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Economic and Social Commission for Western Asia

# Proposal for a Revised Multidimensional Poverty Index for Arab Countries



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# Introduction

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In September 2017, after its adoption by the Arab Social Ministerial Council, the first Arab Multidimensional Poverty Report was published following three years of policy debate and research by the Economic and Social Commission for Western Asia (ESCWA), the United Nations Children’s Fund (UNICEF) and the Oxford Poverty and Human Development Initiative (OPHI), in consultation with the League of Arab States. This extensive collaboration aimed to rethink the measurement of child and household poverty from a regional perspective, and offer tailored policy solutions that promote poverty reduction beyond eradicating extreme deprivation. The departure point for measuring household poverty was the OPHI global Multidimensional Poverty Index (MPI), which was revised and adapted through an iterative consultative process with regional and global experts and representatives of Arab Governments, so as to define poverty dimensions and indicators of relevance to the region’s diverse social and economic contexts and challenges.

The 2017 Arab Multidimensional Poverty Report adopted the Alkire-Foster method, and proposed an Arab MPI that assessed non-monetary deprivations across three dimensions: education, health, and living standards. Tailored to the Arab region’s conditions, the report defined two levels of poverty: ‘acute poverty cut-off’ to capture extreme forms of multidimensional poverty, and ‘poverty cut-off’ that introduced poverty

definitions corresponding to moderate degrees of deprivation in middle-income and medium-ranked human development countries. The introduction of moderate poverty was considered consistent with the development status of the majority of Arab countries. It reflected the policy focus of national Governments on combating moderate degrees of deprivation, since substantial progress had been made on reducing extreme poverty in the early 2000s. The focus on moderate poverty also aligned with the way national moneymetric poverty lines were set in the Arab region, ensuring policy relevance and complementarity between multidimensional poverty and moneymetric poverty measures.

The Arab MPI has undoubtedly made an important contribution to poverty measurement and policy debates in the region. At its fourth session, held in Beirut on 20 January 2019, the Arab Development Summit approved the Arab Strategic Framework for the Eradication of Multidimensional Poverty 2020-2030, with an overarching target of halving multidimensional poverty by 2030. Two other high-level regional initiatives and decisions came about as a result of the findings of the Arab MPI, namely a decision by the Arab Summit at its twenty-seventh session to prioritize the eradication of multidimensional poverty, and a decision by the Arab Summit at its twenty-ninth ordinary session on the establishment of the Arab Centre for Social Policy Studies and Eradication of Poverty in Arab States.

The success of the first Arab Multidimensional Poverty Report and the decision by the Arab

Summit to adopt the Arab Strategic Framework for the Eradication of Multidimensional Poverty brought an added responsibility to the League of Arab States, ESCWA and partner institutions, particularly with regard to consultations on the second Arab Multidimensional Poverty Report during the difficult times the region is currently facing. Much has changed in the region since 2013, when consultations started on the first Arab MPI. In some countries, development gains have been lost as a result of conflicts and economic crises, and their spillovers on gender equality, food security, health and education. One telling indicator is the number of money metric poor using nationally defined poverty lines, which jumped from 66 million in 2010 (22.8 per cent of the population of 14 Arab countries) to 101 million in 2019 (30 per cent). The economic slowdown caused by COVID-19, and other natural and man-made disasters, is expected to further negatively impact the health and education sectors, jobs, incomes, business and remittance flows in the Arab region, leaving an additional 16 million people in money metric poverty.<sup>1</sup>

Extensive discussions took place between ESCWA, OPHI, the League of Arab States and their partners on whether there was a need to improve the Arab MPI and, if so, how to better tailor it to capture poverty from the regional perspective so as to address recent challenges. An ESCWA background paper setting out initial suggestions and scenarios for revisions was discussed at an expert group

meeting organized by ESWCA and the League of Arab States in Amman on 18 and 19 December 2019, attended by representatives of OPHI, UNICEF, the United Nations Population Fund, the Arab Centre for Social Policy Studies and Poverty Eradication and by regional experts. The meeting ended with an agreement on the need to revise the Arab MPI, and many constructive suggestions for improvements were discussed. Specifically, the meeting highlighted the need to refine the Arab MPI to better capture moderate poverty levels and take into account the increasing levels of economic hardship in many Arab countries. Participants also highlighted that changes in the availability of surveys and data in the region called for enhancements in terms of content and technical definitions to achieve better inter-country comparisons while retaining temporal comparisons.

In the subsequent months, follow-up working papers were prepared and circulated among partners with detailed methodological proposals, results and robustness checks. The present document, which sets out the final proposal for the revised Arab MPI, is a result of this technical work undertaken by ESCWA and OPHI to incorporate all comments received during the expert group meeting and in response to the transitional working papers, implement further empirical refinements, and conduct validation tests on all components of the finalized revised framework.

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<sup>1</sup> Khalid Abu-Ismaïl, Impact of COVID-19 on income poverty in Arab countries (ESCWA, 2020). Available at [www.unescwa.org/publications/impact-covid-19-money-metric-poverty-arab-countries](http://www.unescwa.org/publications/impact-covid-19-money-metric-poverty-arab-countries).



# I. Framework for the Revised Arab MPI

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The revised Arab MPI proposal builds on the conceptual framework of the first Arab MPI, which embraces Amartya Sen's capability approach, while being guided by recent developments in multidimensional poverty research.

As noted above, the revised Arab MPI offers a more regional perspective on poverty, so as to better capture the manifestations of moderate poverty in Arab middle-income countries. To this end, the proposed revised Arab MPI index focuses on moderate levels of deprivation in its structure, dimensions and indicators, while the global MPI will serve as a frame of reference for measuring extreme multidimensional deprivation.

In terms of the index's structure, and based on the recommendations of the expert group meeting, the main innovation in the revised Arab MPI is its assessment of poverty in both material and social capability spaces, giving both pillars equal importance. This approach provides a more comprehensive and balanced representation of multidimensional poverty in the region, particularly as Arab countries have witnessed progress in social wellbeing but less so in material and living-conditions wellbeing. This normative stance is reflected in the adoption of an equal weighting scheme between the two pillars.

Within the two pillars, poverty dimensions also carry similar importance. The choice of dimensions and indicators in the revised framework, and their respective definitions, weights and deprivation thresholds, is made in

consideration of their relevance to moderate poverty in the region, the principles of human rights and the Sustainable Development Goals (SDGs), their statistical properties, and data availability within and across surveys. The choice is also the product of continuous consultations with OPHI and the League of Arab States, and a participatory process with other partners.

The following sections describe these two pillars, their dimensions, and the indicators within each dimension. They also compare the inclusion and definition of indicators relative to the original Arab MPI, and provide detailed descriptions in tables A.1 and A.2 in the annex to the present document.

## A. Capability wellbeing pillar

The capability (or non-monetary) wellbeing pillar is reflected in two equally-weighted dimensions: health and education, each with three indicators. The importance of health and education in early years and beyond is well recognized: both have long-term impacts on various aspects of wellbeing and contribute to shaping individuals' cognitive abilities and knowledge, school-to-work transition and employment opportunities. Consequently, both dimensions are integral parts of the 2030 Agenda for Sustainable Development.

The health and nutrition dimension comprises three indicators on child mortality, early pregnancy and child nutrition. Child mortality is considered a fundamental indicator of child health

and overall development in a country, as it reflects unmet essential needs such as access to basic health services, nutrition, water and sanitation.<sup>2</sup> Many early child deaths in the region are linked to preventable or treatable causes, such as preterm birth complications, pneumonia, congenital anomalies, diarrhoea and malaria. The assessment of child mortality is extended over the past 10 years, instead of the past five years in the original Arab MPI, for practical statistical reasons and to capture a larger segment of population.

The second indicator, malnutrition, increases the vulnerability of children to severe diseases.<sup>3</sup> Poor nutrition further affects children's growth and development processes and could, in the case of chronic malnutrition (stunting), have a lifelong irreversible impact, including impaired physical, cognitive and socio-emotive development. Poor families might be ill-equipped to manage their children's health conditions and nutritional deficiencies, thus increasing the risk of developing complications.<sup>4</sup> The child malnutrition indicator is a union of cases of child stunting and underweight in a household, both defined in accordance with the World Health Organization's (WHO) child growth standards. Relative to the nutrition indicator in the original Arab MPI, the revised index improves the nutrition indicator's statistical properties and comparability across countries by considering underweight instead of wasting so as to avoid any seasonality biasness that the latter may introduce, and by excluding adult malnutrition owing to data coverage issues across countries. The health and nutrition of adults are also important indicators for

MPI, but existing household surveys lack the requisite data.

The third indicator of the health dimension concerns early pregnancy, which puts adolescent girls and their newborns at high health and developmental risks. Pregnancy complications can result in maternal morbidity and mortality;<sup>5</sup> they are the leading causes of mortality among girls aged 15-19.<sup>6</sup> Newborns from early pregnancies are also at a higher risk of low-birth weight, infant mortality and other neonatal problems. Early childbearing may further limit young girls' capabilities, including education and employment opportunities, and increase the risk of social vulnerability, including domestic violence. The early pregnancy indicator in the revised framework is computed for the entire youth cohort aged 15-24, which accounts for all early pregnancies that have been identified among current young people up to the time of survey fieldwork. Early pregnancy was combined with female genital mutilations (FGM) in the Arab MPI. Nonetheless, FGM was excluded in the revised framework for comparability purposes, as data are not available in most countries. Supplementary analysis however will report on FGM for countries with available data.

The education dimension includes three indicators: school attendance, age-schooling gap, and adults' educational attainment. School attendance is a human rights matter, subject to legal protection in many countries. It is well established in literature that school attendance, rather than enrolment, better captures educational deprivation, since enrolled students could have chronic absences from

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<sup>2</sup> World Health Organization, Children: reducing mortality, 19 September 2019. Available at [www.who.int/news-room/fact-sheets/detail/children-reducing-mortality](http://www.who.int/news-room/fact-sheets/detail/children-reducing-mortality).

<sup>3</sup> UNICEF, Levels and Trends in Child Mortality Report 2019.

<sup>4</sup> Anne Case and Christina Paxson, Children's health and social mobility, *The Future of Children*, vol. 16, No. 2 (2006), pp. 151-173.

<sup>5</sup> WHO, Adolescent pregnancy fact sheets, 31 January 2020. Available at <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>.

<sup>6</sup> Ibid.

school for various socioeconomic reasons, which could negatively impact their school performance, skill acquisition, and likelihood of school drop-out. The second indicator is age schooling gap. Evidence suggests that school retention owing to over-age or repetition could increase the probability of school drop-out. Children who live in poor households are more likely to repeat grades and leave school early, which affects the timing and quality of their skill acquisition, their development and their life prospects.<sup>7</sup> School attendance and age schooling gap indicators are evaluated for school-aged children (8-17 years old), for whom the necessary survey questions are available. Compared with the original Arab MPI, the age-schooling gap indicator is split from the school-attendance indicator to emphasize that the two indicators capture different concepts and need to be addressed separately. This also emphasizes the quality and time-appropriateness of learning in a region notorious for child labour and school absenteeism, which are consistent with moderate deprivation.

The third indicator concerns adults' (aged 18 and above) educational attainment. At least one adult household member must have completed secondary education for a household to be deemed non-deprived. This indicator captures several capabilities, including the ability to go to university, have decent employment, engage in other market and social interactions, and move a household out of poverty. While educational attainment of adults is a stock variable for most households, its benefits interact with changing economic conditions and public policies. Moreover, some countries have implemented policies that promote later-life up-skilling of their labour force. The age restriction of 18 and above was newly added to better target the adult

population, and enhance the statistical properties of the indicator by restricting it to the group for whom the variable is well defined.

In both the health and education dimensions, data scarcity did not allow the inclusion of other indicators to capture quality of health and education services or other important aspects, such as health insurance and coverage. These indicators are recommended for inclusion once data become available in future surveys.

## B. Living standards pillar

The material wellbeing pillar, defined as the living conditions dimension under the original Arab MPI, is newly divided into three equally-weighted dimensions: housing, access to services, and assets. The 2030 Agenda emphasizes the need to ensure decent housing, defined as adequate, safe and affordable housing and basic services. Inadequate housing - a form of poverty manifestation - remains a major challenge in the region, particularly if the quality aspect is factored in. The two elements of housing and basic services are distinguished by introducing two separate dimensions: the housing dimension assesses individuals' personal access to an adequate stock of living space and type of shelter; and the services dimension gauges the availability of utilities in local communities or living quarters. The third dimension, assets, measures personal access to a stock of portable resources independent of individuals' home conditions. The introduction of a separate assets dimension gauges households' access to functions provided by various basic assets, and offers a proxy for material scarcity.

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<sup>7</sup> United Nations Educational, Scientific and Cultural Organization (UNESCO), *Opportunities lost: The impact of grade repetition and early school leaving*, 2012.

The housing dimension consists of two indicators: overcrowding and type of dwelling. Overcrowding is a reflection of inadequate housing size. While UN-Habitat defines overcrowding as four and above persons of any age per habitable room, the threshold in the revised Arab MPI is lowered to three or more per sleeping room, since information on total rooms in the house is unavailable across many surveys. Moreover, the revised Arab MPI introduces an age cut-off of 5 and above in consideration of Arab norms and the importance of a child's privacy. The second indicator on the type of dwelling captures additional aspects of inadequate housing tailored to the Arab region's circumstances. Inadequate dwelling is now a function of the presence of a non-permanent floor or roof, or a home type that is not a stand-alone house or apartment.

The access to services dimension includes three indicators that are deemed essential basic services: improved drinking water, improved sanitation, and electricity. Improved drinking water is defined as water piped into a dwelling or yard, and now includes bottled water as an improved source thus allowing for households' choice at the moderate poverty level. Improved sanitation and electricity retain their definition from the original Arab MPI framework. The classification of improved and unimproved water and sanitation facilities closely follows the latest WHO and UNICEF Joint Monitor Programme (JMP) guidelines. While the SDGs employ more refined

definitions of safely managed drinking water and sanitation to capture the quality aspect, these definitions are not feasible in the regional framework, as the vast majority of surveys lack the required information.<sup>8</sup> Indicators that capture the quality of services are recommended for inclusion once data become available in future surveys.

The assets dimension includes three asset classes as separate indicators, as opposed to combining them into a single assets indicator as in the original Arab MPI: communication assets (phone of any type, television, computer), mobility assets (car/truck, motorcycle, bicycle), and livelihood assets (refrigerator, washing machine, heater or air conditioner). In each of these asset groups, households are classified as deprived if they have access to none of the communication devices, vehicles, or home appliances. This recognizes households' choice whether to retain any one particular asset. The selected assets serve two purposes: firstly, as indicators for enhanced individual capacities to deliver particular functions (mobility, communication, and adequate livelihood) and thus enhanced achievement of particular capabilities; and secondly, they measure material scarcity affecting households' ability to acquire and maintain basic assets. Particular attention has been given to data availability criteria across surveys to minimize biases and improve comparability across countries relative to the original Arab MPI.

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<sup>8</sup> For instance, safely managed drinking water would require data on accessibility (e.g. travel time, if not piped into dwelling), share of time when the water source is available, quality of water (absence of faecal indicator bacteria in a 100 mL sample, such as *Escherichia coli*). The data on the latter two elements are not available in the majority of surveys. However, several surveys do provide data that could be used to measure accessibility.

## II. Framework, Weights, Poverty Identification and Aggregation

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The revised Arab MPI consists of two pillars, five dimensions and 14 indicators, all with cut-offs aimed at consistently capturing moderate multidimensional deprivation, and with weights recognizing the equal importance of the two pillars, and the relative importance of all dimensions and all indicators within each dimension (table A.1). The classification of multidimensional poverty applies to households with a deprivation score strictly higher than 20 per cent of all weighted indicators. This poverty identification cut-off is selected for its preferred conceptual properties, thus better capturing moderate and less severe forms of poverty.<sup>9</sup> As in the original Arab MPI, the Alkire-Foster aggregation methodology is employed.<sup>10</sup> The poverty headcount (H) is reported, defined as the percentage of people living in multidimensionally poor households, and intensity of poverty (A) defined as average of weighted deprivations experienced by the poor. The adjusted poverty headcount (revised MPI) is then

derived by multiplying the headcount ratio by the intensity of poverty ( $MPI=H \times A$ ). A forthcoming technical paper presents detailed results of advanced statistical redundancy and robustness tests for the revised MPI.

As argued in preceding paragraphs, the revised MPI structure and framework, including the selection of indicators, cut-offs and weights, better reflects moderate deprivation. Moreover, the revised MPI framework attains better comparability across countries (and potentially over time) because the indicators are selected with a view of their availability across surveys, and moderate deprivation better reflects living conditions and policy concerns in the majority of Arab countries in recent years. Lastly, the technical definition of indicators has also been reviewed compared with the original Arab MPI, offering more consistency across indicators and surveys in instances with missing or outlying values of variables.

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<sup>9</sup> Advanced robustness techniques are being applied to further test its statistical robustness. Results will be presented in a forthcoming technical paper.

<sup>10</sup> For detailed explanation on Alkire-Foster methodology See Alkire, S., Foster, J. E., Seth, S., Santos, M. E., Roche, J. M., and Ballon, P. (2015). *Multidimensional Poverty Measurement and Analysis*, Oxford: Oxford University Press, ch.5.

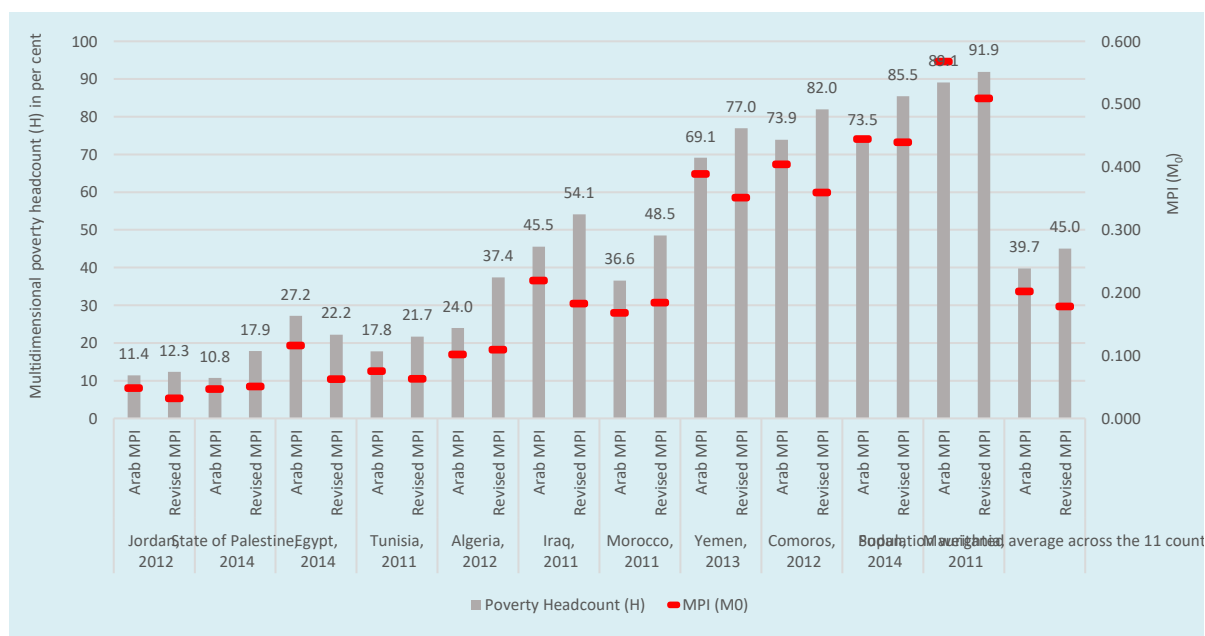


### III. Preliminary Results

Figures 1 and 2 present the preliminary results of the revised MPI, along with those of the original Arab MPI at the poverty threshold. The countries selected are the same ones included in the first Arab Multidimensional Poverty Report to allow for comparability of results. Countries are shown in ascending order based on the revised MPI score ( $M_0$ ). The revised multidimensional poverty headcounts range from 12.3 per cent in Jordan to a high of 91.9 per cent in Mauritania. Figure 1 shows that the majority of countries exhibit increases in multidimensional poverty incidence using the revised MPI, with the rate of increase relative to the original Arab MPI being higher in middle-income

countries, in general, given that the revised MPI is tailored to better capture poverty in those countries. The average intensity of deprivation is near or exceeds 30 per cent in the majority of countries, and exceeds 50 per cent in two Arab least developed countries (LDCs), Mauritania and the Sudan. At the regional level, 45 per cent of residents (population weighted) suffer from multidimensional poverty when using the revised MPI, with an average deprivation intensity of around 35 per cent. These changes yield an MPI value of near 0.180 on average (population weighted) across the 11 countries.

**Figure 1. Multidimensional poverty headcount (left scale) and  $M_0$  index (right scale): original Arab MPI versus revised MPI**



**Source:** ESCWA calculations and E/ESCWA/EDID/2017/2.

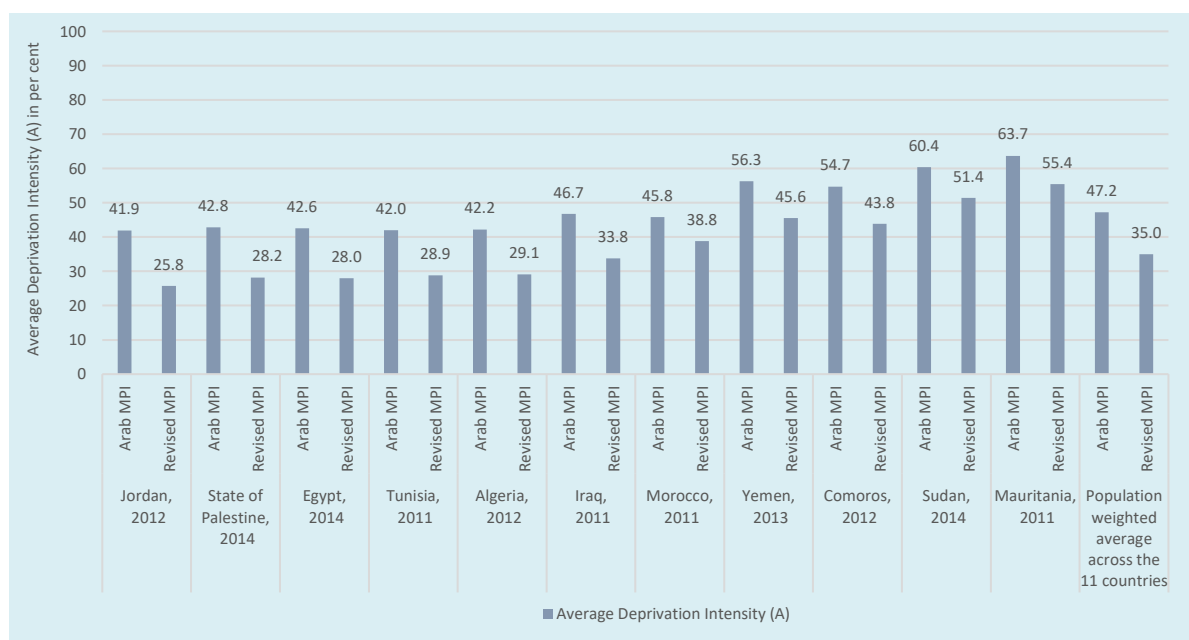
**Notes:** The State of Palestine was not included in the first Arab Multidimensional Poverty Report (2017). Population weighted averages across 11 countries are computed using the population in 2015. Population data is retrieved from the World Bank database (accessed on 30 July 2019).

These combined results at the regional and country levels mean that under the policy objective adopted by the Arab Summit of halving MPI, progress monitoring will not be disrupted by the proposed revisions. The poverty headcounts and MPI scores using the revised index - similar to the original Arab MPI - show that the poverty scale and intensity are high in Arab LDCs and in many non-LDC Arab countries (figure 2). The changes in the results between the two frameworks reflect the changes made to better capture moderate poverty: the selection of dimensions and indicators, of deprivation cut-offs and weights, and of the multidimensional poverty identification cut-off. Therefore, the somewhat higher poverty headcounts coupled with lower average intensities

of deprivation, at both the national and regional levels, in the revised framework are due to the revised index's structure, including the lower poverty cut-off, which tends to capture moderate and less severe forms of poverty.

In terms of poverty composition, figure 3 shows that education remains a lead contributor to multidimensional poverty, consistent with the findings of the first Arab Multidimensional Poverty Report. Yet, the combined contributions of the housing, access to services and assets dimensions exceed the combined contributions of health and education in various countries, suggesting that gains in material wellbeing in the region may be lagging behind those in human capital.

**Figure 2. Average deprivation intensity (percentage): original Arab MPI versus revised MPI**

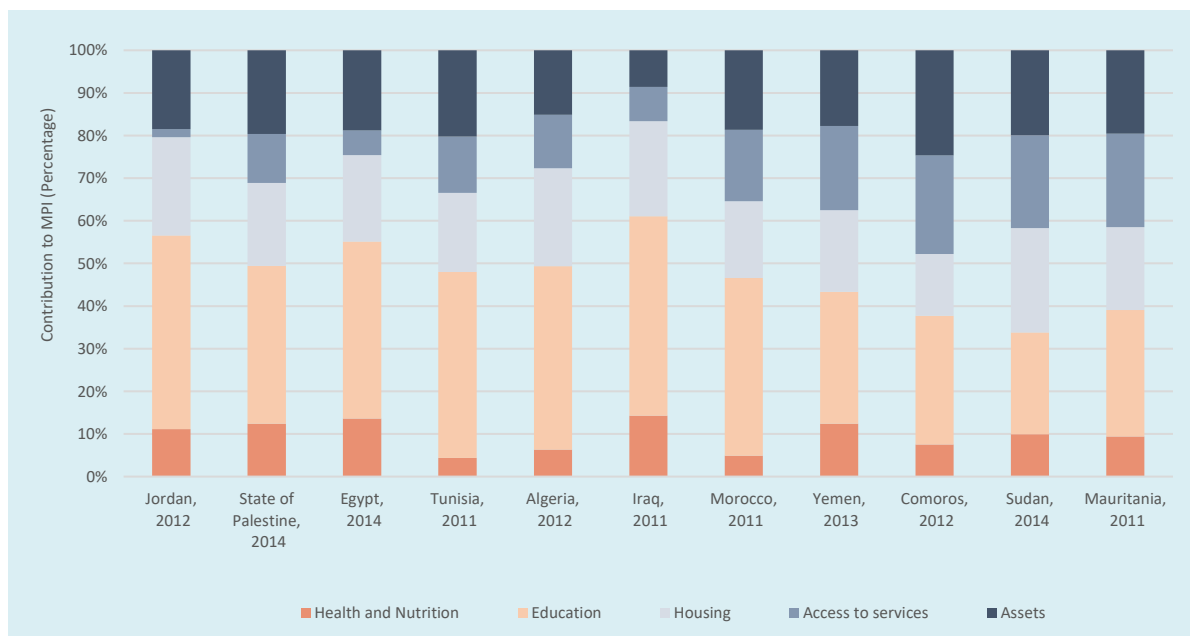


**Source:** ESCWA calculations and E/ESCWA/EDID/2017/2.

**Notes:** The State of Palestine was not included in the first Arab Multidimensional Poverty Report. Population weighted averages across 11 countries are computed using the population in 2015. Population data is retrieved from the World Bank database (accessed on 30 July 2019).



**Figure 3.** Contribution of dimensions to multidimensional poverty (percentage), revised Arab MPI



Source: ESCWA calculations.

Notes: The State of Palestine was not included in the first Arab Multidimensional Poverty Report.



## IV. Conclusion

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The original Arab MPI was revised based on the recommendation of an expert group meeting held in Amman in December 2019, at which the League of Arab States, partnering United Nations institutions, OPHI and regional experts agreed to undertake improvements to the measure, so as to reflect the developmental reality of the majority of Arab countries, facilitate comparability across countries, and comply with data availability in regional demographic and health surveys.

The work conducted by the ESCWA team, in partnership with the League of Arab States and OPHI over the eight months since the Amman expert group meeting, confirms with a high degree of confidence that the revised Arab MPI has favourable conceptual and statistical

properties in portraying the Arab region's moderate-level poverty in its various dimensions.

The proposed framework will be used to prepare the second Arab Multidimensional Poverty Report. In view of the ongoing effects of COVID-19 on moneymetric and multidimensional poverty in the region, and the need to understand them, the upcoming report will include a chapter on the projected impacts of the pandemic on regional poverty.

Lastly, the present proposal for a Revised Multidimensional Poverty Index for Arab Countries is an opportunity to call on all Arab countries to provide the necessary data to compute the revised index, which deals with development issues of concern to all Arab countries, both rich and poor.



# Annex

**Table A.1** Revised Arab MPI Framework

A household is considered multidimensionally poor if its total deprivation score is > 20%			
Pillar and weight assigned	Dimension	Indicator and weight assigned	Deprived if
Capability (non-material) wellbeing (weight=50%)	Health and nutrition (weight = 50/2%)	Child mortality (weight = 50/6%)	Any child in the household died before the age of 5 during the past 10 years.
		Child nutrition (weight = 50/6%)	Any child (0-59 months) is stunted (height for age < -2) or any child is underweight (weight for age < -2).
		Early pregnancy (weight = 50/6%)	Any women aged 15-24 in the household gave birth before the age of 18.
	Education (weight = 50/2%)	School attendance (weight = 50/6%)	Any child in the household aged 6-17 is not attending school and has not completed secondary education.
		Age schooling gap (weight = 50/6%)	Any child aged 8-17 is enrolled at two grades or more below the appropriate grade for their age.
		Educational attainment – 18+ (weight=50/6%)	All household members aged 18+ have not completed secondary education.
Living standards (material) wellbeing (weight= 50%)	Housing (weight = 50/3%)	Overcrowding (weight = 50/6%)	The household has three persons or more, aged 5+ years, per sleeping room.
		Type of dwelling (weight = 50/6%)	The housing situation fits at least one of the following conditions: (i) home is a place other than a stand-alone house or apartment; (ii) it has a non-permanent floor; or (iii) it has a non-permanent roof. <sup>a</sup>
	Access to services (weight = 50/3%)	Improved drinking water (weight = 50/9%)	The household does not have any of the following sources: piped water into a dwelling, piped water into a yard, or bottled water.
		Improved sanitation (weight = 50/9%)	The household does not have access to improved sanitation <sup>b</sup> or it is improved but shared with other households.
		Electricity (weight = 50/9%)	The household does not have access to electricity.
	Assets (weight = 50/3%)	Communication assets (weight = 50/9%)	The household has no phone (mobile or landline), television or computer.
		Mobility assets (weight = 50/9%)	The household has no car/truck, motorbike or bicycle.
		Livelihood assets (weight = 50/9%)	The household has no fridge, washer, any type of heaters, or any type of air conditioning/cooler.

- <sup>a</sup> Non-permanent floor includes earth, sand, dung or rudimentary (wood planks/bamboo/reeds/grass/canes). Non-permanent roof includes the roof being unavailable or made of thatch, palm leaf, sod, rustic mat, palm, bamboo, wood plank or cardboard.
- <sup>b</sup> Improved sanitation facilities in line with the WHO and UNICEF JMP guidelines includes flush/pour flush to piped sewer system, septic tanks or pit latrines; and ventilated improved pit latrines, composting toilets or pit latrines with slabs.

**Table A.2** Revised MPI indicators relative to the previous Arab MPI

Dimension	Indicator	Indicator comparison with previous Arab MPI
Health and nutrition	Child mortality	In the previous Arab MPI, child mortality was measured 'during the past five years'; however, this resulted in few observations. The period was therefore extended to 10 years for practical reasons and to capture a larger segment of the population.
	Child nutrition	The nutrition indicator includes child stunting and underweight, defined in accordance with the WHO child growth standards. The indicator in the previous Arab MPI consisted of stunting, wasting and further incorporated an adult malnutrition aspect. The revised MPI refines this indicator and improves its comparability by considering underweight instead of wasting to avoid any seasonality biasness; and by excluding adult malnutrition in the revised framework owing to data coverage issues across countries. Demographic and health surveys (DHS) provide adult anthropometric measurements for women, while these measures were not taken in the multiple indicator cluster surveys (MICS) (Algeria, Iraq, Mauritania, State of Palestine, Sudan, Tunisia) and Pan Arab Project for Family Health (PAPFAM) surveys (Morocco).
	Early pregnancy	Early pregnancy was combined with FGM in the previous Arab MPI. However, FGM was excluded for comparability purposes as data is not available in most countries. Supplementary analysis will report on FGM for countries with available data.
Education	School attendance	The definition of the school attendance indicator is close to the one in previous Arab MPI, with the age bracket reflecting the school-age group. However, to control for potential cases where a young person aged 16 has completed school and should be considered as non-deprived, the condition 'did not complete secondary education' was added. Moreover, in the previous Arab MPI, school attendance was combined with school retention into a single indicator, but the revised MPI separates them into two indicators as they reflect different concepts and need to be addressed separately.
	Age schooling gap	The definition of the age schooling gap indicator is similar to the retention indicator in the previous Arab MPI. However, in the previous Arab MPI, school attendance was combined with school retention into a single indicator, but the revised MPI separates them into two indicators as they reflect different concepts and need to be addressed separately.
	Educational attainment 18+	The educational attainment indicator is the equivalent of the years of schooling indicator in the previous Arab MPI (at poverty cut-off) defined as no household member with completed secondary schooling. The age restriction of 18 and above was added to better target the adult population.
Housing	Overcrowding	The overcrowding indicator is similar to the one in the previous Arab MPI: both defined as three or more people per sleeping room. However, the age specification of 5 and above was added to account for the importance of children's privacy.
	Type of dwelling	The previous Arab MPI only accounted for the floor/roof indicator, so the broader definition in the revised MPI is more encompassing to capture housing conditions. The specification of this indicator better reflects the Arab region's norms.

Dimension	Indicator	Indicator comparison with previous Arab MPI
Access to services	Improved drinking water	The improved drinking water indicator is close to that of the previous Arab MPI at the poverty cut-off. The only difference lies in explicitly adding bottled water as an improved drinking water source to the definition.
	Improved sanitation	The improved sanitation indicator is the same across both indices, which use improved/unimproved water and sanitation classification based on WHO and UNICEF guidelines. The revised MPI follows the latest guidelines.

	Electricity	The electricity indicator is the same across both indices.
<b>Assets</b>	Communication assets	The asset definition in the previous Arab MPI focused exclusively on functions, in which three assets groups (information, mobility and livelihood) were combined into a single indicator. In the revised framework, the three assets groups are split into three indicators that are based both on functions and on material values and data availability. The asset definition presented in this framework improves cross-country comparability and minimizes biases.
	Mobility assets	
	Livelihood assets	