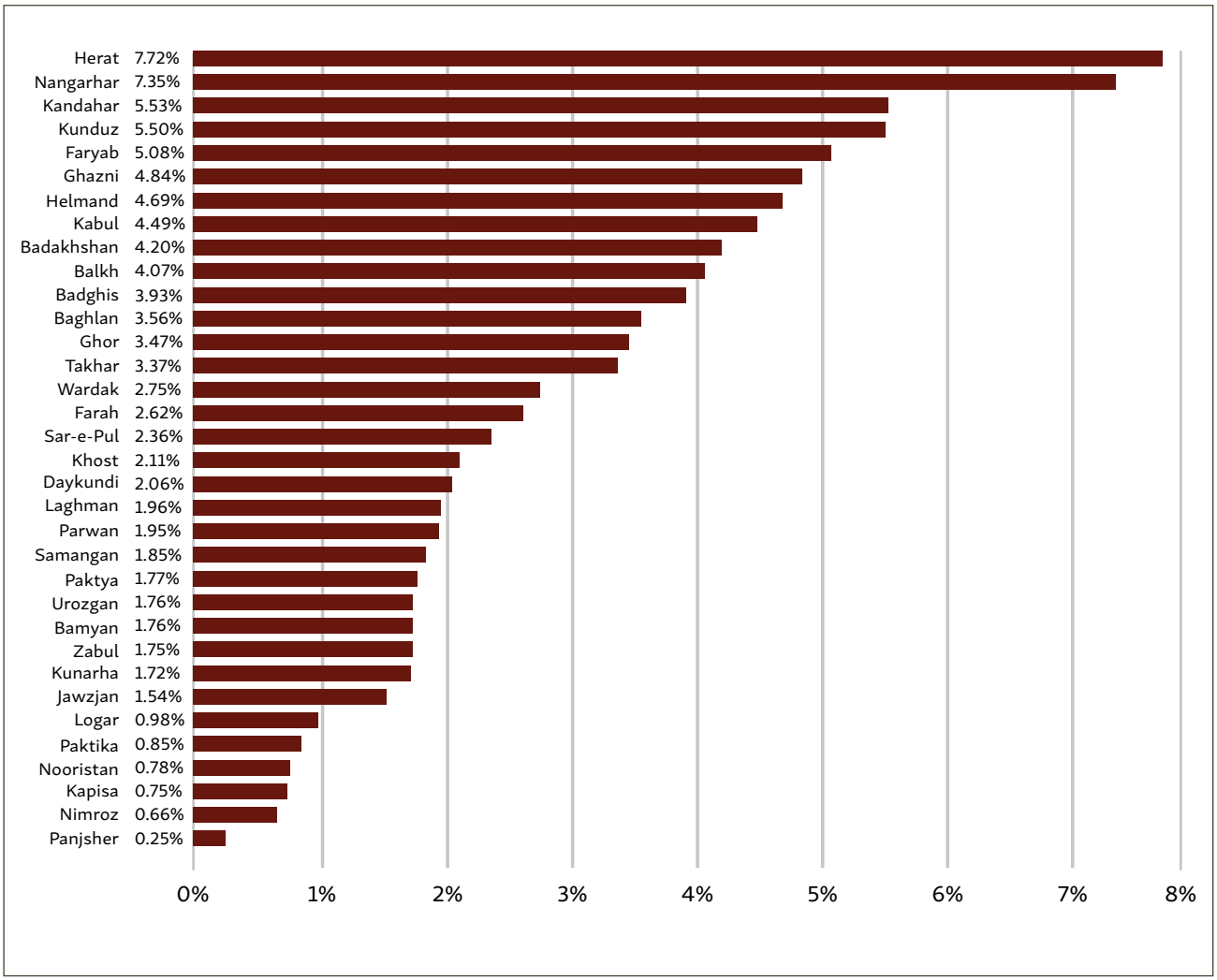


Source: Author's calculations based on data from ALCS 2016/17.

headcount ratio of an indicator represents the proportion of the population that is multidimensionally poor and also deprived in that indicator. Recall that the MPI can also be computed as the sum of the weighted censored headcount ratios. Therefore, reducing any of the censored headcount ratios – by reducing any deprivation of any poor person – naturally results in a reduction in the MPI.

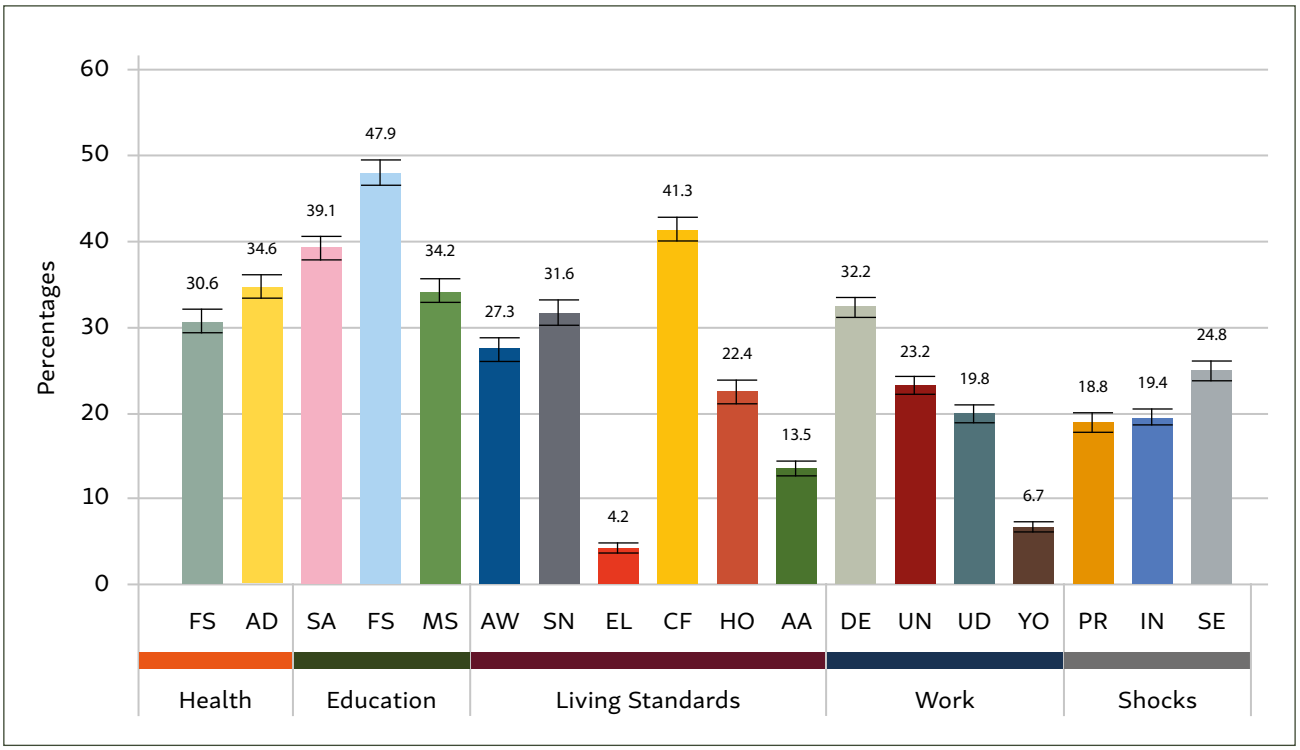
Figure 3.6 shows that the largest censored headcount ratio corresponds to female schooling (with 48% of the population being poor and deprived in this indicator), cooking fuel (41%), and school attendance

FIGURE 3.5 Proportion of Afghanistan's poor people in each province (numbers sum to 100%)



Source: Author's calculations based on data from ALCS 2016–17.

FIGURE 3.6 National censored headcount ratios, 2016–17



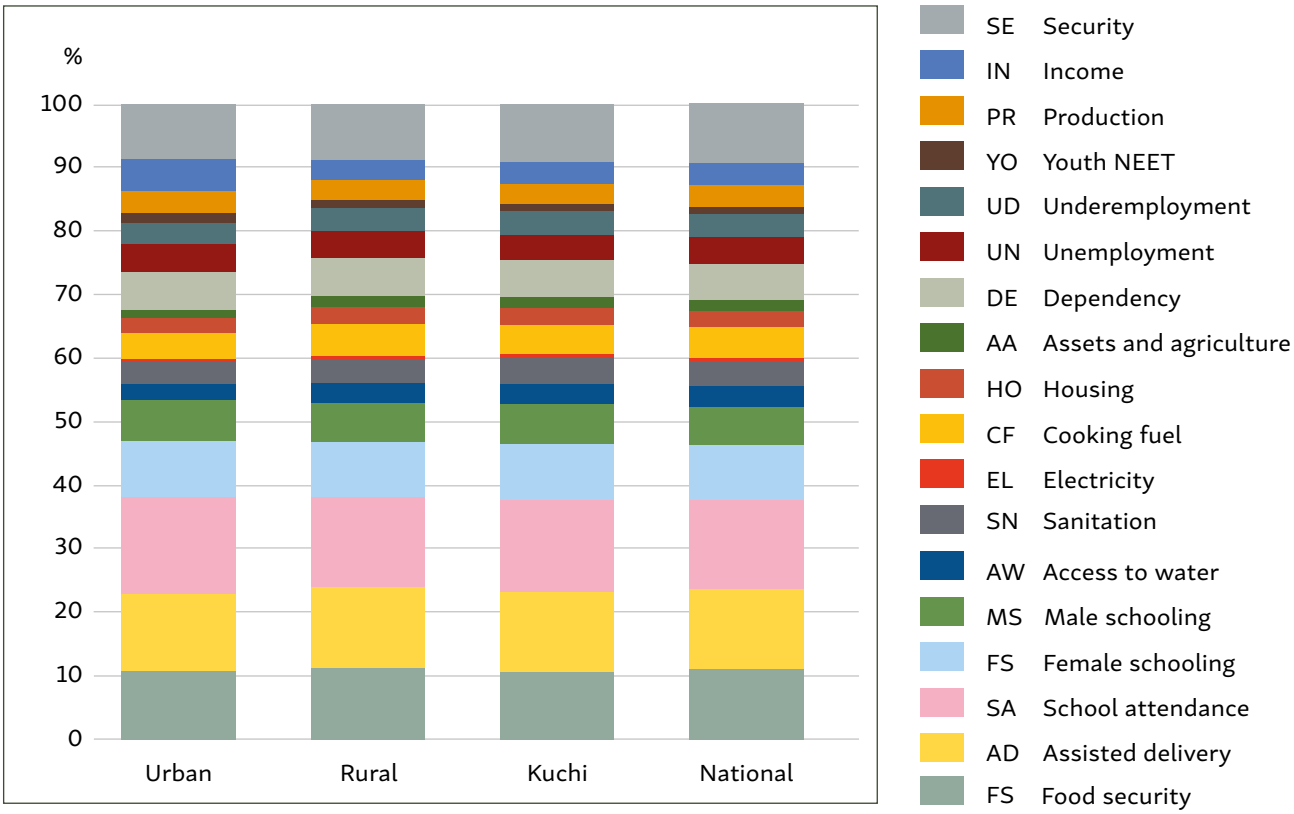
Source: Author's calculations based on data from ALCS 2016–17.

(39%). On the other hand, some indicators show much lower rates of deprivation while being poor. In particular, deprivations are the lowest for electricity (4%) and youth NEET (7%).

Deprivation in assisted delivery is above 15% in Logar, Paktika, Takhar, Ghor, and Nimroz. Deprivation in school attendance is above 15% for a larger number of provinces: Kabul, Kapisa, Logar, Paktika, Paktya, Khost, Kunarha, Urozgan, Kandahar, Jawzjan, Helmand, and Nimroz. In fact, deprivation in school attendance is below 10% only in Panjsher and Ghor. Combined, the contribution of these three indicators is above 40% in Logar, Paktika, Paktya, Badakhshan, Takhar, Balkh, Kandahar, Jawzjan, and Nimroz. These results clearly show that deprivations in health and education often overlap among the poor in several provinces around the country. Thus a set of coordinated intersectoral policies regarding health and education is needed to boost poor people's chances of exiting poverty.

Security is another particularly important indicator. The contribution of deprivation in security to the MPI is above 15% in three provinces, namely Kunduz,

FIGURE 3.7 Percentage contribution of each indicator to urban, rural, and Kuchi MPI, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

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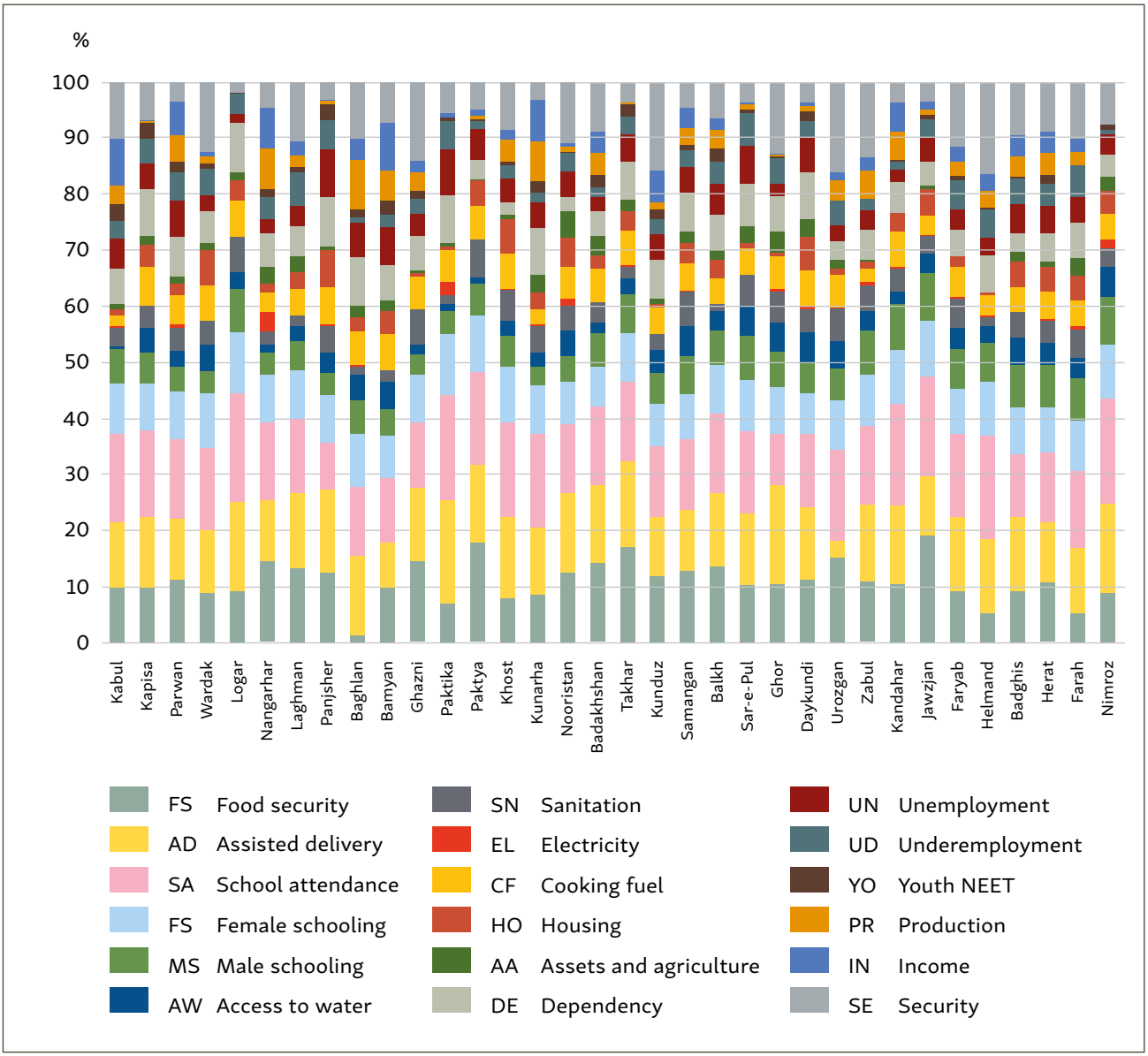
Urozgan, and Helmand. The only province where the contribution is below 2% is Logar. The contribution of all the other indicators is regularly below 10% in every single region. The only exception is the contribution of deprivation in female schooling in Paktika, Paktya, and Jawzjan.

3.3 ROBUSTNESS OF THE RESULTS TO ALTERNATIVE POVERTY CUT-OFFS

Figure 3.9 plots the value of H for each province and various levels of the poverty cut-off k. The crossing lines in this figure show that there is not a clear ranking in terms of poverty between provinces for all possible poverty cut-offs. However, on average, the poverty rate in Kabul, the capital, is the lowest among all provinces for every cut-off between 10% and 50%. Thus, Kabul's average incidence of multidimensional

FIGURE 3.8 Percentage contributions of each indicator to provinces' MPI, 2016–17

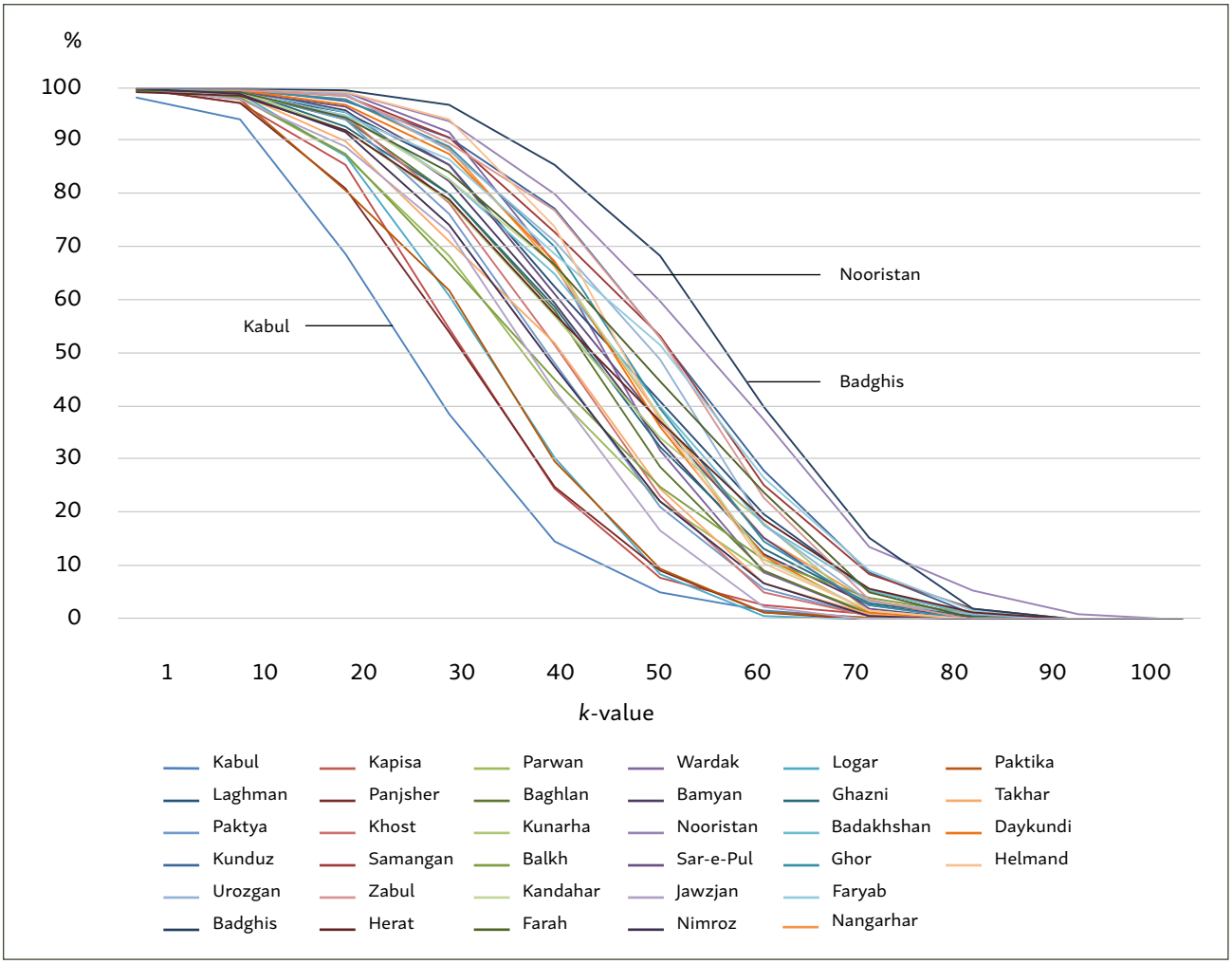


Source: Author's calculations based on data from ALCS 2016–17.

poverty is the lowest in the country irrespective of the chosen poverty cut-off within this range.

On average, the converse is true for Badghis, which is identified as the region with the highest average multidimensional poverty headcount ratio for every cut-off between 30% and 60%. For every cut-off between 30% and 50%, Kabul, Kapisa, Panjsher, Paktika, and Logar are identified, on average, as the five least-poor provinces in the country. The poorest provinces can only be identified for particularly high poverty cut-offs (50–70%) and they are Badghis and Nooristan.

FIGURE 3.9 District poverty rates (H) for different values of the poverty cut-off k



Source: Author's calculations based on data from ALCS 2016–17.

Table 3.4 presents the Spearman and Kendall rank correlation coefficients between the regions' rankings using the selected poverty cut-off, k=40% and the ranking for alternative poverty cut-offs of 20% and 60%. The Spearman coefficient is higher than 0.8 for alternative cut-offs between k=20% and k=60%. This means that the rank correlation between the selected poverty cut-offs is preserved to a large extent under these alternative choices.

Similar results are found when using the Kendall coefficient, which is above 0.63 for each of the values of k=20% and k=60%, and it rises to 0.88 for k=30% (it is always lower than Spearman as it accounts for tied ranks). The provincial comparisons for poverty cut-offs of 30% and 50% are robust in comparison with the chosen cut-off of 40%.

Let us delve deeper and become even more precise. Given that the MPI is based on a sample of the Afghan population, it is subject to sampling error. Thus it is important to assess the robustness of the MPI provincial rankings considering standard errors. For this, the MPI values for each pair of provinces are first compared to each other within the baseline scenario, which corresponds to the poverty cut-off k=40%. In the case of the ALCS 2016–17, as can be noted visually from the size of the confidence intervals in Figure 3.4, the standard errors are quite large. This, naturally, will affect assessments of robustness.

Under the selected poverty cut-off (k=40%) and the selected weight scheme (see Table 2.1), we compared the MPI estimates for every pair of provinces while considering their standard errors. We assessed whether it is possible to establish, for example, that i) province A is poorer than province B, ii) province B is poorer than province A, or if iii) we cannot statistically determine which one is poorer. This province ordering is taken as the baseline. We then performed robustness tests to changes in the poverty cut-off and in the weighting scheme as follows.

We estimated the province MPI for the alternative poverty cut-offs k=20% and k=30%, under the selected weighting scheme. We considered a pairwise comparison to be robust if the province ordering established at baseline is preserved. We found that 467 out of the 561 possible pairwise comparisons, that is 83.2%, are unchanged under the alternative cut-offs. This shows that the province orderings by the MPI are largely stable with respect to changes in the poverty cut-off.

TABLE 3.4 Correlation among province ranks for different poverty cut-offs

		k =40%
k = 20%	Spearman	0.922***
	Kendall Tau-b	0.772***
k = 30%	Spearman	0.969***
	Kendall Tau-b	0.875***
k = 50%	Spearman	0.931***
	Kendall Tau-b	0.804***
k = 60%	Spearman	0.815***
	Kendall Tau-b	0.633***

Source: Author's calculations based on data from ALCS 2016–17.
*** = p-value < 0.01

Turning now to province rank stability with respect to the dimension-weighting scheme, we performed similar pairwise comparison tests to assess the relationship between the rank obtained under the baseline (k=40% and 1/5 weight for each dimension) and alternative weighting schemes. Computing first five alternative schemes in which one dimension, in turn, is given a 1/4 weight while each of the remaining four dimensions is given a 3/16 weight, we found that 472 out of 561 (84.1%) of the pairwise comparisons are robust in the sense that the province ordering at the baseline remains unchanged. Even if we take a stricter approach and compute five more extreme, alternative weighting schemes in which one dimension, in turn, is given a 1/3 weight while each of the remaining four dimensions is given a 1/6 weight, we find that 64% (359 of 561) of the possible pairwise comparisons are robust. These figures show the extent to which the MPI province orderings are stable to changes in the weighting scheme.

3.4 MULTIDIMENSIONAL POVERTY AND MONETARY POVERTY

Table 3.5 presents the extent to which there is an overlap between poverty as measured by the monetary and the multidimensional measures. Overall, 54.5% of the population are monetary poor, while 51.7% are multidimensionally poor.

Around 30% of the population are not poor by any measure of poverty, and nearly 36% are poor by both a monetary and a multidimensional measure. Summing these, two-thirds of the population (66.4%) is identified as poor or non-poor in both monetary and multidimensional terms. These figures provide a clear insight about the extent to which there is an overlap between monetary and multidimensional poverty.

However, fully one-third of the population is classified differently by both approaches to poverty. Around 18% of the population are monetary poor but not multidimensionally poor. This group may require increased access to economic opportunities or transfers. However, nearly 16% of the population are multidimensionally poor but not monetary poor. Improving the living conditions of this segment of the population requires a different set of policies, for example, addressing deficiencies in services and infrastructure. In effect, this group does not face monetary restrictions as per the national poverty line, but they do suffer serious and interlinked deprivations in indicators that are core to the ANPDF. More importantly, in the absence of the A-MPI, this population is likely to be overlooked in poverty reduction strategies. This situation draws attention to the need for coordinated social and economic policies aimed at improving the lives of multidimensionally poor people. Public actions of several kinds are needed to effectively tackle poverty in all its forms and dimensions.

A complementary analysis of the differences arising from taking a monetary or a multidimensional approach is shown in Table 3.6. People who are non-poor by monetary metrics suffer multidimensional poverty. To be precise, over one-third of people who are not monetary poor are multidimensionally poor. Moreover these poor are deprived in nearly half of the weighted indicators (49.8%), whereas those who are both MPI poor and consumption poor are deprived in 53.8% of weighted indicators. The former would be left out from policy efforts against poverty if only a purely monetary metric was considered. Interestingly, around two-thirds of monetary poor people (67.5%) are MPI poor, which demonstrates that both measures complement each other and neither provides complete information on poverty.

TABLE 3.5 Monetary and multidimensional poverty: Who is poor in both?

	Multidimensionally poor (k=40%)		
Monetary Poor	Non-poor	Poor	Total
Non-poor	30.1	15.4	45.5
Poor	18.2	36.3	54.5
Total	48.3	51.7	100

Source: Author's calculations based on data from ALCS 2016–17.
Note: This table presents estimated proportions of the population with respect to a) the official ALCS 2016–17's monetary poverty headcount ratio (54.5%) and b) the official Afghanistan multidimensional poverty headcount ratio based on ALCS 2016–17 data (51.7%).[7]

[7] The MPI estimation drops some monetary poor households due to missing indicators, making this cross-tab slightly imperfect; so a slight adjustment was carried out using the empirical observation that the probability of being multidimensionally poor, conditional on being monetary poor is 66.7%.

Turning now to an analysis by province, Figure 3.10 depicts different levels of mismatch between monetary and multidimensional poverty headcounts. In most of the regions, the proportion of poor people is similar, as the confidence intervals for both headcounts overlap. However, in Kabul, Kapisa, Paktya, Badakhshan, Samangan, Daykundi, Jawzjan, and Helmand the proportion of monetary poor people is significantly higher than that of people living in multidimensional poverty. The converse is true in Nangarhar, Baghlan, Paktika, Khost, Badghis, and Farah. In these provinces, budget allocations would benefit from analysing the indicator

TABLE 3.6 Multidimensional poverty indices for monetary poor and non-poor people

Index	Monetary poor	Non-monetary poor
MPI	0.363	0.174
Headcount ratio (H, %)	67.50%	34.90%
Intensity (A, %)	53.80%	49.80%

Source: Author's calculations based on data from ALCS 2016–17.

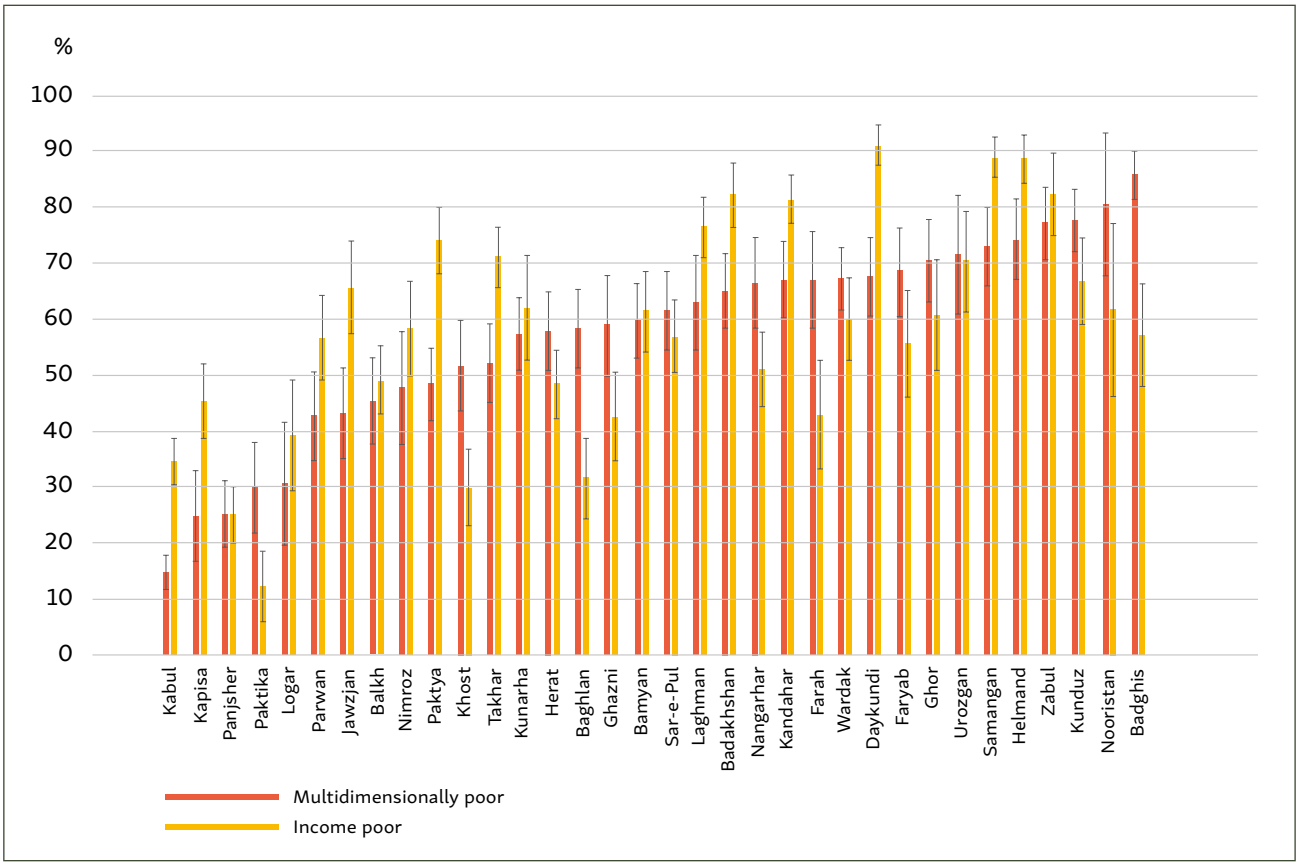
composition of the MPI and aligning resource allocations with the extent of observed deprivations. This would enable intersectoral multidimensional poverty alleviation programs to have an accelerated impact.

3.5 PERFORMANCE ACROSS HOUSEHOLD SIZE

Households in Afghanistan tend to be large. Nearly half (48.5%) of the population lives in a household of five to 10 members, and around 30% live in households of 10 to 15 members. Around 8% of the population live in households composed of more than 15 members (see Table 3.7).

Depending on the household composition and the economic situation, sizeable households may be more likely to live in multidimensional poverty (see Table 3.7). Around 33% of people who live in relatively small households (five members or less) are multidimensionally poor. This headcount ratio is over 50% for the rest of the population and can reach 60% in the most sizeable households (15 members or more). The MPI by household size follows the same pattern. While it is 0.167 for people living in small households, it is 0.316 for people living in large households.

FIGURE 3.10 Incidence of monetary and multidimensional poverty by province (ranked from least MPI poor to poorest)



Source: Author's calculations based on data from ALCS 2016–17.

TABLE 3.7 Poverty indicators by household size

Household Size	Population Share (%)	MPI	Confidence Interval (95%)		H (%)	Confidence Interval (95%)		A (%)	Confidence Interval (95%)	
4 members or less	13.3	0.167	0.156	0.178	33.2	31.1	35.2	50.3	49.7	50.9
5–9 members	48.5	0.273	0.263	0.282	51.9	50.2	53.6	52.6	52.2	52.9
10–14 members	30.2	0.303	0.291	0.314	57	54.8	59.1	53.1	52.6	53.6
15 members or more	8.1	0.316	0.289	0.342	60.2	55.3	65.1	52.4	51.3	53.5

Source: Author's calculations based on data from ALCS 2016–17.

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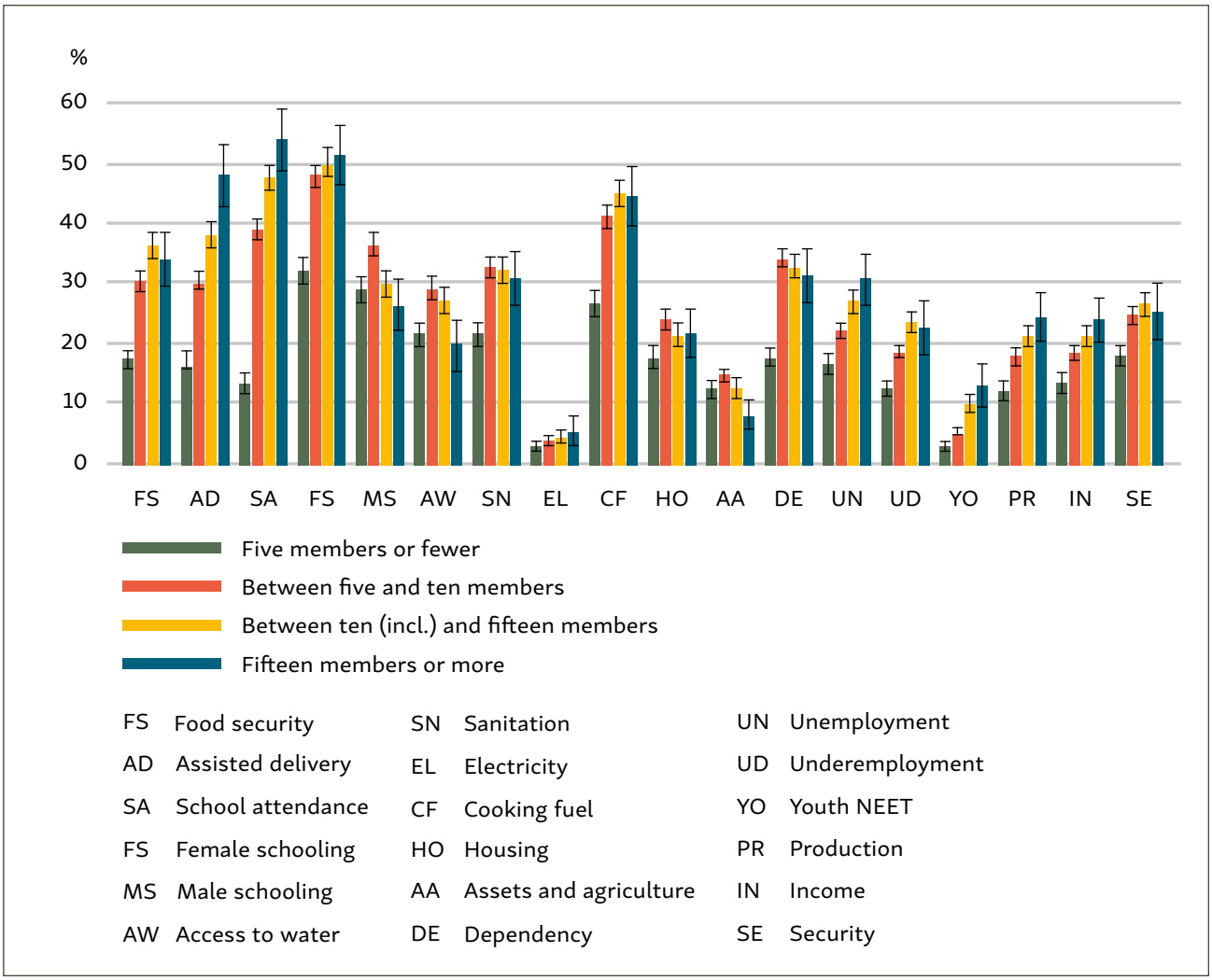
FIGURE 3.11 Censored headcount ratios by household size (%)



Source: Author's calculations based on data from ALCS 2016–17.

The censored headcount ratios confirm that large households are more likely to live in multidimensional poverty and show how each indicator is associated with this condition (see Figure 3.11). However, the picture is mixed among households with five or more members. The proportion of people living in small households that are poor and deprived in a particular indicator is consistently under 30%, with female schooling being the only exception (32%). Conversely, the proportion of people living in large households that are poor and deprived is higher than 40% in assisted delivery (47.7%), school attendance (53.7%), female schooling (51.1%), and cooking fuel (44.5%). However, note that large households have lower deprivations in male schooling, access to water, and land ownership, and in sanitation, electricity, land ownership, and dependency there is no significant difference across household size. Looking at the details by indicator provides a much more nuanced view of poverty by household size.

3.6. PERFORMANCE ACCORDING TO EDUCATION OF HOUSEHOLD HEAD

Education of the household head is an important element to consider when assessing multidimensional poverty in Afghanistan. The vast majority of people (72.7%) live in households where the head has no schooling. This population has the highest incidence of multidimensional poverty and the highest intensity.

FIGURE 3.12 Censored headcount ratios by education of household head

Source: Author's calculations based on data from ALCS 2016–17.

TABLE 3.8 Poverty indicators by education of household head

Education	Population Share (%)	MPI	Confidence Interval (95%)		H (%)	Confidence Interval (95%)		A (%)	Confidence Interval (95%)	
None	72.7	0.322	0.314	0.331	60.7	59.2	62.1	53.1	52.8	53.5
Primary	9.0	0.184	0.167	0.201	36.4	33.2	39.6	50.5	49.4	51.6
Secondary or higher	18.3	0.122	0.111	0.133	25	22.9	27.2	48.6	47.9	49.3

Source: Author's calculations based on data from ALCS 2016–17.

With an MPI group value of 0.322, more than 60% of people living in these educationally disadvantaged households are MPI poor, and they suffer deprivations in more than 53% of the weighted indicators.

Less than one-fifth of the population (18.3%) live in households where the head has at least a secondary education, which may be deemed the most educationally privileged segment of the population. Nonetheless, the MPI value for this group is 0.122. Around 25% of these people live in multidimensional poverty, and they are deprived in more than 48% of the weighted indicators (See Table 3.8).

In an analysis of how these groups are poor, Figure 3.12 shows the respective censored headcount ratios. These figures are significantly higher for every single indicator, except for youth NEET, for people living in households with an uneducated head. The youth NEET censored headcount is similar for all the population groups and across levels of education of the household head. Around half of the people with an uneducated household head are poor and live in a household deprived in female schooling (55.6%). A similar number (48%) are poor and deprived in cooking fuel.

Conversely, people living in households where the head has at least a secondary education have significantly lower censored headcount ratios in every single indicator, except for youth NEET. The only censored headcount ratio around 20% for this group is female schooling. Ninety-eight point eight per cent of the population lives in male-headed households, and thus the censored headcount ratio of male schooling is null for this particular subgroup.

IV. MPI among Children and Other Age Groups

To examine MPI results according to age, we first analyse the uncensored headcount ratios by age group. Figure 4.1 (next page) shows that the headcount ratios for a large number of indicators are significantly higher for children aged 0–17 compared to the rest of the population. More than half of children are deprived in school attendance (62.5%), female schooling (76.4%), cooking fuel (64%), and the dependency indicator (55.5%). The high level of deprivation in cooking fuel is directly associated with concerns about children's health caused by indoor air pollution, acute respiratory diseases, or other life-threatening conditions.

This chapter disaggregates the MPI by age cohorts. For that purpose, we compare multidimensional poverty levels across three groups: 0–17 years, 18–39 years, and 40 years and older. Note that at this moment, 54% of Afghans have not celebrated their 18th birthday, so the level of child poverty reflects the status of the largest age cohort of the population. We also analyse differences across these subgroups in rural and urban areas. For a more detailed description, we also present at the end of this chapter an additional disaggregation for children aged 0–9 and 10–17 and then compare them to the rest of the population.

We now turn to the MPI and its components indices. In line with the uncensored headcount ratios, multidimensional poverty is highest among children aged 0–17 (see Table 4.1). Considering the confidence intervals of all the relevant figures, the MPI for the youngest Afghans is higher compared to all the other age groups. This result should draw attention to the need for increased protection against poverty for this particular age group, as it is clearly identified as a particularly vulnerable population group. These high rates of child poverty may also create additional challenges for these children and for the whole country in the future. Therefore, taking action now to improve children's health, education, employment opportunities, and survival chances should be seen as a priority in intersectoral development programs.

The high MPI value for children is driven by significant differences in the poverty headcounts compared to the rest of the age groups. More than 56% of children aged 0–17 live in multidimensional poverty. As a proportion, this headcount ratio is the highest out of every other age cohort. The intensity is also slightly higher for children, as they are deprived in nearly 53% of the weighted indictors. Thus, on average, this group also experiences poverty with the highest intensity compared to other groups in the population.

TABLE 4.1 MPI, H, and A by age group

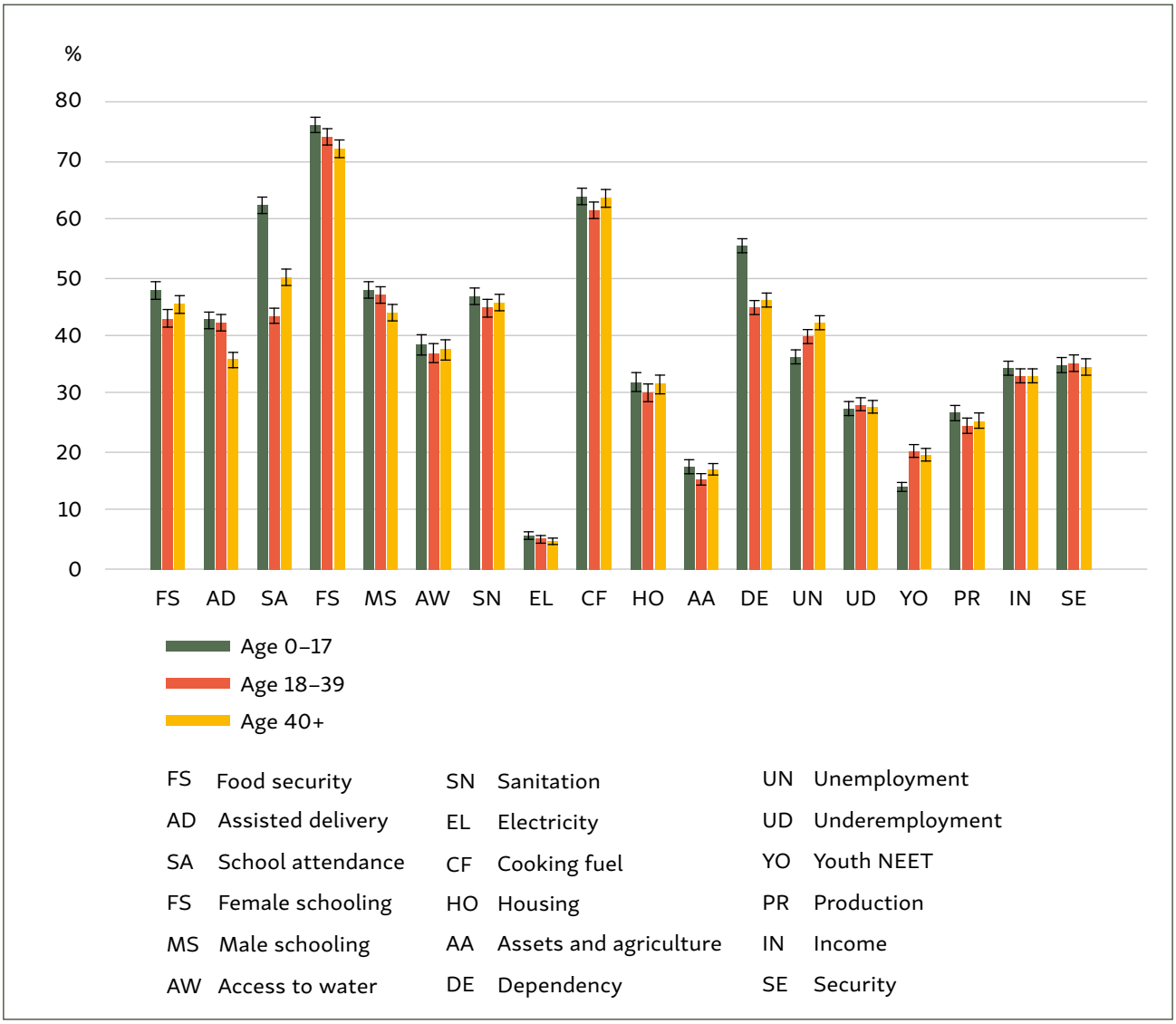
Age Group	Population Share (%)	MPI	Confidence Interval (95%)		H (%)	Confidence Interval (95%)		A (%)	Confidence Interval (95%)	
Age 0–17	54.3	0.298	0.29	0.307	56.4	54.9	57.9	52.8	52.5	53.2
Age 18–39	30.0	0.251	0.242	0.259	48	46.5	49.5	52.2	51.9	52.6
Age 40+	15.8	0.257	0.248	0.265	49	47.5	50.5	52.4	52.1	52.8

Source: Author's calculations based on data from ALCS 2016–17.

The only indicators for which the headcount ratio of deprived children is statistically similar to the rest of the population are unemployment (24.2%), youth NEET (6.6%), production shocks (20.3%), and security (25.8%). These indicators show that household conditions that are beyond the control of their youngest members negatively affect children of all ages in the country. The deprivation headcount ratios for children are particularly high in school attendance (46.9%), female schooling (51.0%), and cooking fuel (43.7%).

These results help us better understand the situation of children in the country and thus provide useful insights to increase investments specifically aimed at improving their wellbeing.

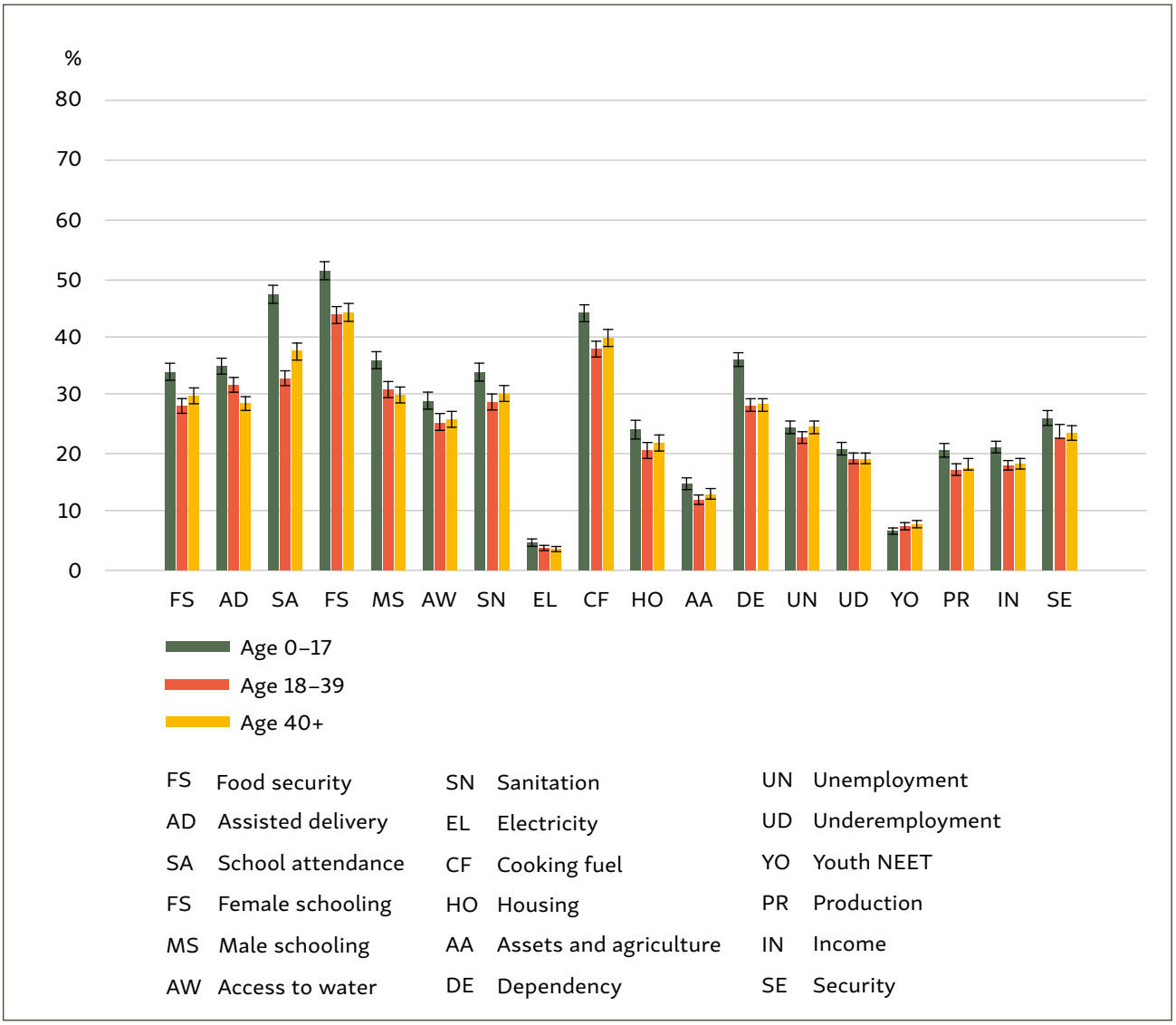
FIGURE 4.1 Uncensored headcount ratios by age group, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

Figure 4.2 presents the censored headcount ratios by age group. Overall, the patterns are similar compared to the uncensored headcount ratios, with children aged 0–17 being the most disadvantaged age group. More than 50% of these children are poor and live in households deprived in female schooling. This is to say that practically all poor children are deprived in this indicator. Nearly 47% of children in this age range are poor and live in households deprived in school attendance, and a similar proportion are poor and living in a household deprived in adequate cooking fuel. The proportion of children who are poor and live in households that are deprived in the dependency indicator is around 36%, which is almost 10 percentage points higher compared to the rest of the age groups.

FIGURE 4.2 Censored headcount ratios by age group, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

Figure 4.3 illustrates the percentage contribution of each indicator to multidimensional poverty for each age group. The composition of the MPI is similar across all age groups, with female schooling, assisted delivery, food security, and school attendance contributing the most to multidimensional poverty. The only contribution that is close to 15% comes from the deprivation in school attendance for children aged 0–17 and for adults aged 40 and above.

Across all age groups, the highest contributions come from food security, assisted delivery, and school attendance. For all the age groups, these three indicators combined account for more than one-third of their corresponding MPI value. Similarly, across all age groups, electricity has the lowest contribution to the corresponding MPI values, and it is always below 1%.

Finally, we analyse the levels of multidimensional poverty for each age group living in urban and rural areas. We emphasize that we do not perform this disaggregation for the Kuchi population, given the small amount of observations for this group. The MPI is highest for children aged 0–17 compared to all the other age groups irrespective of the area they live in. The MPI goes up to 0.345 for children living in rural areas, while it is 0.107 for children in urban areas.

In urban areas, more than 20% of children aged 0–17 are multidimensionally poor – an alarming figure compared to other age groups in urban areas, which have poverty ratios of around 15%. Rural poverty is even higher, and, sadly, children are again found to be the age group who suffer it the most. Around 65% of children in these areas are multidimensionally poor.

As a complement to our analysis, and taking into account the sample size, we now present additional details of the MPI and its component indicators per an extended disaggregation of children aged 0–9 and 10–17.

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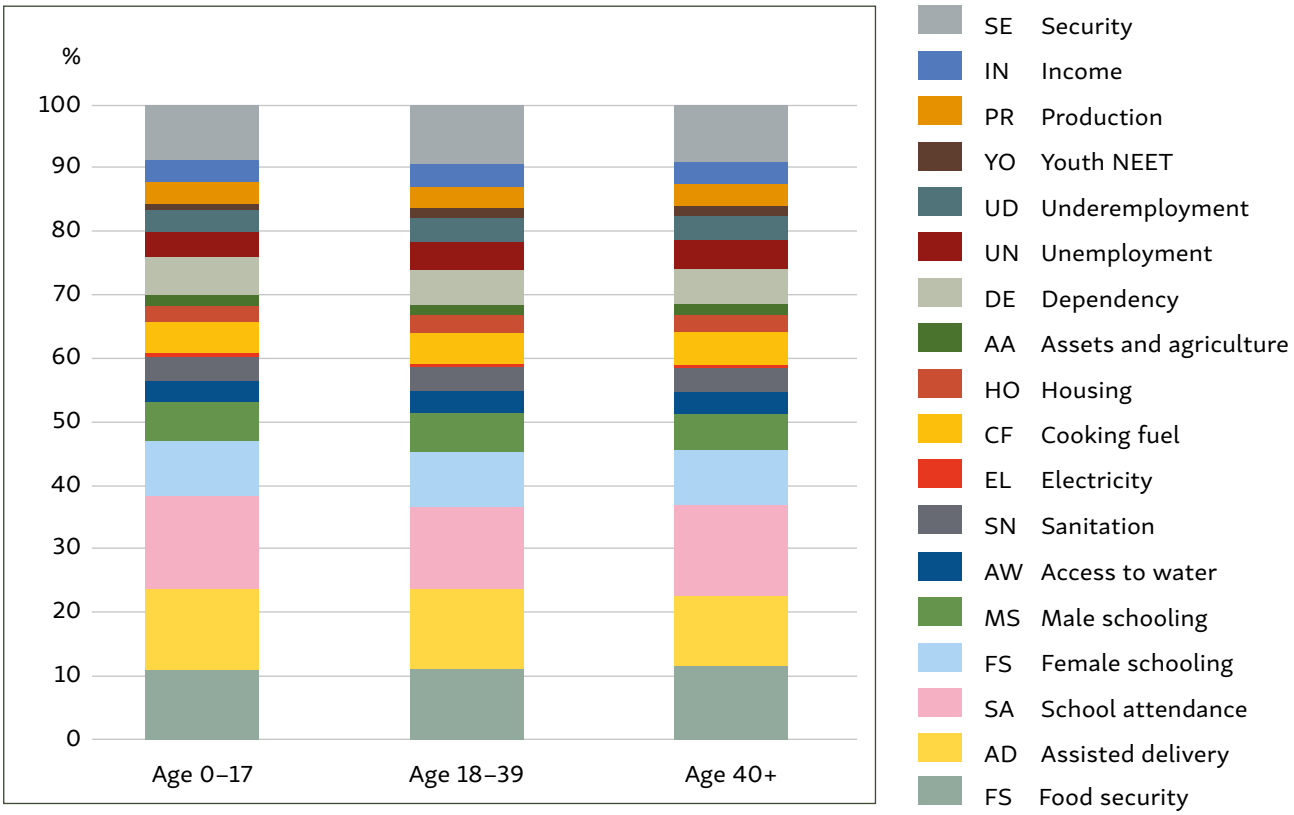
FIGURE 4.3 Percentage contributions of each indicator to age group MPI, 2016–17



Source: Author's calculations based on data from ALCS 2016–17.

TABLE 4.2 Censored headcount ratios by age group and rural/urban areas, 2016–17

Urban (25% of the total population)										
Age Group	Population Share (%)	MPI	Confidence Interval (95%)		H	Confidence Interval (95%)		A	Confidence Interval (95%)	
Age 0–17	50.27	0.107	0.092	0.121	21.75	18.93	24.58	49.00	48.00	50.00
Age 18–39	32.84	0.076	0.063	0.088	15.81	13.36	18.27	47.80	46.99	48.60
Age 40+	16.89	0.075	0.064	0.087	15.46	13.22	17.69	48.59	47.42	49.76

Rural (70% of the total population)										
Age Group	Population Share (%)	MPI	Confidence Interval (95%)		H	Confidence Interval (95%)		A	Confidence Interval (95%)	
Age 0–17	55.35	0.345	0.336	0.354	65.27	63.73	66.81	52.91	52.54	53.28
Age 18–39	29.14	0.301	0.292	0.31	57.57	56.04	59.10	52.31	51.97	52.66
Age 40+	15.51	0.309	0.3	0.319	58.95	57.32	60.57	52.48	52.09	52.86

Source: Author's calculations based on data from ALCS 2016–17.

In a comparison of four age groups (0–9, 10–17, 18–39, and 40+), multidimensional poverty is highest among children aged 0–9, followed by that for children aged 10–17 (see Figure 4.4). Considering the confidence intervals of all the relevant figures, the MPI for these two groups is significantly above the national MPI. Children are clearly a vulnerable group who merit clear and direct policy attention.

As described before, the high MPI value for both subgroups of children is driven by significant differences in the poverty headcounts compared to the rest of the age groups. Around 57% and 55% of children aged 0–9 and 10–17, respectively, live in multidimensional poverty. As a proportion, these headcount ratios are the highest out of every other age cohort and they are above the national headcount. Sadly, the multidimensional headcount ratio is above 50% only for children. Both groups of children are deprived in 53% of the weighted indictors. Thus, on average, these groups also experience poverty with the highest intensity compared to the other groups in the population.

An analysis of the overlap between monetary and multidimensional poverty for children reveals important information for policymaking. As shown in Table 4.3, 40% of children aged 0–17 are identified as poor in both monetary and MPI terms – they are the poorest of the poor. On a positive note, 25.3% of children are identified as non-poor by both metrics. This means that around three-quarters of children are either MPI poor, monetary poor, or both. In particular, 16.4% of children are MPI poor but are not poor in monetary terms. These children suffer simultaneous deprivations that negatively affect their lives. Actions to alleviate their situation require coordinated policy efforts from different sectors, including health and education.

Conversely, 18.3% of children are multidimensionally non-poor, but live in monetary poor households. This analysis shows very clearly the mismatch between monetary and multidimensional approaches to poverty. Both measures are important and must be used together. A similar overlap pattern emerges when we take subgroups of children aged 0–9 and 10–17 (see Table 4.4). Around 16% of children in both age groups are non-poor in monetary terms but suffer multidimensional poverty.

TABLE 4.3 Monetary and multidimensional poverty, children aged 0–17

	Multidimensionally Poor (k=40%)		
Monetary Poor	Non-poor	Poor	Total
Non-poor	25.3	16.4	41.7
Poor	18.3	40	58.3
Total	43.6	56.4	100

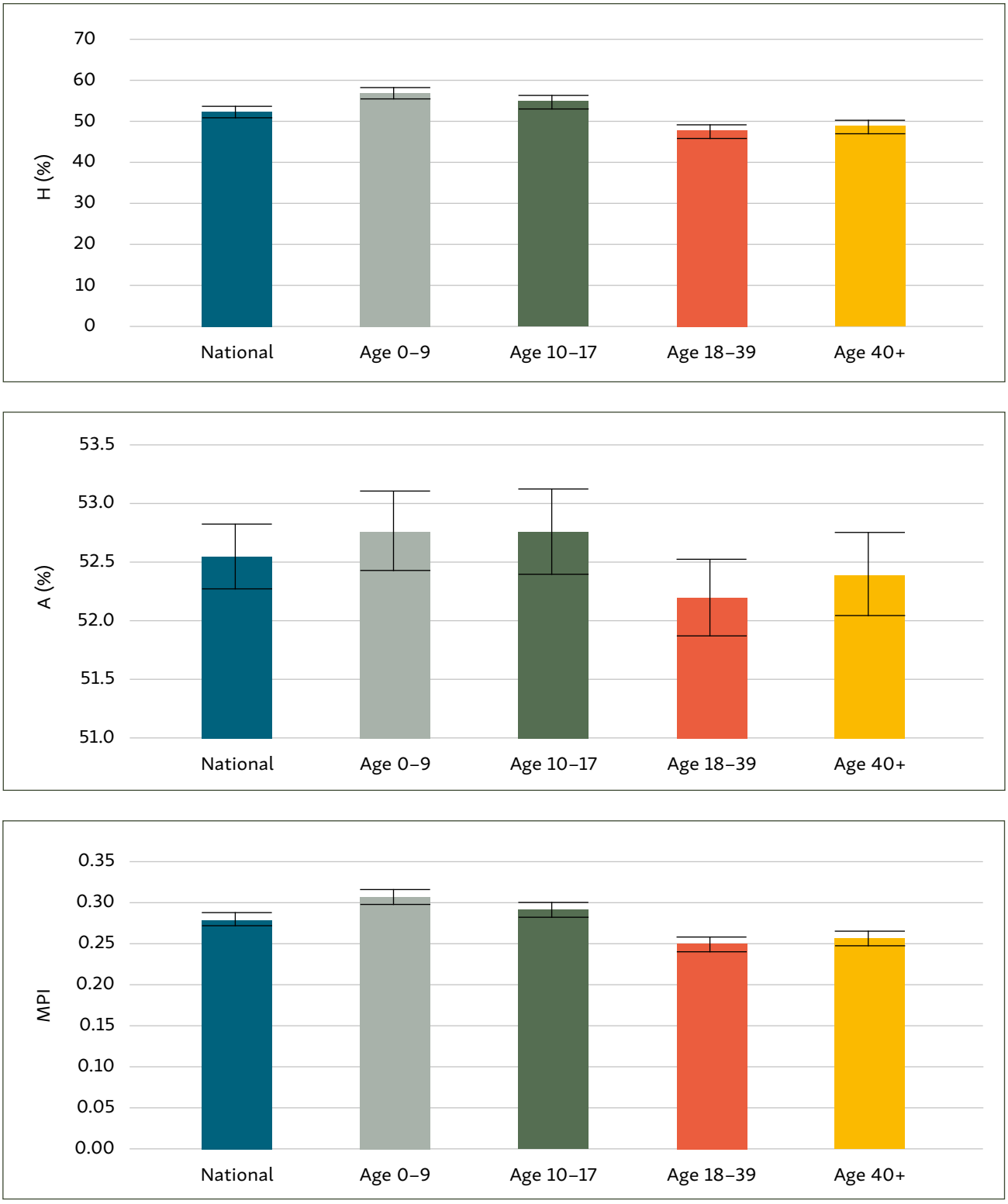
Source: Author's calculations based on data from ALCS 2016–17.

TABLE 4.4 Monetary and multidimensional poverty, children aged 0–9 and 10–17

Children Aged 0–9				Children Aged 10–17			
	Multidimensionally Poor (k=40%)				Multidimensionally Poor (k=40%)		
Monetary Poor	Non-poor	Poor	Total	Monetary Poor	Non-poor	Poor	Total
Non-poor	23.38	15.94	39.32	Non-poor	26.49	16.63	43.12
Poor	18.06	42.62	60.68	Poor	18.44	38.45	56.88
Total	41.44	58.56	100	Total	44.93	55.07	100

Source: Author's calculations based on data from ALCS 2016–17.

FIGURE 4.4 Multidimensional poverty by age group (extended)



Source: Author's calculations based on data from ALCS 2016–17.

V. Next Steps

In releasing the first national MPI for Afghanistan, the aim is not merely to better measure poverty, but to end it. Many other countries have found that their national MPI provides evidence that can be used to consolidate, strengthen, and clarify multiple existing priorities, so that progress in reducing poverty accelerates. As a reflection of ANPDF priorities, distilled into a headline number that breaks apart into policy-relevant indicator details, the A-MPI can energise efforts to reduce poverty, and track and display successes.

This document presents the national MPI for Afghanistan, using data from the ALCS 2016–17. As such, this is the baseline MPI for Afghanistan. It provides an overview of where poverty levels are the highest and how the composition of poverty – hence policy priorities – vary across the country and across urban and rural areas. It demonstrates the robustness of these results to changes in measurement specifications. And, as all results are presented with their confidence intervals, it makes visible both the assessments that are very

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clear as well as those – particularly at the level of provinces – that are indicative rather than perfectly precise.

There are some key next steps. First, it is vital that the MPI is made permanent and that it is updated regularly. Many national MPIs are updated every one or two years. Every three years is sufficient to see change, but longer gaps between surveys result in lost momentum.

The data required to estimate the A-MPI should be gathered in the upcoming Income and Expenditure and Labor Force Survey (IE&LS) and the Afghanistan Development Condition Surveys (ADCS). In addition – because most of the questions are quite short – questions covering at least four of the five dimensions should also be included in the SDG survey in order to provide more frequent updates during a period of potentially rapid acceleration in poverty reduction. Given that the household surveys are undergoing a period of change, it is essential that care is taken to avoid inadvertently dropping these critical questions concerning the MPI indicators. For this reason, the precise and exhaustive list of the survey questions used to estimate the MPI are appended to this report.

Second, as is evident, the data can be disaggregated at the province level, but, given the sample size, the confidence intervals do not allow a precise ranking of provinces. Yet, according to the consultations conducted during the design phase, there is an insistent call for high-quality data to be available at the local level. Thus it would be useful and indeed very important for this data priority to be enacted by enlarging the survey size. Lessons from other countries that have done so effectively might be sought. A number of countries include a subset of MPI questions directly in the census, as, again, many of the questions are brief, direct, and feasible (however, questions on employment may not be possible to include accurately in the census). Others enlarge their sample size. In the absence of such data it may be possible to use administrative data and other data sources to proxy the MPI at lower levels of government.

Third, and most important of all, it is vital that the A-MPI be used for policy. Using the A-MPI together with the monetary poverty measure from ALCS may immediately highlight areas of constructive action, even while an updated A-MPI will be useful in the next year or two. To facilitate this, provincial reports must be available in English, Dari, and Pashto. It also requires a pro-active communication outreach in order that citizens, agencies, ministries, lower levels of government, and others understand, own, and can confidently interpret the A-MPI. A calendar of events and strategy of communication for action need to be set.

Frequent monitoring generates visibility, familiarity, and momentum to swiftly redress development gaps through adjustments to policies and programs. Countries with frequent MPI monitoring, such as Colombia which updates measures annually, have been able to reduce their MPI swiftly because the same budget envelope is spent more efficiently using the MPI evidence. Among the substantive policy recommendations is a need to focus on children, as they are a particularly vulnerable group whose high poverty rates also pose additional challenges for the whole country in the future. Actions to improve children's health, education, employment opportunities, and survival chances also affect their potential in the future and hence should be a priority in intersectoral development programs.

Another key observation is that deprivations are interlinked, so an emphasis on integrated policies is apt. Improvements in terms of school attendance, assisted delivery, and food security clearly should be priority components of these programs. A key value-added of the MPI is that it can guide evidence-based budgeting across key social policies and infrastructure investments. The budget allocations should reflect the level of poverty while also rewarding good performance in poverty reduction in the most recent period in order to create strong incentives for policy reduction.

Experience to date has shown that countries with national MPIs that have visible political commitment, statistical rigour, and effective policy coordination across ministries have reduced multidimensional poverty the fastest. The motivation of Afghanistan's new national MPI is to accelerate a reduction in multidimensional poverty – improving policies and resource allocations, and, thereby, improving the lives of the Afghan people.

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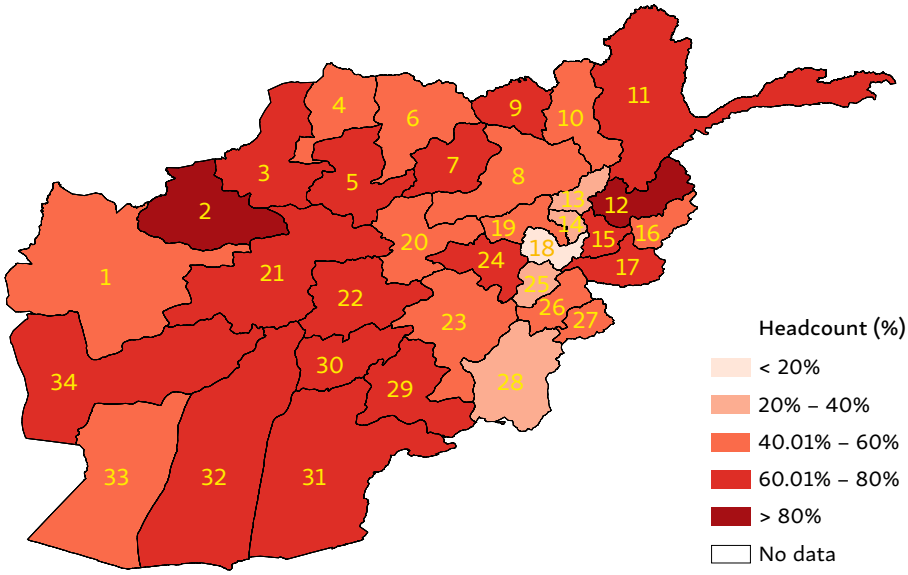
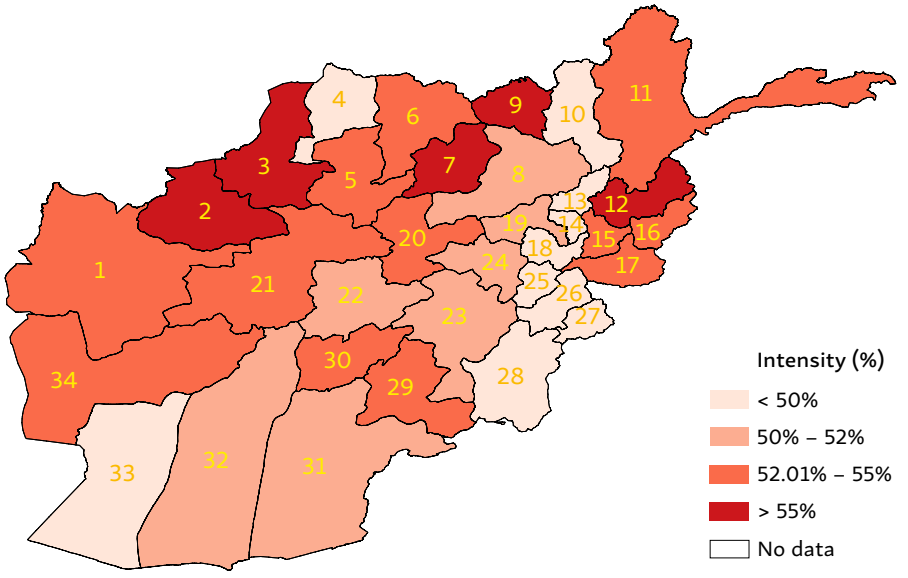
Appendix I – Poverty Maps

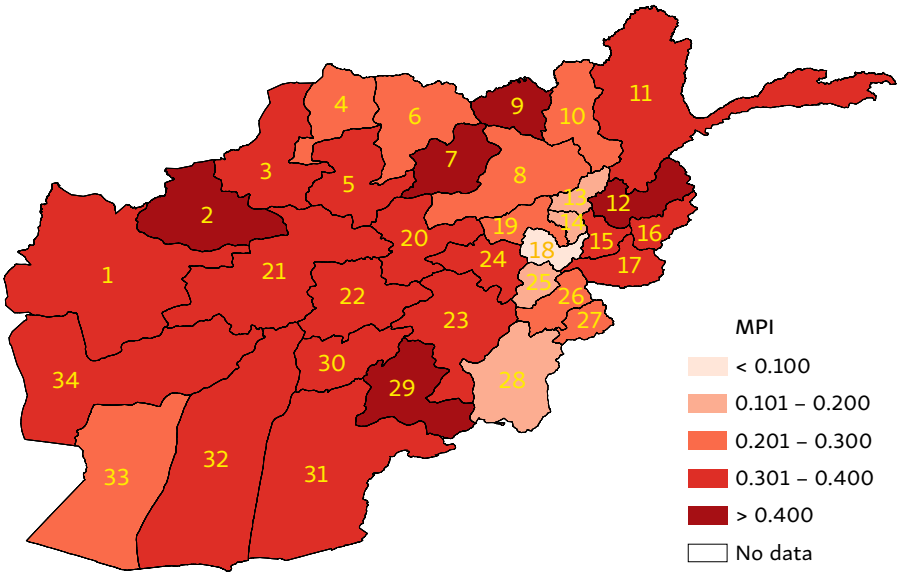
Multidimensional poverty headcount ratio (H) (k = 40%)



Intensity of multidimensional poverty (A)



Multidimensional Poverty Index (MPI)



1.	Herat	18.	Kabul
2.	Badghis	19.	Parwan
3.	Faryab	20.	Bamyan
4.	Jawzjan	21.	Ghor
5.	Sar-e-Pul	22.	Daykundi
6.	Balkh	23.	Ghazni
7.	Samangan	24.	Wardak
8.	Baghlan	25.	Logar
9.	Kunduz	26.	Paktya
10.	Takhar	27.	Khost
11.	Badakhshan	28.	Paktika
12.	Nooristan	29.	Zabul
13.	Panjsher	30.	Urozgan
14.	Kapisa	31.	Kandahar
15.	Laghman	32.	Helmand
16.	Kunarha	33.	Nimroz
17.	Nangarhar	34.	Farah

Appendix II – The Multidimensional Poverty Index: An Adjusted Headcount Ratio

Suppose at a particular point in time, there are n people in Afghanistan and their wellbeing is evaluated by d indicators.[8] We denote the achievement of person i in indicator j by $x_{ij} \in \mathbb{R}$ for all $i = 1,\ldots,n$ and $j = 1,\ldots,d$. The achievements of n persons in d indicators are summarized by an $n \times d$ dimensional matrix $\boldsymbol{X}$, where rows denote persons and columns denote indicators. Each indicator is assigned a weight based on the value of a deprivation relative to other deprivations. The relative weight attached to each indicator j is the same across all persons and is denoted by w_j, such that $w_j > 0$ and $\sum_{j=1}^{d} w_j = 1$.

For a single-dimensional analysis, people are identified as poor as long as they fail to meet a threshold called the 'poverty line' and non-poor, otherwise. In a multidimensional analysis based on a counting approach – as with the adjusted headcount ratio – a person is identified as poor or non-poor in two steps. In the first step, a person is identified as deprived or not in each indicator subject to a deprivation cut-off. We denote the *deprivation cut-off* for indicator j by z_j and the deprivation cut-offs are summarized by vector $\boldsymbol{z}$. Any person i is deprived in any indicator j if $x_{ij} < z_j$ and non-deprived, otherwise. We assign a *deprivation status score* g_{ij} to each person in each dimension based on the deprivation status. If person i is deprived in indicator j, then $g_{ij} = 1$; and $g_{ij} = 0$, otherwise. The second step uses the weighted deprivation status scores of each person in all d indicators to identify the person as poor or not. An overall *deprivation score* $c_i \in [0,1]$ is computed for each person by summing the deprivation status scores of all d indicators, each multiplied by their corresponding weights, such that $c_i = \sum_{j=1}^{d} w_j g_{ij}$. A person is identified as poor if $c_i \geq k$, where $k \in (0,1]$, and non-poor, otherwise.[9] The deprivation scores of all n persons are summarized by vector $\boldsymbol{c}$.

After identifying the set of poor and their deprivation scores, we obtain the adjusted headcount ratio (M_0). Many countries refer to this as the MPI or Multidimensional Poverty Index. The *focus* axiom requires that while measuring poverty the focus should remain only on those identified as poor.[10]

[8] The meaning of the terms 'dimension' and 'indicator' are slightly different in Alkire and Foster (2014) and in Alkire and Santos (2010). In Alkire and Foster (2014), no distinction is made between these two terms. In Alkire and Santos (2010), however, the term 'dimension' refers to a pillar of wellbeing and a dimension may consist of several indicators.

[9] For k=100%, the identification approach is referred to as the *intersection approach*; for $0<k\leq\min\{w_1,\ldots,w_d\}$, it is referred to as the *union approach*; and for $\min\{w_1,\ldots,w_d\}<k<1$, it is referred to as the dual cut-off approach by Alkire and Foster, or more generally as the *intermediate approach*.

This entitles us to obtain the censored deprivation score vector $c(k)$ from $\boldsymbol{c}$, such that $c_i(k)=c_i$ if $c_i \geq k$ and $c_i(k)=0$, otherwise. The M_0 is equal to the average of the censored deprivation scores:

$$M_0 = \text{MPI} = \tfrac{1}{n}\textstyle\sum_{i=1}^{n} c_i(k).$$

PROPERTIES OF THE MULTIDIMENSIONAL POVERTY INDEX

We now outline some of the features of M_0 that are useful for policy analysis. The first is that M_0 can be expressed as a product of two components: the share of the population who are multidimensionally poor, or multidimensional headcount ratio (H), and the average of the deprivation scores among the poor only, or intensity (A). Technically,

$$\text{M}_0 = \text{MPI} = \tfrac{q}{n} \times \tfrac{1}{q}\textstyle\sum_{i=1}^{n} c_i(k) = \text{H} \times \text{A};$$

where q is the number of poor.[11] This feature has an interesting policy implication for inter-temporal analysis. A certain reduction in M_0 may occur either by reducing H or by reducing A. This difference cannot be understood by merely looking at M_0. If a reduction in M_0 occurs merely as the result of a reduction in the number of people who are marginally poor, then H decreases but A may not. On the other hand, if a reduction in M_0 is the result of a reduction in the deprivation of the poorest of the poor, then A decreases but H may not.[12]

The second feature of M_0 is that if the entire population is divided into m mutually exclusive and collectively exhaustive groups, then the overall M_0 can be expressed as a weighted average of the M_0 values of m subgroups, where the weights are the respective population shares. We denote the achievement matrix, the population, and the adjusted headcount ratio of subgroup ℓ by X^{ℓ}, n^{ℓ}, and $M_0(\text{X}^{\ell})$, respectively. Then the overall M_0 can be expressed as

$$M_0 = \text{MPI} = \sum_{\ell=1}^{m} \tfrac{n^{\ell}}{n} \text{M}_0(\text{X}^{\ell}).$$

This feature is also known as *subgroup decomposability* and is useful for understanding the contribution of different subgroups to overall poverty levels. Note that the contribution of a subgroup to overall poverty depends both on the poverty level of that subgroup and that subgroup's population share.

The third feature of M_0 is that it can be expressed as an average of the censored headcount ratios of indicators weighted by their relative weight. The censored headcount ratio of an indicator is the proportion of the population that is multidimensionally poor and is simultaneously deprived in that indicator. Let us denote the censored headcount ratio of indicator j by h_j. Then M_0 can be expressed as

$$M_0 = \text{MPI} = \sum_{j=1}^{d} w_j h_j = \sum_{j=1}^{d} w_j \left[\tfrac{1}{n}\textstyle\sum_{i=1}^{n} g_{ij}(k)\right],$$

where $g_{ij}(k)=g_{ij}$ if $c_i \geq k$ and $g_{ij}(k)=0$, otherwise. Similar relationships can be established between A and deprivations among the poor. Let us denote the proportion of poor people deprived in indicator j by h_j^p. Then, dividing both sides of the above relationship by H, we find

$$A = \tfrac{\text{MPI}}{H} = \sum_{j=1}^{d} w_j \tfrac{h_j}{H} = \sum_{j=1}^{d} w_j h_j^p.$$

Breaking down poverty in this way allows an analysis of multidimensional poverty to depict clearly how different indicators contribute to poverty and how their contributions change over time. Let us denote the contribution of indicator j to M_0 by Φ_j. Then, the contribution of indicator j to M_0 is

$$\Phi_j = w_j \tfrac{h_j}{\text{MPI}} = w_j \tfrac{h_j^p}{\text{A}}.$$

[10] In the multidimensional context, there are two types of focus axioms. One is a deprivation focus, which requires that any increase in already non-deprived achievements should not affect a poverty measure. The other is a poverty focus, which requires that any increase in the achievements of non-poor persons should not affect a poverty measure.

[11] This feature is analogous to that of the poverty gap ratio, which is similarly expressed as a product of the headcount ratio and the average income gap ratio among the poor.

[12] The change in M_0 can be expressed as $\Delta M_0 = \Delta H + \Delta A + \Delta H \times \Delta A$, where Δx is referred to as change in $\boldsymbol{x}$.

Appendix III – Questions Used for MPI Computations

	Question code	Question	Answer option (if closed question)
1.	q3.4 section 4	How old is <name>? For children less than one year write '00'	
2.	q.11.2 section 11	Can <name> read and write?	1 = Yes 2 = No
3.	q3.3 section 3	What is the relationship of <name> to the head of household?	01 = Household head 02 = Husband/ Wife 03 = Son/ Daughter 04 = Son-in-law / Daughter-in-law 05 = Grandchild 06 = Father/ Mother 07 = Nephew or niece 08= Brother/ Sister 09 = Brother-in-law/ Sister-in-law 10 = Other relative 11 = Unrelated member
4.	q3.5 section 3	Is <name> male or female?	1=Male 2=Female
5.	q25.2 section 25 (Maternal and child health)	What is the result of the interview with this woman?	1 = Completed 2 = Not at home 3 = Refused 4 = Partly completed 5 = Incapacitated 6 =Other
6.	q25.3 section 25 (Maternal and child health)	What is your marital status?	1 = Married 2 = Widowed 3 = Divorced or separated
7.	q25.7 section 25 (Maternal and child health)	Have you ever given birth? I mean, even a child that ever cried or breathed or showed any sign of life, but lived only hours or minutes?	1 = Yes 2 = No
8.	q25.8 section 25 (Maternal and child health)	Did you give birth in the last five years?	1 =Yes 2 = No
9.	q3.6. section 3	What is <name's> marital status?	1 = Married 2 = Widowed 3 = Divorced or separated 4 = Engaged 5 = Never married
10.	q25.10 section 25	Did you see anyone for ante-natal care during your last pregnancy?	1 = Yes 2 = No 8=Don't know
11.	q25.11 section 25	How many times did you receive ante-natal care during your last pregnancy?	98 = Don't know
12.	q25.12 section 25	Did you see any of the following persons for ante-natal care during your last pregnancy? A doctor.	1 = Yes 2 = No

13.	q25.13 section 25	Did you see any of the following persons for ante-natal care during your last pregnancy? A midwife or nurse.	1 = Yes 2 = No
14.	q25.14 section 25	Did you see any of the following persons for ante-natal care during your last pregnancy? A traditional birth attendant.	1 = Yes 2 = No
15.	q25.17 section 25	Who assisted with the delivery of your last child?	1 = Doctor 2 = Midwife or nurse 3 = Traditional birth attendant
16.	q25.18 section 25	Where did this delivery take place?	1 = At home or relative's/neighbour's home 2 = Public hospital 3 = Other public health facility 4 = Private health facility 5 = Other
17.	q4.21 section 4	What was the main source of drinking water for members of your household in the past month?	1 = Piped into dwelling 2 = Piped into compound 3 = Public tap/standpipe 4 = Hand pump, used on bore hole, tube well 5 = Spring or kariz, protected 6 = Spring or kariz, unprotected 7 = Well, protected 8 = Well, unprotected 9 = Surface water (river, stream, irrigation channel, lake, pond, lake, kanda) 10 = Tanker tank 11 = Other, specify
18.	q4.19 section 4	What main toilet facility does your household use?	1 = Pit latrine, with slab/covered 2 = Pit latrine, without slab/open 3 = Ventilated improved pit latrine 4 = Flush toilet to sewer system 5 = Flush/pour toilet to septic tank/pit 6 = Flush/pour flush toilet to pit 7 = Flush/pour flush toilet to elsewhere 8 = Single/double vault with urine diversion 9 = Single/double vault without urine diversion 10 = No facility – open field, bush 11 = Other, specify
19.	q4.15 section 4	What is the main source of energy used for lighting the dwelling?	1 = No lighting in the house 2 = Electricity 3 = Gas 4 = Candle 5 = Fuel (oil, kerosene) 6 = Other source
20.	q4.14.a section 4	Has your household had electricity at any time in the past month from any of these sources? Electric grid.	1 = Yes 2 = No
21.	q4.14.b section 5	Has your household had electricity at any time in the past month from any of these sources? Government generator.	1 = Yes 2 = No
22.	q4.14.c section 6	Has your household had electricity at any time in the past month from any of these sources? Private generator (engine).	1 = Yes 2 = No
23.	q4.14.b section 5	Has your household had electricity at any time in the past month from any of these sources? Private dynamo (hydro).	1 = Yes 2 = No

24.	q4.14.c section 6	Has your household had electricity at any time in the past month from any of these sources? Community generator (engine).	1 = Yes 2 = No
25.	q4.14.d section 7	Has your household had electricity at any time in the past month from any of these sources? Community dynamo (hydro).	1 = Yes 2 = No
26.	q4.14.e section 8	Has your household had electricity at any time in the past month from any of these sources? Solar.	1 = Yes 2 = No
27.	q4.14.f section 9	Has your household had electricity at any time in the past month from any of these sources? Wind.	1 = Yes 2 = No
28.	q4.14.g section 10	Has your household had electricity at any time in the past month from any of these sources? Battery.	1 = Yes 2 = No
29.	q4.14.h section 11	In the past month, what has been the household's main source of cooking fuel?	1 = Animal dung 2 = Bushes (ping) twigs/branches 3 = Firewood 4 = Crop residue, trash 5 = Charcoal, coal 6 = Gas 7 = Electricity 8 = Other
30.	q4.14.i section 12	What is the main construction material floor of this dwelling, in the main living area of the family?	1 = Mud/earth 2 = Concrete/tile 3 = Other
31.	q4.3 section 4	What is the main construction material of the roof of the dwelling?	1 = Concrete (with metal) 2 = Wood/wood with mud 3 = Tin/metal 4 = Girder with fired brick 5 = Mud bricks 6 = Other
32.	q4.2 section 4	What is the main construction material of the exterior walls of the dwelling in the main living area of the family?	1 = Fired brick/stone 2 = Concrete/cement 3 = Mud bricks/mud 4 = Stone/mud 5 = Other
33.	q7.1.a section 7	How many of the following items does your household own? Number of refrigerators.	
34.	q7.1.b section 7	How many of the following items does your household own? Number of washing machines.	
35.	q7.1.c section 7	How many of the following items does your household own? Vacuum cleaners.	
36.	q7.1.f section 7	How many of the following items does your household own? Number of stoves / gas cylinders.	
37.	q7.1.i section 7	How many of the following items does your household own? Number of irons.	
38.	q7.1.l section 7	How many of the following items does your household own? Number of televisions.	

39.	q7.6.a section 7	How many of the following items does your household own? Number of mobiles phones.	
40.	q7.6.e section 7	How many of the following items does your household own? Number of satellite dishes.	
41.	q7.1.o section 7	How many of the following items does your household own? Number of bicycles.	
42.	q7.1.p section 7	How many of the following items does your household own? Number of motorcycles.	
43.	q7.1.q section 7	How many of the following items does your household own? Number of cars.	
44.	q11.5 section 11	Did <name> ever attend school?	1 = Yes 2 = No
45.	q11.7 section 11	What is the highest level of formal school <name> attended?	1 = Primary (1–6) 2 = Lower secondary (7–9) 3 = Upper secondary (10–12) 4 = Teacher college (13–14) 5 = University (13–16) or technical college (13–14) 6 = Post graduate (17–19) 7 = Islamic school (1–14)
46.	q11.8 section 11	What is the highest grade <name> completed? If no grade completed write '00'.	1 = Primary (1–6) 2 = Lower secondary (7–9) 3 = Upper secondary (10–12) 4 = Teacher college (13–14) 5 = University (13–16) or technical college (13–14) 6 = Post graduate (17–19) 7 = Islamic school (1–14)
47.	q.11.2 section 11	Can <name> read and write?	1 = Yes 2 = No
48.	q.11.9 section 11	Did <name> ever attend school/other education in <year>?	1 = Yes 2 = No
49.	q.11.11 section 11	What was the main reason that <name> did not attend school in <year>?	1 = No school/school too far 2 =Child too young 3 = Child needed to work 4 = Family doesn't allow 5 = School did not allow 6 = No female teachers 7 = Marriage 8 = Poor health/disability 9 = Studied as far as needed 10 = Did not like school/did not learn enough 11 = Schooling too expensive 12 = School temporary not functioning 13 = Security concern 14 = Did not have sufficient grades to continue/failed exams 15 = Other reason
50.		Activity status	1 = Employed 2 = Underemployed 3 = Unemployed 4 = Inactive

51.	q.11.4 section 11	Did <name> have vocational or technical training last 12 months?	1 = Yes 2 = No
52.	q.11.12 section 11	Did <name> ever attend school/other education in <year>?	1 = Yes 2 = No
53.	q.10.1 section 10	In the last 12 months has the household experienced any events that had strongly negative effects on the members of the household?	1 = Yes 2 = No
54.	q.10.3 section 10	What was the severity of this shock? Reduced drinking water.	1 = Light 2 = Moderate 3 = Severe
55.	q.10.3 section 10	What was the severity of this shock? Reduced agricultural water.	1 = Light 2 = Moderate 3 = Severe
56.	q.10.3 section 10	What was the severity of this shock? High level of crop pests or diseases.	1 = Light 2 = Moderate 3 = Severe
57.	q.10.3 section 10	What was the severity of this shock? Severe loss of opium production.	1 = Light 2 = Moderate 3 = Severe
58.	q.10.3 section 10	What was the severity of this shock? Unusually high level livestock diseases.	1 = Light 2 = Moderate 3 = Severe
59.	q.10.3 section 10	What was the severity of this shock? Reduced availability of grazing areas.	1 = Light 2 = Moderate 3 = Severe
60.	q.10.3 section 10	What was the severity of this shock? Reduced availability of Kuchi migration routes.	1 = Light 2 = Moderate 3 = Severe
61.	q.10.3 section 10	What was the severity of this shock? Natural disaster (earthquakes, landslides, avalanches).	1 = Light 2 = Moderate 3 = Severe
62.	q.10.3 section 10	What was the severity of this shock? Extreme weather conditions.	1 = Light 2 = Moderate 3 = Severe
63.	q.10.3 section 10	What was the severity of this shock? Large influx of returnee households.	1 = Light 2 = Moderate 3 = Severe
64.	q.10.3 section 10	What was the severity of this shock? Unusually high increases in food prices.	1 = Light 2 = Moderate 3 = Severe
65.	q.10.3 section 10	What was the severity of this shock? Unusual decrease in farm gate prices.	1 = Light 2 = Moderate 3 = Severe
66.	q.10.3 section 10	What was the severity of this shock? Strongly reduced household income.	1 = Light 2 = Moderate 3 = Severe
67.	q.10.3 section 10	What was the severity of this shock? Serious illness, accident, or death of working household member.	1 = Light 2 = Moderate 3 = Severe
68.	q.10.3 section 10	What was the severity of this shock? Serious illness, accident, or death of other household member.	1 = Light 2 = Moderate 3 = Severe

69.	q.10.3 section 10	What was the severity of this shock? Loss of house, land, or livestock.	1 = Light 2 = Moderate 3 = Severe
70.	q.10.3 section 10	What was the severity of this shock? Insecurity, violence, theft.	1 = Light 2 = Moderate 3 = Severe
71.	q.1.5 section 1	Residence code.	1 = Urban 2 = Rural 3 = Kuchi
72.	q.10.9 section 10	How do you rate the security situation in the district?	1 = Very secure 2 = Moderately secure 3 = Not secure 4 = Moderately insecure 5 = Very insecure
73.	q.10.10 section 10	Is this household currently displaced because of violence or insecurity in the usual place of residence?	1 = Yes 2 = No
74	q.10.20 section 10	From what government assistance to this community would your household benefit most? Circle one answer for first, second, and third priority each.	1 = Improved drinking water quantity 2 = Improved drinking water quality 3 = Rehabilitation of irrigation system 4 = Construction or repair of local roads 5 = Bridge construction/rehabilitation 6 = New/improved local health facilities 7 = New/improved local education facilities for girls 8 = New/improved local education facilities for boys 9 = New/improved local education facilities for girls and boys 10 = New/improved housing in community 11 = Improved agricultural services 12 = Improved veterinary services 13 = New/improved micro-credit schemes 14 = Increased employment opportunities for women 15 = Increased employment opportunities for men 16 = Increased employment opportunities for women and men 17 = Literacy training for women 18 = Literacy training for men 19 = Literacy training for both women and men 20 = Vocational skills training for women 21 = Vocational skills training for men 22 = Vocational skills training for both women and men 23 = Electricity provision 24 = Reformed/improved local justice systems 25 = Increased security 26 = Disarmament of local militia/ commanders 27 = Local land or housing dispute settlement mechanisms 28 = Other
75.	q.5.1 section 5	Does any of the household own any livestock at the present time – not including poultry?	1 = Yes 2 = No
76.	q.5.2 section 5	How many of the following animals – including offspring – does your household own today? Cattle – meat and dairy.	

77.	q.5.2 section 5	How many of the following animals – including offspring – does your household own today? Number of goats.	
78.	q.5.2 section 5	How many of the following animals – including offspring – does your household own today? Number of sheep.	
79.	q.5.2 section 5	How many of the following animals – including offspring – does your household own today? Number of donkeys.	
80.	q.5.2 section 5	How many of the following animals – including offspring – does your household own today? Number of oxen, yaks.	
81.	q.5.2 section 5	How many of the following animals – including offspring – does your household own today? Number of camels.	
82.	q.6.1 section 6	Do any of your household members own any irrigated farmland – not including garden plots?	1 = Yes 2 = No
83.	q.6.2 section 6	How many jeribs of irrigated farmland – without garden-plot – did your household own in the spring harvesting season <year>?	

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ADDITIONAL QUESTIONS USED FOR MPI DECOMPOSITIONS

	Question code	Question	Answer options (if closed question)
1.	q3.4 section 4	How old is <name> For children less than one year write '00'	
2.	q1.1 Section 1	Province	01 = Kabul 02 = Kapisa 03 = Parwan 04 = Wardak 05 = Logar 06 = Nangarhar 07 = Laghman 08 = Panjsher 09 = Baghlan 10 = Bamyan 11 = Ghazni 12 = Paktika 13 = Paktya 14 = Khost 15 = Kunarha 16 = Nooristan 17 = Badakhshan 18 = Takhar 19 = Kunduz 20 = Samangan 21 = Balkh 22 = Sar-e-Pul 23 = Ghor 24 = Daykundi 25 = Urozgan 26 = Zabul 27 = Kandahar 28 = Jawzjan 29 = Faryab 30 = Helmand 31 = Badghis 32 = Herat 33 = Farah 34 = Nimroz

Notes

Notes

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