

Economic and Social Commission for Western Asia

# A Proposal for a New Multidimensional Poverty Index for Arab Countries Yields Similar Results to the Current Measure, but Which One Is Better?

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# Recap: Arab Multidimensional Poverty Index (MPI) Framework

- Assesses nonmonetary deprivations across three dimensions, education, health, and living standards.
- Constructed using Alkire-Foster (AF) methodology
- Two deprivation levels: acute poverty and moderate poverty
- With the support of ESCWA, LAS formulated the Arab Strategic Framework for the Eradication of Multidimensional Poverty 2020-2030 adopted at the fourth Arab Economic and Social Summit in January 2019.
- The target set by the Framework is reducing the multidimensional poverty rate by 50 per cent by 2030 on the Arab MPI.

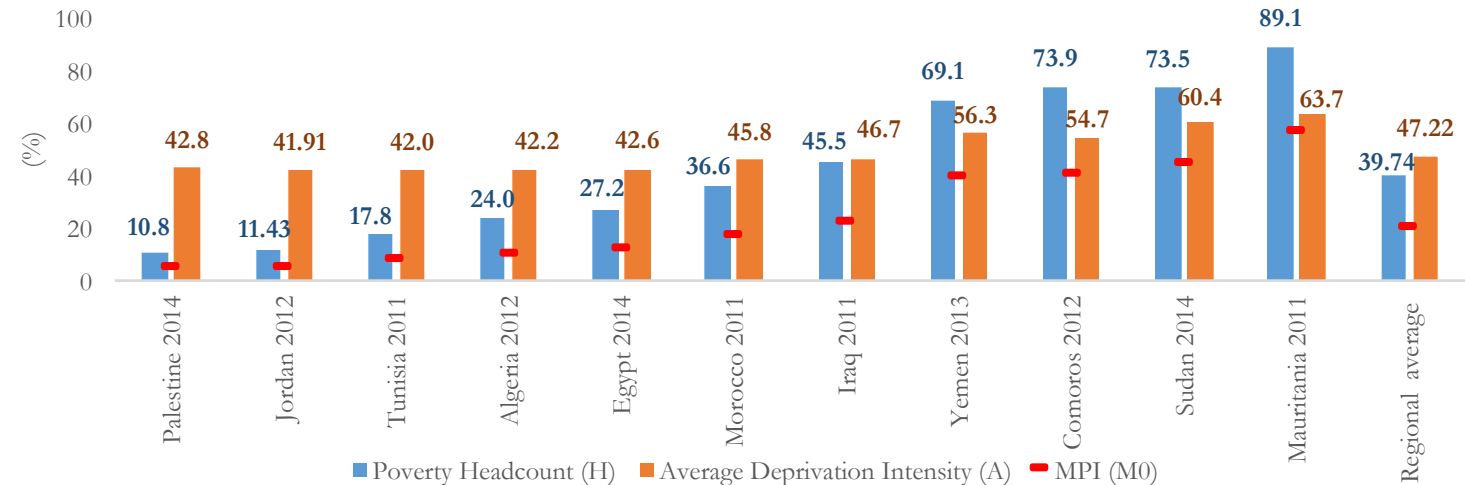
**Table 1 Current MPI framework ( Dimensions, indicators, cut-off points and weights), poverty cut-off**

Dimension and weight assigned	Indicator and weight assigned	Deprived if
Health (weight =1/3)	Child Mortality (weight=1/9)	Any child less than 60 months has died in the family during the 59 months prior to the survey.
	Child Nutrition (weight=1/9)	Any child (0-59 months) is stunted (height for age < -2) or any child is wasted (weight for height < -2) or any adult is malnourished (BMI < 18.5).
	FGM/Early Pregnancy (weight=1/9)	A woman less than 28 years old got her first pregnancy before 18 years old or has undergone a female genital mutilation (FGM).
Education (weight =1/3)	Years of Schooling (weight=1/6)	No household member has completed secondary schooling.
	School Attendance (weight=1/6)	Any school-age child is not attending school or is 2 years or more behind the right school grade.
Living standards (weight =1/3)	Electricity (weight=1/21)	Household has no electricity.
	Sanitation (weight=1/21)	Household sanitation is not improved, according to MDG guidelines, or it is improved but shared with other household.
	Water (weight=1/21)	Household does not have piped water into dwelling or yard.
	Floor/Roof (weight=1/21)	Floor is earth, sand, dung, rudimentary (wood planks/bamboo/reeds/grass/canes), cement floor (not slab or tiles/asphalt strips) or roof is not available or made of thatch, palm leaf, sod, rustic mat, palm, bamboo, wood plank, cardboard.
	Cooking Fuel (weight=1/21)	Household cooks with solid fuels: wood, charcoal, crop residues or dung or no food is cooked in the household or does not have a separate room for cooking.
	Overcrowding (weight=1/21)	Household has 3 or more people per sleeping room.
	Assets (weight=1/21)	Household has less than two assets for accessing information, or there is more than one information asset and less than two mobility assets and less than two livelihood assets.

# Arab MPI: Key Findings

- Despite the inter-country disparities, poverty across the region that is not confined to Least Developed Countries (LDC)s and low-income countries.
- At a regional level, the poverty incidence is estimated at near 40% or equivalently saying more than four in ten households are affected by poverty.
- Education is the largest contributor to poverty in all countries, except Sudan.
- Living standards closely follows education, while health is generally the lowest contributor.

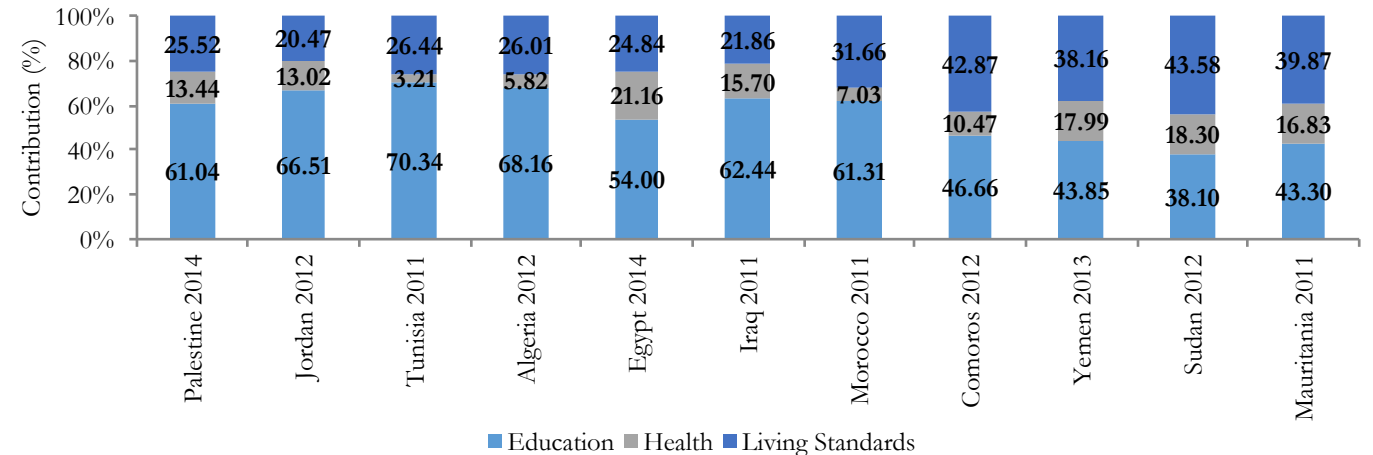
**Figure 1** Multidimensional poverty headcount and average deprivation intensity, poverty cut-off



Source: based on Arab Multidimensional Poverty Report E/ESCWA/EDID/2017/2

The regional average is a population-weighted average of the 11 Arab countries for which the indices are computed. Regional aggregation is computed using the population in 2015. Population data is retrieved from World Bank (accessed on 30 July 2019).

**Figure 2** Contributions of dimensions to household poverty, poverty cut-off.



Source: based on Arab Multidimensional Poverty Report E/ESCWA/EDID/2017/2.

# Motivation for Revising Arab MPI

- Despite great recognition, the Arab MPI has been criticized by some experts for being too close to the global MPI in its construction by retaining the same dimensions and most of the same indicators.
- An attempt to deliberately depart from the global MPI and thus radically rethink the construction of the Arab MPI.
- Enhance inter-country and temporal comparisons.
- Address comments regarding the redundancy of some health and living conditions indicators and the need to add an additional dimension to account for or proxy income poverty.

# Availability of Data

Dimension	Indicator	DHS						PAPFAM		MICS					
		Jordan 2012 DHS	Egypt 2014 DHS	Comoros 2012 DHS	Yemen 2013 DHS	Morocco 2011 PAPFAM	Palestine 2014 MICS	Tunisia 2011 MICS	Algeria 2012 MICS	Iraq 2011 MICS	Sudan 2014 MICS	Mauritania 2011 MICS			
Health & Nutrition	Child mortality	√	√	√	√	√	√	√	√	√	√	√	√		
	Stunting	√	√	√	√	√	√	√	√	√	√	√	√		
	Child pregnancy	√	√	√	√	√	√	√	√	√	√	√	√		
	Postnatal Care	√	√	√	√	×	√	√	√	×	√	×	×		
	Health insurance / health coverage	√	√*	√*	√	√	×	×	×	×	×	×	×		
	Quality of health services	×	×	×	×	×	×	×	×	×	×	×	×		
Education	School enrolment and progression	√	√	√	√	√*	√	√	√	√	√	√	√		
	Educational Attainment – Head and spouse	√	√	√	√	√	√	√	√	√	√	√	√		
	Educational Attainment	√	√	√	√	√	√	√	√	√	√	√	√		
	Quality of education services	×	×	×	×	×	×	×	×	×	×	×	×		
Housing	Overcrowding	√	√	√	√	√	√	√	√	√	√	√	√		
	Electricity	√	√	√	√	√	√	√	√	√	√	√	√		
	Water	√	√	√	√	√	√	√	√	√	√	√	√		
	Sanitation	√	√	√	√	√	√	√	√	√	√	√	√		
	Type of dwelling	√	√*	√*	√	√	√	√	√	√	√	√	√		
	Internet access	√	√	×	×	√	×	×	√*	√*	√*	√*	√*		
Assets	Television	√	√	√	√	√	√	√	√	√	√	√	√		
	Computer	√	√	×	×	√	√	√	√	√	√	√	√		
	Washing machine	√	√	×	√	√	√	√	√	×	√	√	√		
	Fridge	√	√	√	√	√	√	√	√	√	√	√	√		
	Radio	√	√	√	√	√	√	√	√	√	√	√	√		
	Air conditioner	√	√	×	√	√	√	√	√	√	×	√	√		
	Satellite dish	√	√	×	×	√	√	×	√	√	×	√	√		
	Car/Truck	√	√	√	√	√	√	√	√	√	√	√	√		
	Phone(mobile or landline)	√	√	√	√	√	√	√	√	√	√	√	√		
Income & Employment	Smart Phone	×	√	×	×	×	√	×	×	×	√	×	×		
	Child labor	×	√*	√*	√	√*	√	√	√	√*	√	√	√		
	Unemployment	√*	√*	√*	√	√*	×	×	√	√*	×	×	×		
	Monthly Income	×	×	×	×	×	×	×	×	×	×	×	×		

√ : Available ; √\* : Available, but some missingness or other notes ; × : Unavailable

# Revised Arab MPI (S<sub>0</sub> index): Framework

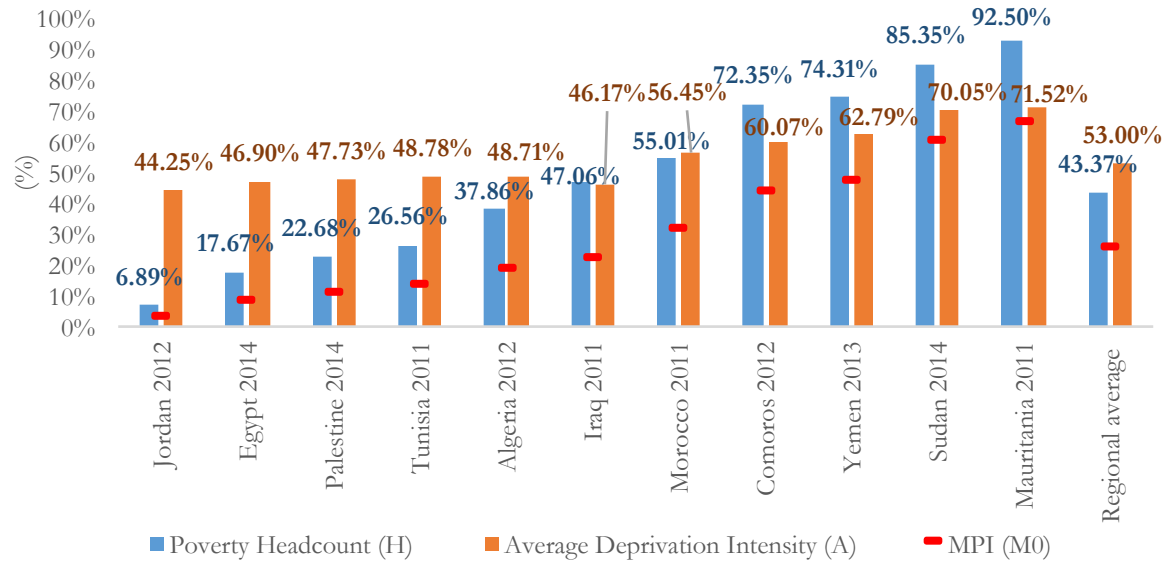
- Main advantages:
  1. The exclusion of indicators such as the FGM and cooking fuel, which are not seen as relevant to all countries.
  2. By excluding these indicators there are improvements in time comparisons and the ability to capture the prevalent poverty in middle-income countries.

Table 2 Revised Arab MPI framework ( Dimensions, indicators, cut-off points and weights)

Dimension and weight assigned	Indicator and weight assigned	Deprived if
Health & Nutrition (weight = 20%)	Child mortality (weight = 6.7%)	Deprived if any child in the household died before the age of 5 during the past 10 years.
	Stunting (weight = 6.7%)	Deprived if any child under the age of 5 has moderate or severe stunting.
	Child pregnancy (weight = 6.7%)	Deprived if any women aged 15-24 gave birth before the age of 18
Education (weight = 30%)	School enrolment and progression (weight = 10%)	Any child aged 6-15 not enrolled in school OR any school child age 8-17 enrolled at two grades or more below the appropriate grade for their age.
	Educational Attainment – Head and spouse (weight = 10%)	Households with head or spouse not completing basic (9 years) education.
	Educational Attainment (weight = 10%)	No household member aged 18+ has completed secondary education.
Housing (weight = 30%)	Overcrowding (weight = 10%)	More than 2 persons aged 5+ years per sleeping room.
	Availability of services (weight = 10%)	The household does not have access to electricity or improved drinking water (according to MDG guidelines) or improved sanitation (toilet not connected to piped sewer system; or shared toilet; or no toilet facility)
	Type of dwelling (weight = 10%)	Deprived if housing situation fits at least one of the following conditions: (i) home has only one room; (ii) home is a place other than stand-alone house or apartment; (iii) without kitchen; (iv) non-permanent floor or non-permanent roof
Assets (weight = 20%)	Durable goods (weight = 20%)	Deprived if household has less than half of the following durable goods: Color TV, computer, washing machine, fridge, radio, phone, air conditioner, satellite dish, car/truck.

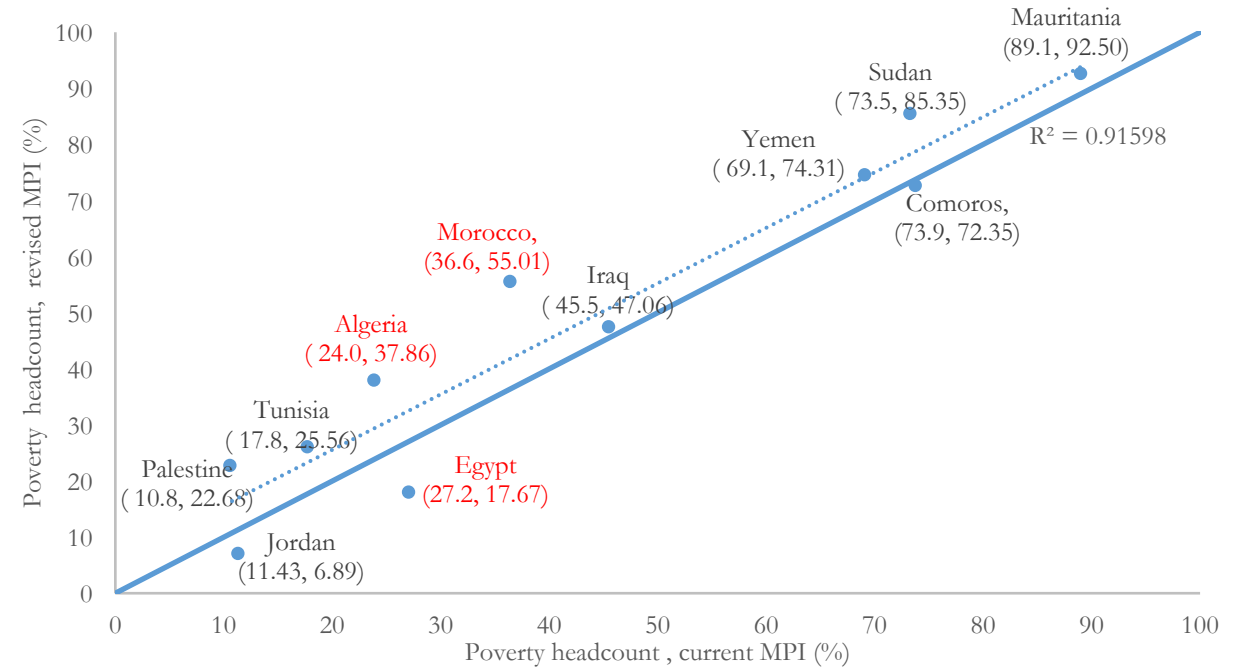
# Revised Arab MPI (S<sub>0</sub> index): Key Findings

**Figure 3** Multidimensional poverty headcount and average deprivation intensity (Revised MPI S<sub>0</sub>)



Source: based on ESCWA, 2020 forthcoming

**Figure 4** Poverty headcount: Current MPI versus Revised MPI S<sub>0</sub>

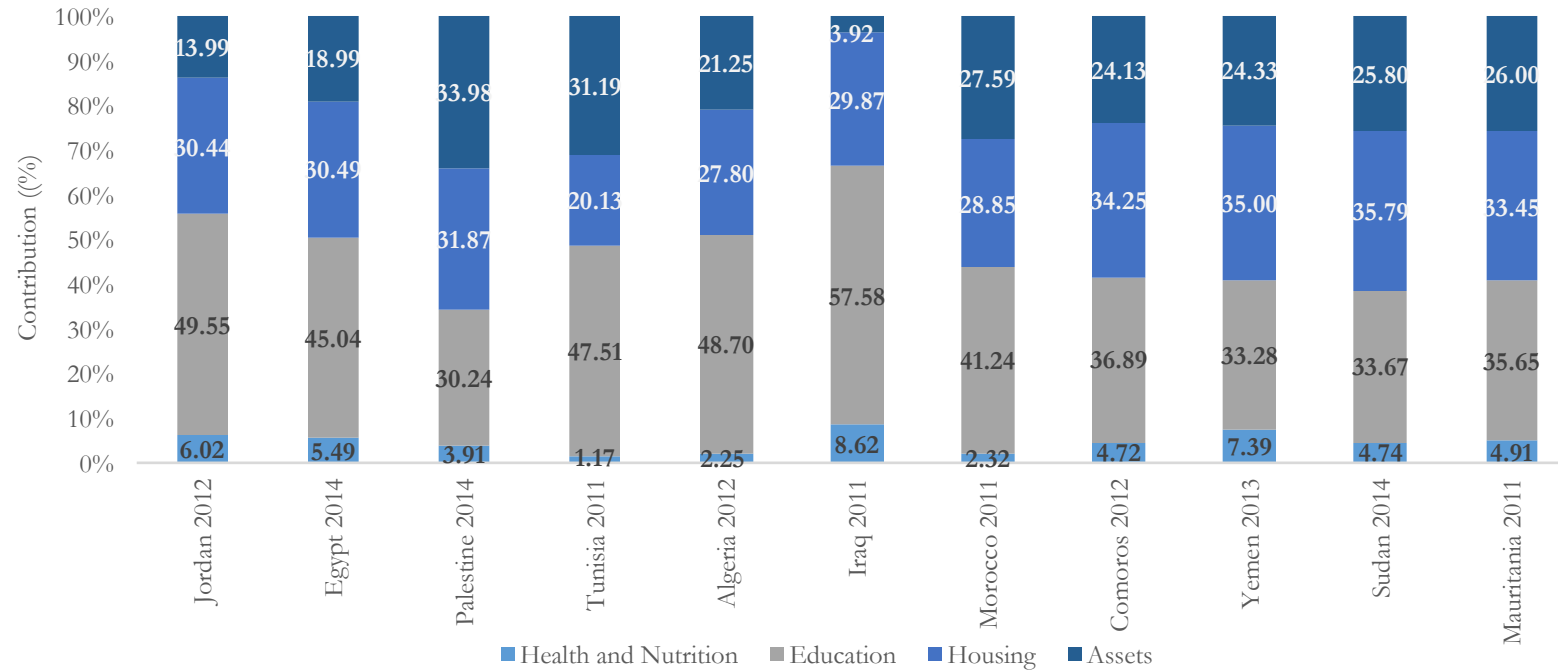


Source: based on ESCWA, 2020 forthcoming and Arab Multidimensional Poverty Report, E/ESCWA/EDID/2017/2. The blue line is the 45-degree line.

- At the regional level, the outlook is broadly similar with 43% of the population suffering from multidimensional poverty (slight increase relative to current MPI).
- Similar to the current MPI, these figures show that the poverty scale and depth are high in LDCs as well as in many non-LDCs countries.
- The revised poverty headcounts are higher than their current values in the majority of country, with the exception of Jordan, Egypt and Comoros.

# Revised Arab MPI (S<sub>0</sub> index): Key Findings

Figure 5 Contribution of dimensions to multidimensional poverty (Revised MPI S<sub>0</sub>)



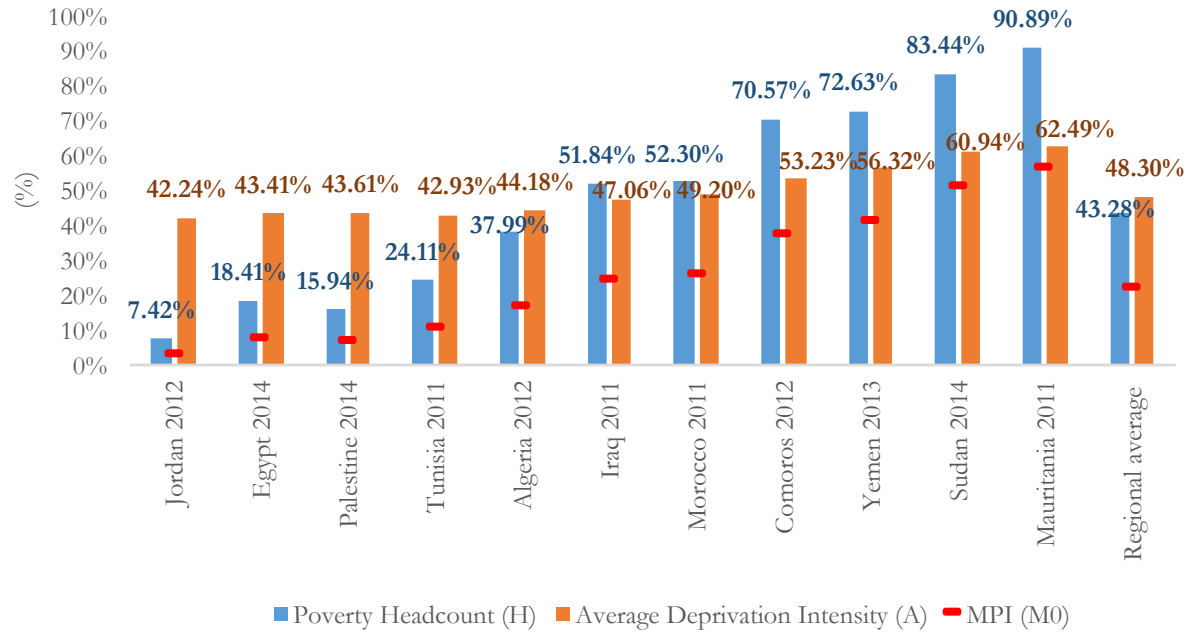
Source: based on ESCWA, 2020 forthcoming

- Education is generally the lead contributor to poverty, similar to the current MPI.
- It is then closely followed by housing and assets dimensions.
- As in the case of the Arab MPI, contribution of assets and living conditions increases for LDCs.



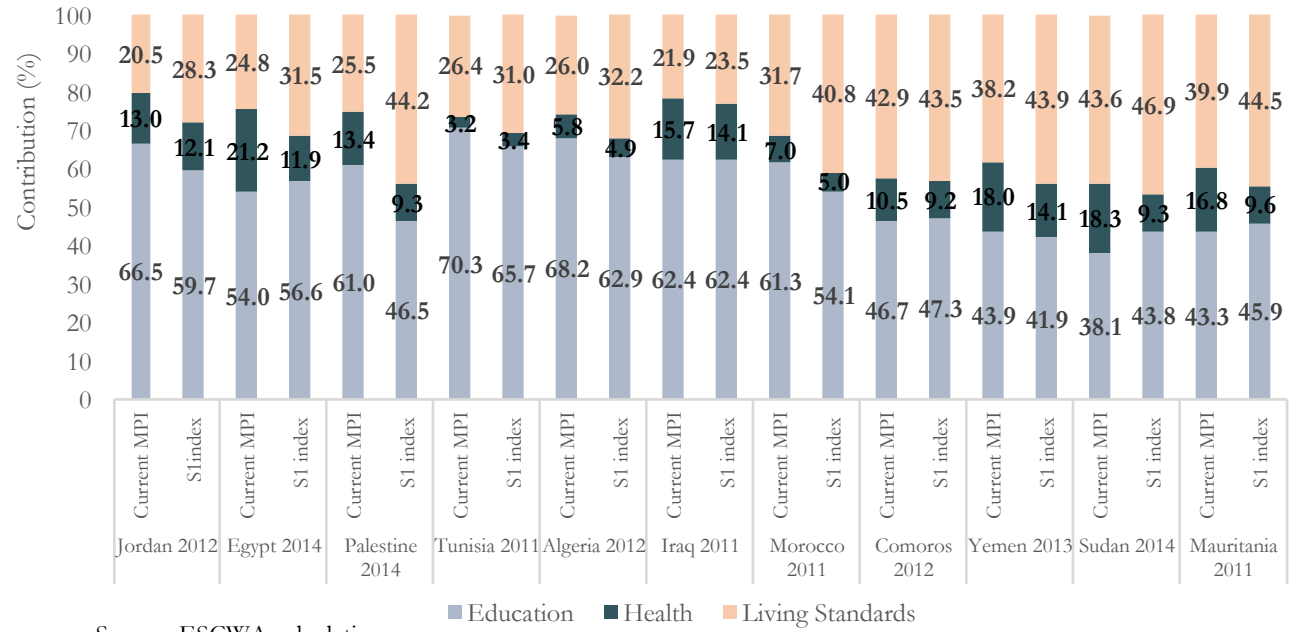
# Scenario 1: Weight-adjusted Revised Arab MPI (S<sub>1</sub> index)

Figure 6 Multidimensional poverty headcount and average deprivation intensity (Revised MPI S<sub>1</sub>)



Source: ESCWA calculations

Figure 7 Contributions of dimensions, S<sub>1</sub> index versus Current MPI

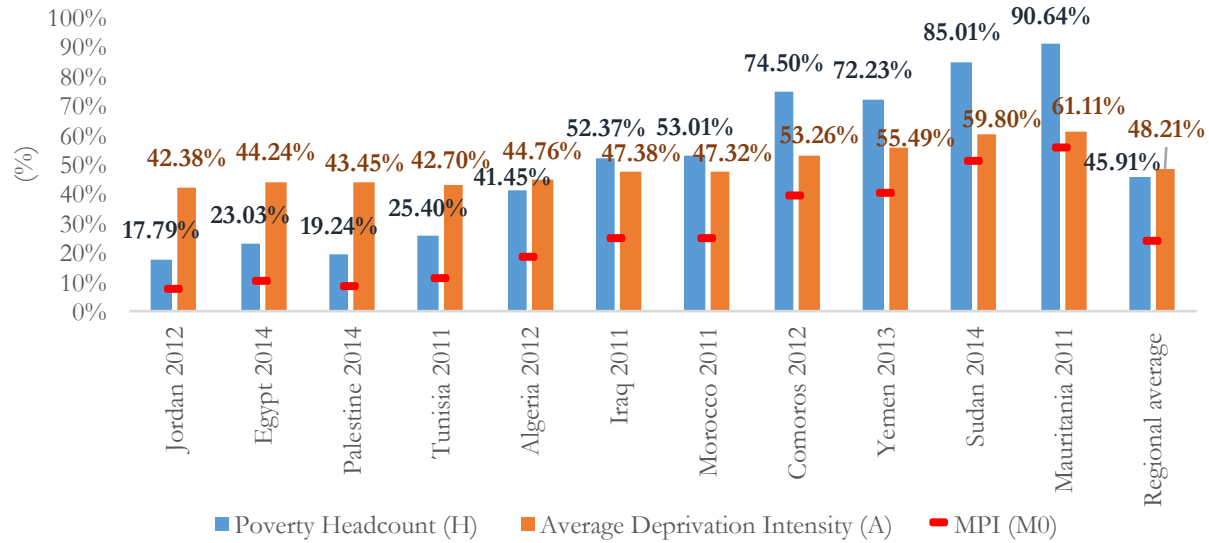


Source: ESCWA calculations

- Weighing scheme adjusted similar to Current MPI ( i.e. three dimensions, each having a weight of one-third).
- At a regional level, S<sub>1</sub> index gives a very similar average to that of S<sub>0</sub> index. However, poverty headcounts at the country level differ between the two scenarios, and considerably in the case of Palestine and Iraq.
- Relative to the current MPI, the S<sub>1</sub> index also shows higher poverty headcounts in all countries, with the exception of Jordan and Egypt.
- Poverty composition show comparable pattern, yet education's contribution has generally decreased in S<sub>1</sub> index while that of living standards increased. Health dimension remained the least contributor to multidimensional poverty, with its share in poverty being reduced in many countries.

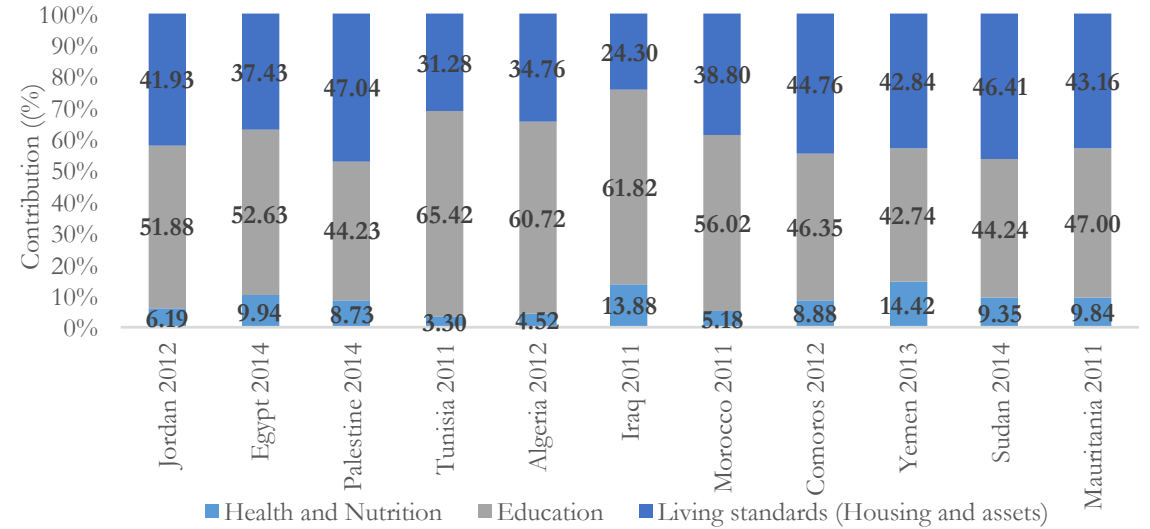
# Scenario 2: Assets and weights adjusted Revised Arab MPI (S<sub>2</sub> index)

**Figure 9** Multidimensional poverty headcount and average deprivation intensity (Revised MPI S<sub>2</sub>)



Source: ESCWA calculations

**Figure 10** Contribution of dimensions to multidimensional poverty (Revised MPI S<sub>2</sub>)



Source: ESCWA calculations

- From a normative standpoint, the asset definition in revised MPI could be viewed as a proxy for income or wealth, while the asset definition in the current MPI framework may have the advantage of better capturing the capability deprivation as advocated by Sen.
- At the regional level, the poverty headcount using S<sub>2</sub> index increases to near 46 per cent as compared to 43 per cent using the S<sub>1</sub> and S<sub>0</sub>.
- Poverty headcounts are higher relative to current MPI and S<sub>1</sub> indices in the majority of countries.
- Poverty composition results remain largely similar to previous indices, with education being the highest contributor

# Generally, the poverty outlook, including country rankings, remains fairly stable across the different scenarios

Table 1 Ranking changes based on multidimensional poverty index (M0), by country

Revised MPI S <sub>0</sub> ranking <sup>i</sup>	Country	M0- Revised MPI (S <sub>0</sub> )	M0- Revised MPI (S <sub>1</sub> )	M0- Revised MPI (S <sub>2</sub> )	M0- Current MPI	Change in ranking Revised MPI (S <sub>0</sub> ) versus current MPI	Change in ranking Revised MPI (S <sub>1</sub> ) versus current MPI	Change in ranking Revised MPI (S <sub>2</sub> ) versus current MPI
1	Jordan	3.05	3.13	7.54	4.79	1	1	1
2	Egypt	8.29	7.99	10.19	11.60	3	2	2
3	Palestine	10.83	6.95	8.36	4.6	-2	-1	-1
4	Tunisia	12.96	10.35	10.85	7.5	-1	-1	-1
5	Algeria	18.44	16.79	18.55	10.1	-1	-1	-1
6	Iraq	21.73	24.39	24.81	21.9	1	1	1
7	Morocco	31.05	25.73	25.08	16.8	-1	-1	-1
8	Comoros	43.46	37.56	39.68	40.4	1	1	1
9	Yemen	46.66	40.91	40.08	38.9	-1	-1	-1
10	Sudan	59.79	50.85	50.80	44.4	0	0	0
11	Mauritania	66.16	56.80	55.39	56.7	0	0	0

Source: ESCWA calculations

i. Countries are ordered descendingly from the lowest to highest MPI value. A positive change reflects an improvement in ranking.

ii. M0 is usually reported in decimal form. For ease of interpretation, we report it in percentages in this table.

- The best ranks (top 3) where the most affected by the different scenarios.

# Using the Global MPI to measure acute poverty, the regional narrative and country groupings by clusters are largely unvarying

Figure 11 Poverty headcount: Global MPI versus Arab MPI indices

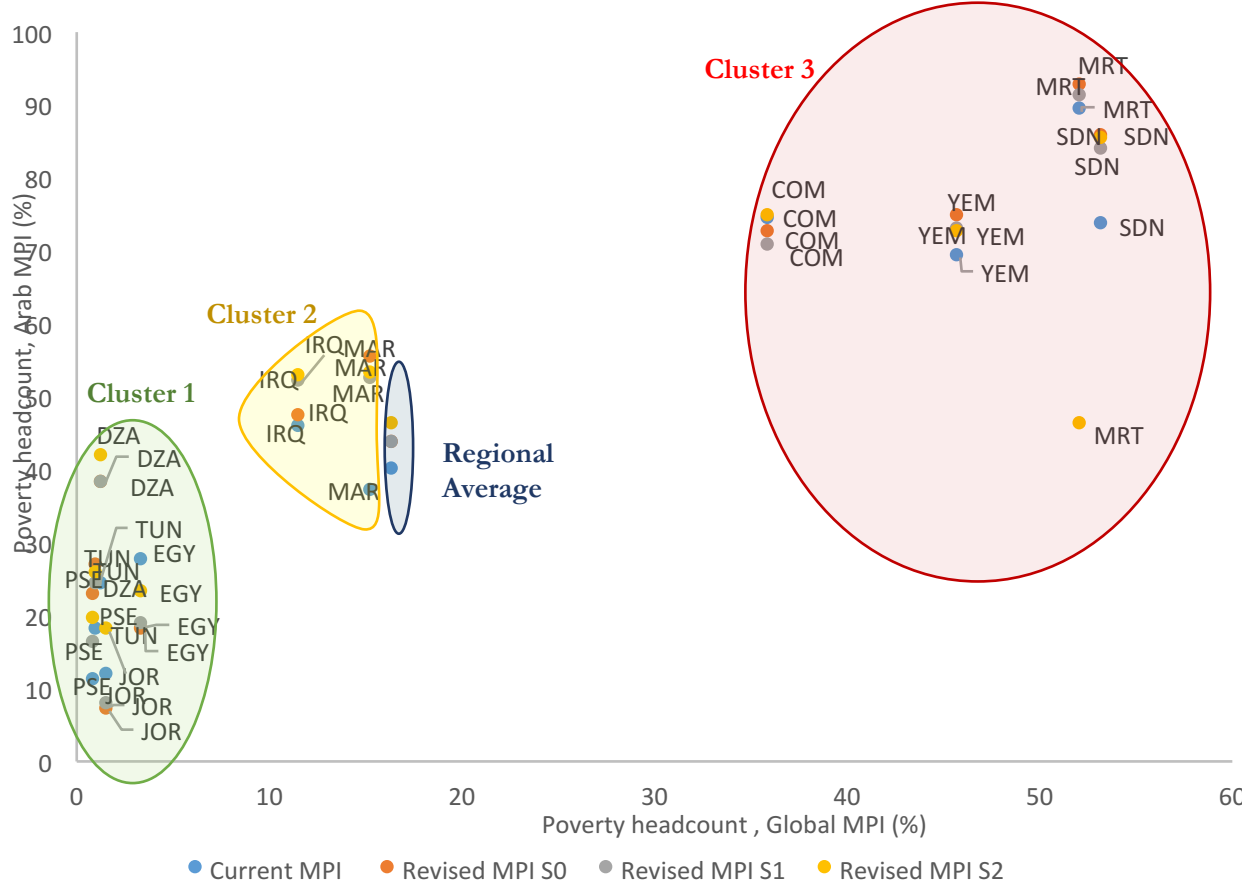
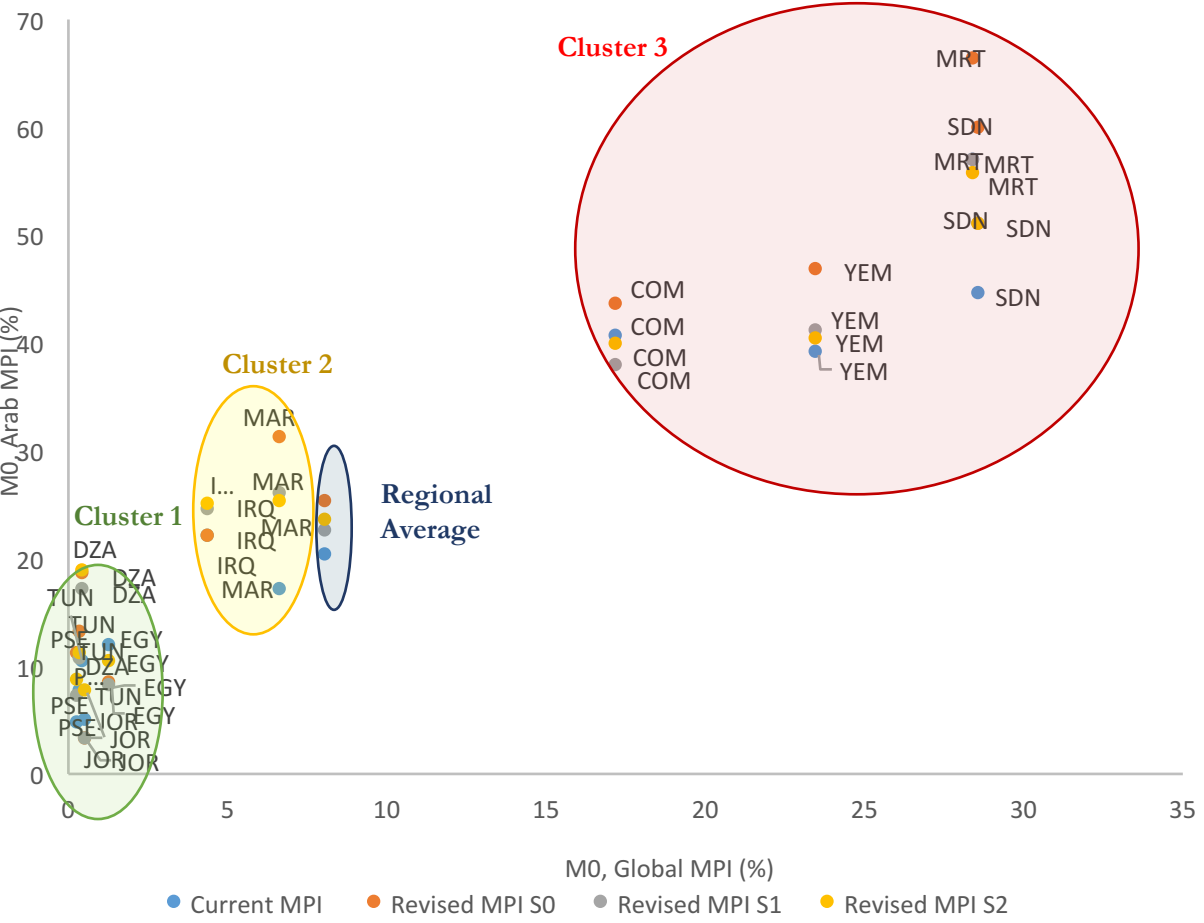


Figure 12 Multidimensional poverty index (M0): Global MPI versus Arab MPI indices

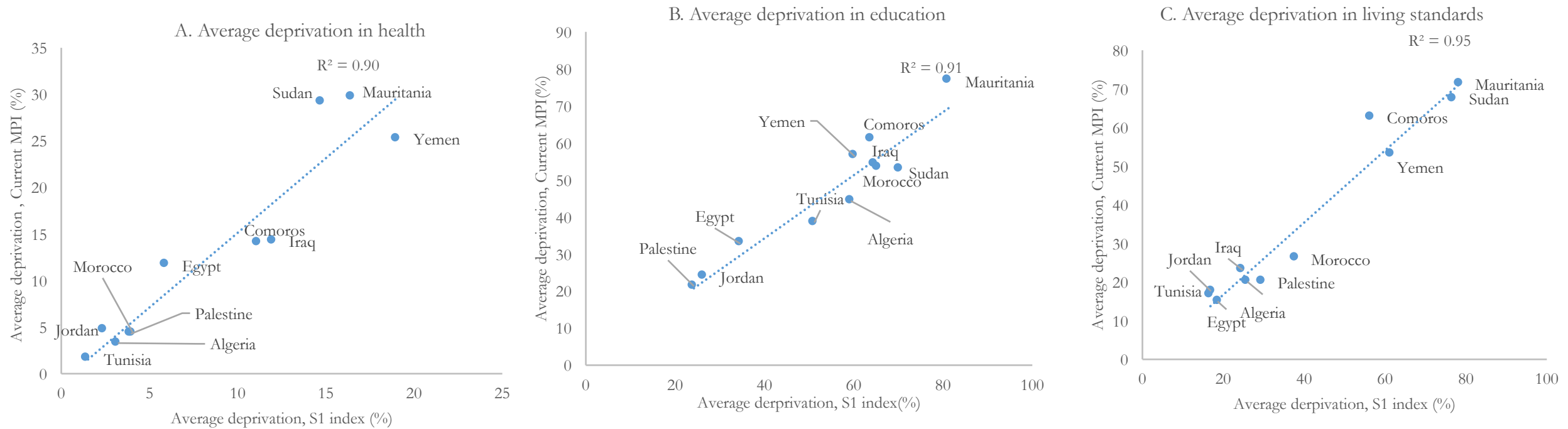


Source: Arab MPI indices based on ESCWA calculations. Global MPI based on Alkire and Kanagaratnam (2018)  
 Note that M0 is usually reported in decimal form. For ease of interpretation, we report it in percentages in figure 12

- The region has low levels of extreme poverty, yet moderate poverty is pervasive across the region and not restricted to LDCs and low-income countries.

# Average deprivations in three dimensions using the two frameworks are highly correlated.

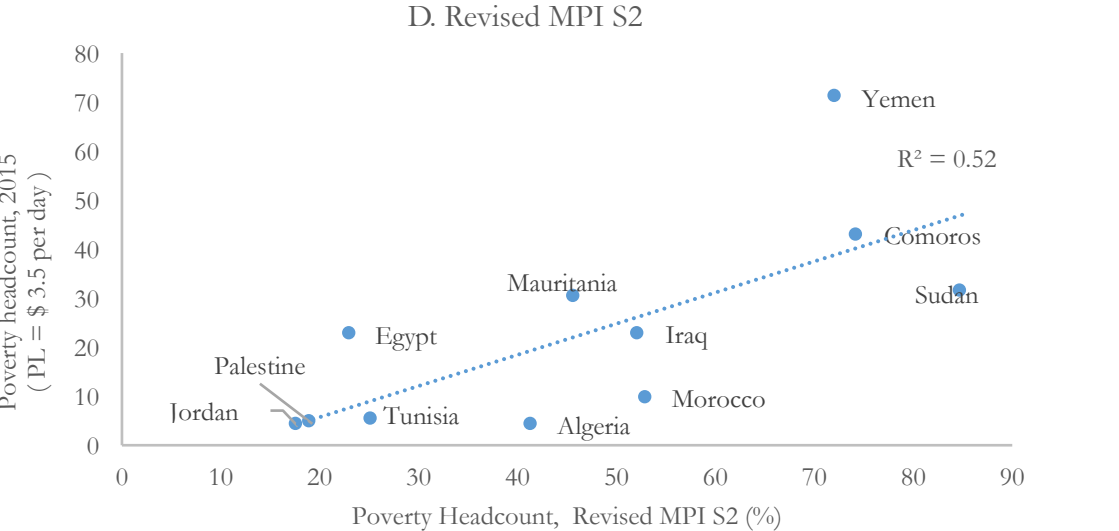
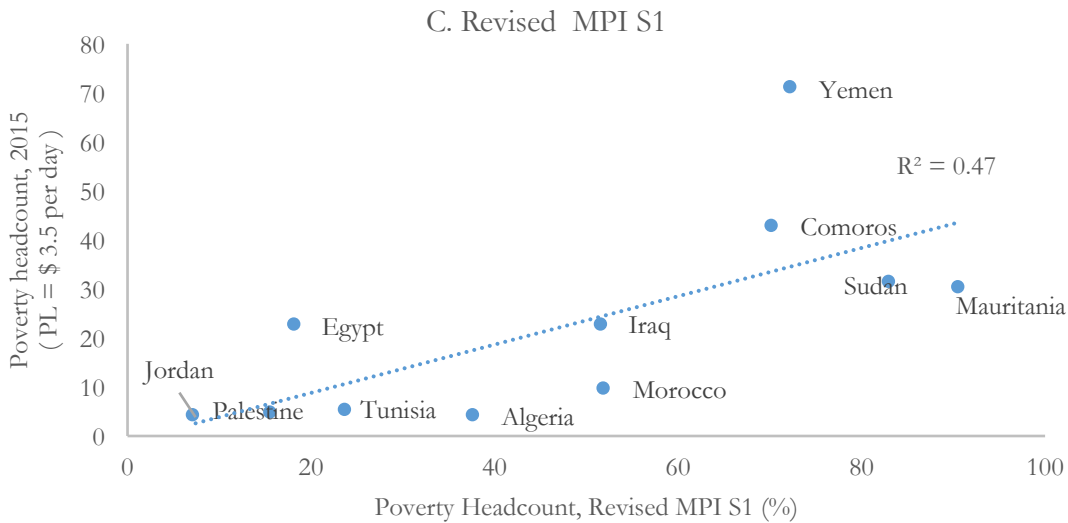
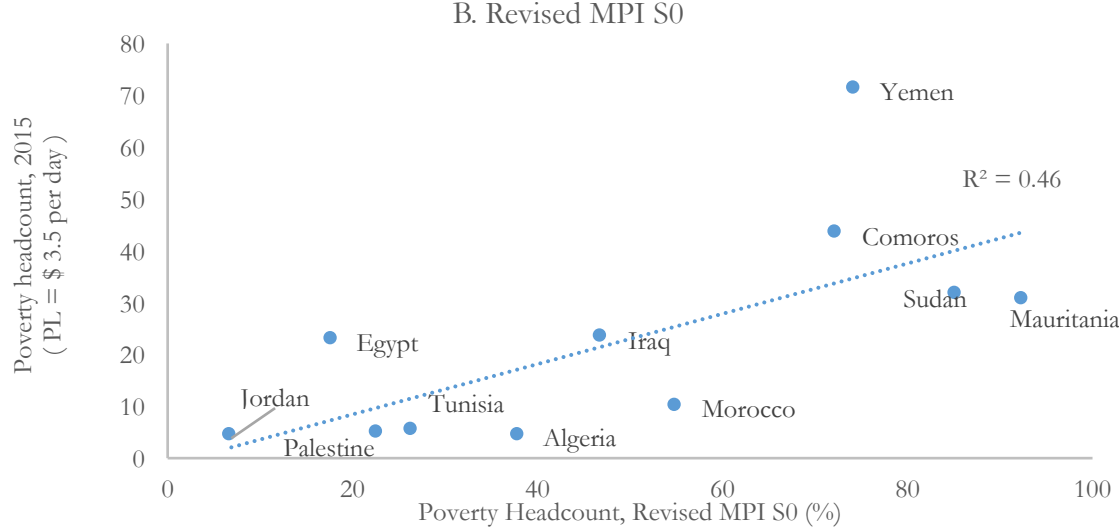
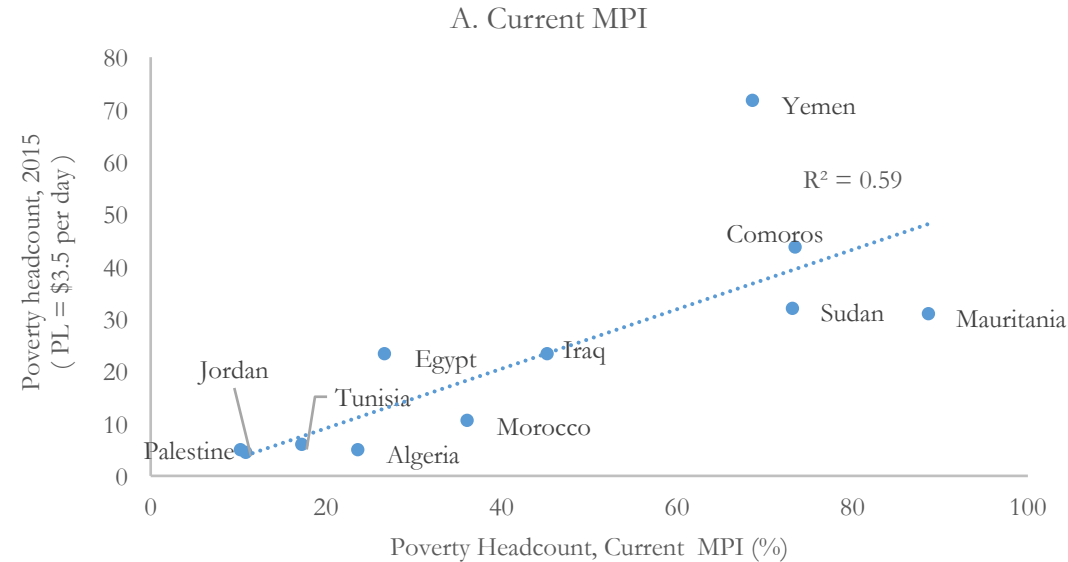
Figure 8 Average deprivation in dimension Current MPI vs S<sub>1</sub> index (Based on raw headcount per indicators)



Source: ESCWA calculations

# Similar picture: Countries with higher multidimensional poverty levels tend to have higher monetary deprivations

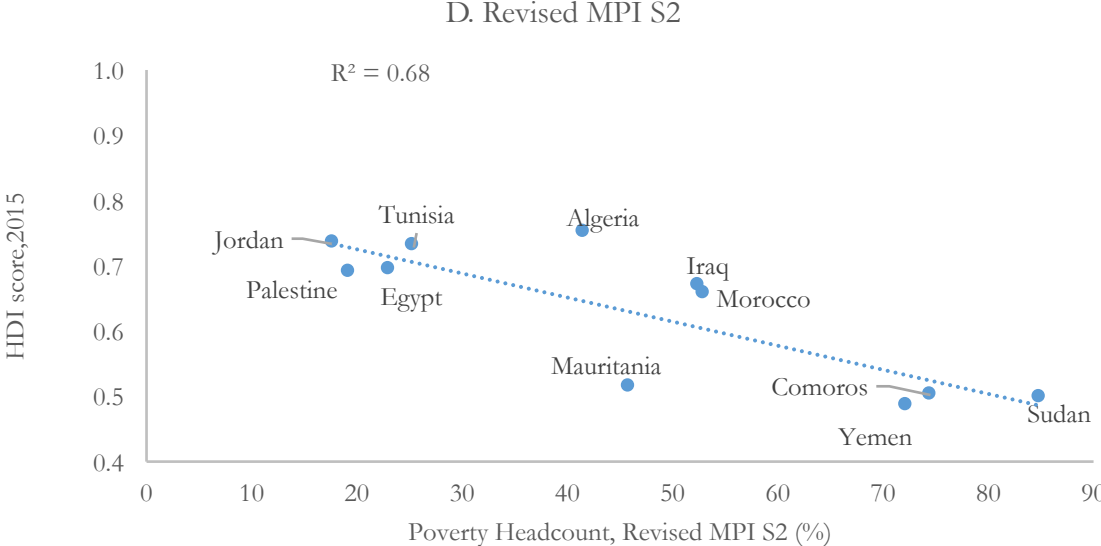
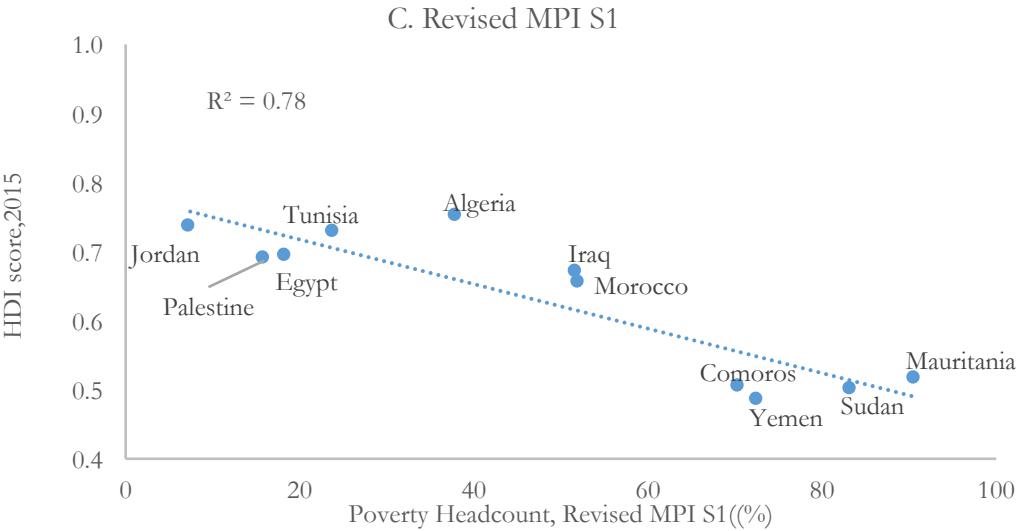
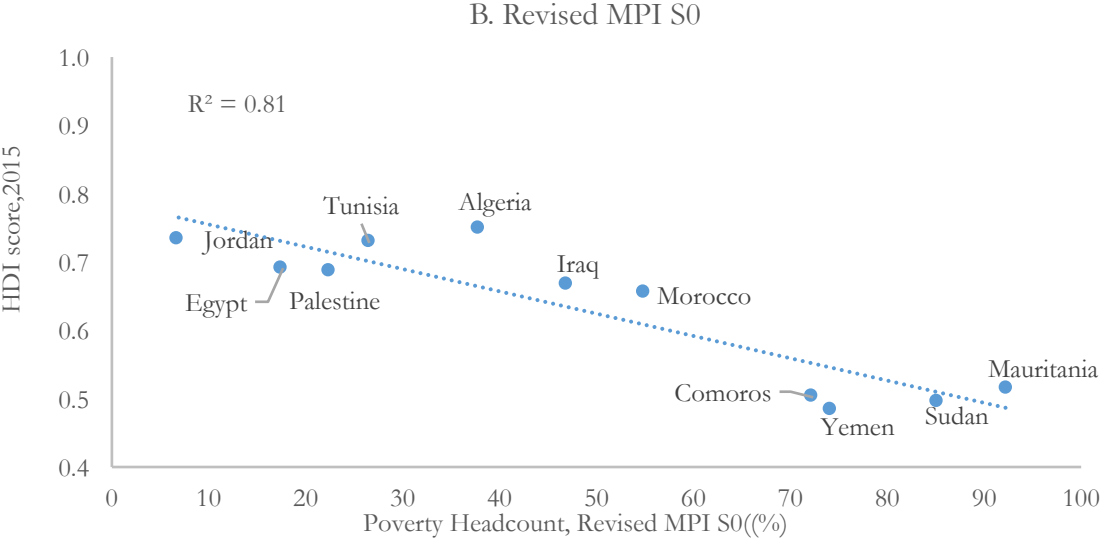
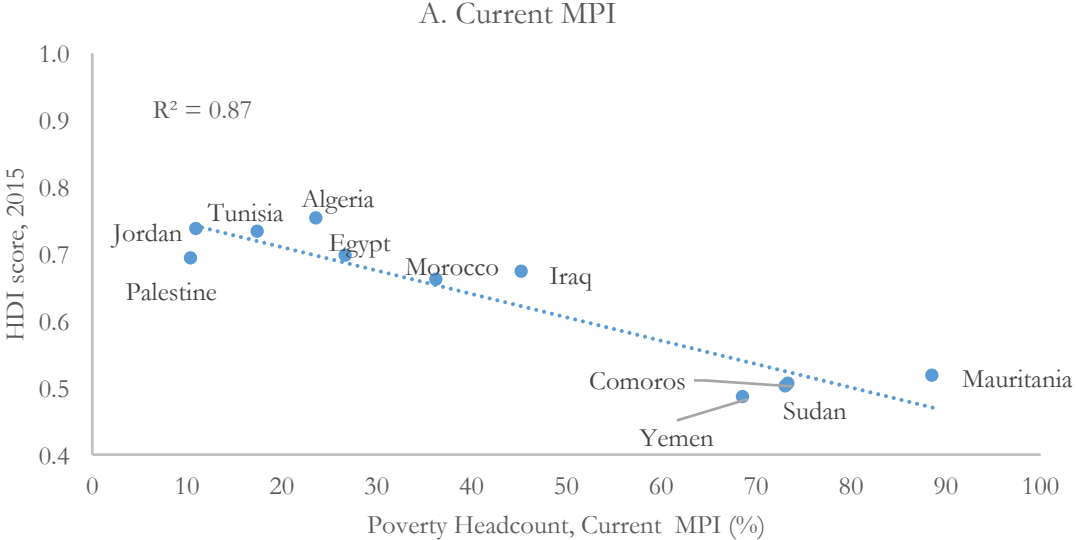
Figure 13 Poverty headcount: Revised MPI, Current MPI and money-metric poverty (poverty line \$3.5 per day)



Source: MPI indices based on ESCWA calculations and 2015 money-metric poverty headcount from Povcal, World Bank

# Similar picture: Countries with higher multidimensional poverty levels tend to have lower human development levels

Figure 14 Poverty headcount: Revised MPI, Current MPI and Human Development Index (HDI)



Source: MPI indices based on ESCWA calculations and HDI 2015 from UNDP, HDR data

# Conclusion

- Multidimensional deprivation rates are higher using the revised framework. Still, the overall poverty outlook in the Arab region remains fairly consistent.
- Both framework show education as the lead contributor to multidimensional poverty.
- Advantages of revised MPI: exclusion of potentially controversial indicators and enhancing inter-country and temporal comparability
- The main caveat of the revised index; however, may be the assets dimension and the increase in its assigned weight relative to the current MPI, which may be the driving force behind the higher deprivation rates.
- The proposed asset definition (i.e. durable goods indicator) in revised framework has two key challenges: data availability and the high sensitivity of deprivation rates to the cut-off choice.





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# Thank you