

Making money work efficiently



04





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The impact and reach of social expenditure vary across countries. Understanding the degree of efficiency in achieving desired results helps policymakers steer allocations to sectors and population groups that are most in need and where returns will be greatest.

Compared to countries at similar income levels, Arab countries lag on socioeconomic outcomes as well as on social expenditure. The region's average efficiency in social expenditure is below global benchmarks; the same applies to averages for high- and middle-income countries. By achieving better efficiency, Arab countries could improve social development outcomes without more public expenditure. Where outcomes are already adequate, countries could achieve the same results at lower spending levels, generating substantial savings.

This chapter examines the efficiency of public social expenditure in driving progress towards development objectives within the region and compared to global benchmarks. It uses SEM data to relate social expenditures to achievements under selected SDG indicators, and develops efficiency scores for Government expenditures on health, education, social protection, housing, and environmental protection.¹³⁰ A decomposition exercise highlights specific inefficiencies. Case studies from Jordan and Tunisia demonstrate how to use efficiency scores to perform policy simulations and evaluate potential changes in expenditure or efficiency.

An efficiency analysis of 127 countries globally included 15 from the Arab region, based on data availability for a set of input and output variables (table 3).¹³¹ Statistical analysis constructed a "frontier" of the most efficient countries, which have high outputs relative to expenditure inputs. Countries at or close to the frontier have high efficiency; countries far from the frontier are relatively inefficient.



Table 3. Variables for assessing the efficiency of social expenditures

	Input variable	Output variable (performance measure)
Social expenditure	Total social expenditure	Inequality-adjusted Human Development Index
Education	Overall education expenditure	Expected years of schooling
	Primary and secondary education	Pupil-teacher ratio, primary
	Tertiary education	Pupil-teacher ratio, tertiary
	Research and use of technology in advancing education	Harmonized test scores
Health	Overall health expenditure	Life expectancy at birth, total years
	Outpatient services	Mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases between ages 30-70 (percentage)
	Hospital services	Infant mortality rate, infant deaths per 1,000 live births
	Public health services	Prevalence of anaemia among pregnant women (percentage)
Housing and community amenities	Overall housing and community amenities expenditure	Population living in slums (percentage of urban population)
Social protection	Overall social protection expenditure	Prevalence of undernourishment (percentage population)
	Older persons	Proportion of population above statutory retirement age covered by benefit
	Sickness and disability	Proportion of population with severe disability covered by benefits
	Families and children	Prevalence of anaemia among women of reproductive age (percentage of women aged 15-49)
Environmental protection	Overall environmental protection expenditure	Environmental Performance Index

Source: Gaska and others, 2021.

Note: The choice of indicator and its link to an output or outcome are driven partly by conceptual analysis and partly by data coverage. For example, the performance measure of education expenditures relating to the quality of schooling is unfortunately not available or not adequate for such assessments. Therefore, the teacher-pupil ratio was taken as a proxy to indicate that higher public expenditure on education would improve the teacher-pupil ratio, which improves the quality of education in general. Similarly, indicators such as poverty rate, poverty gap and coverage of social protection benefits for children are critical to assess efficiency but lack adequate data. These are discussed in box 5 as a robustness check. Efficiency scores for components are not additive. For example, a country's overall health efficiency score is not necessarily an average of its scores in outpatient services, hospital services, and public health services. This is because each input variable is linked to its own performance measure.

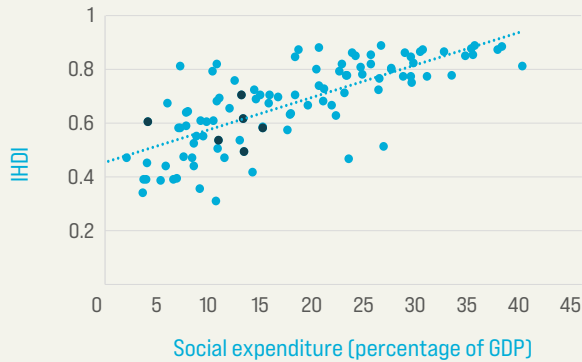
A. How far does expenditure go in achieving social aims?

In broad terms, public social expenditure has a strong positive correlation with the Inequality-adjusted Human Development Index (IHDI) (figures 56(a)-56(f)), which captures advances in education, health and income as well as how evenly achievements are distributed. In the Arab region, human development advances have slowed markedly since the 1990s, partly because incremental progress is harder but also largely because the budget share going to health and education has remained almost stagnant or declined.

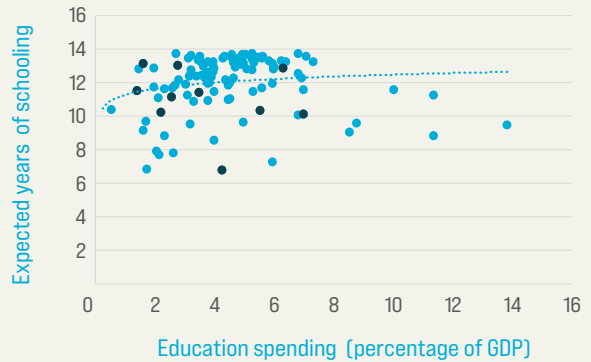
The correlation of social expenditure with education outcomes globally is positive. On average, countries with higher public expenditure on education have higher educational achievements. In the sample of Arab countries used in this report, however, correlations between public education expenditure and expected years of schooling are somewhat ambiguous. There is a positive association between achievements and expenditure in low-income countries. But some middle- and high-income countries have achieved high education outcomes despite stagnating public expenditures.

Figure 56. Several performance indicators reflect the role of public social expenditure

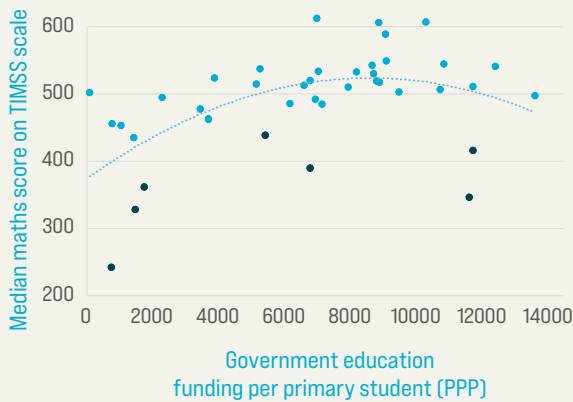
(a) Social expenditure compared to the Inequality-adjusted Human Development Index



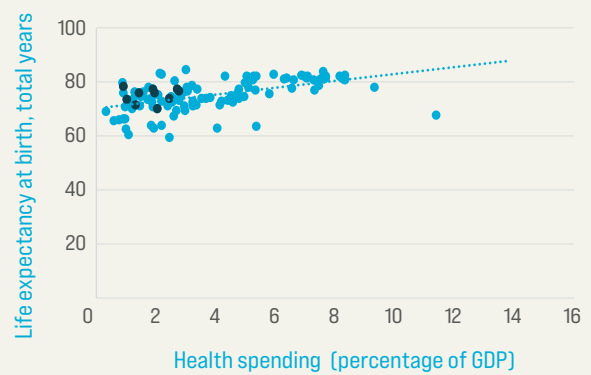
(b) Education spending compared to expected years of schooling



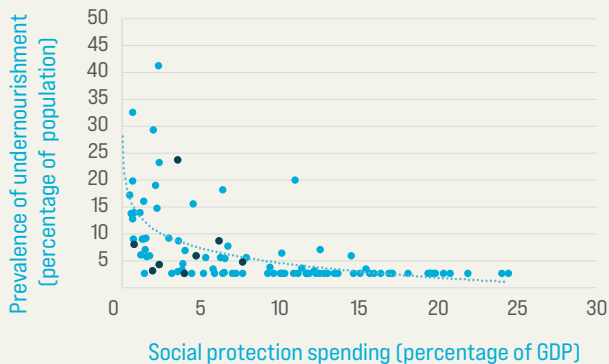
(c) Education spending and quality of education



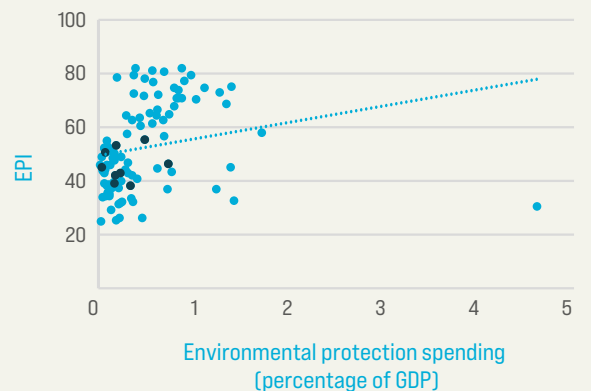
(d) Health spending compared to life expectancy at birth, total years



(e) Social protection spending compared to the prevalence of undernourishment, percentage of population



(f) Environmental protection spending compared to the Environmental Performance Index



● World ● Arab States

Source: Gaska and others, 2021; Patel and Sandefur, 2020.

The results may not be a surprise. Cross-country data on private finance are lacking but a look at the share of enrolment in private institutions gives an approximation. In several countries in the region, the share of students enrolled in private educational institutions is noticeably high. For instance, enrolment in private schools in Lebanon, Qatar and the United Arab Emirates, particularly at the primary level, surpasses 50 per cent, compared to the world average of about 19 per cent.¹³² Such tendencies have produced substantial differences in the effects of public social expenditure on education.¹³³

A positive correlation between life expectancy and public health spending operates in Arab countries and worldwide. On average, countries with higher public health expenditure have higher life expectancy. The positive correlation in Arab countries is less pronounced, however. One reason may be an unusually large share of out-of-pocket expenditure in total health expenditure; private households carry a high financial burden. An average of 27 per cent of total health expenditure in the Arab region is through out-of-pocket payments, against the world average of 18 per cent.¹³⁴ Private expenditure helps explain advancement in health outcomes despite low public expenditure in health. Within the region, the share of out-of-pocket payments is negatively associated with national income, where some of the poorest countries have the highest rates of these payments.

Social protection expenditure shows close correlation with declining undernourishment. A weaker correlation is evident between the Environmental Performance Index, a combined measure of environmental indicators, and expenditure on environmental protection.

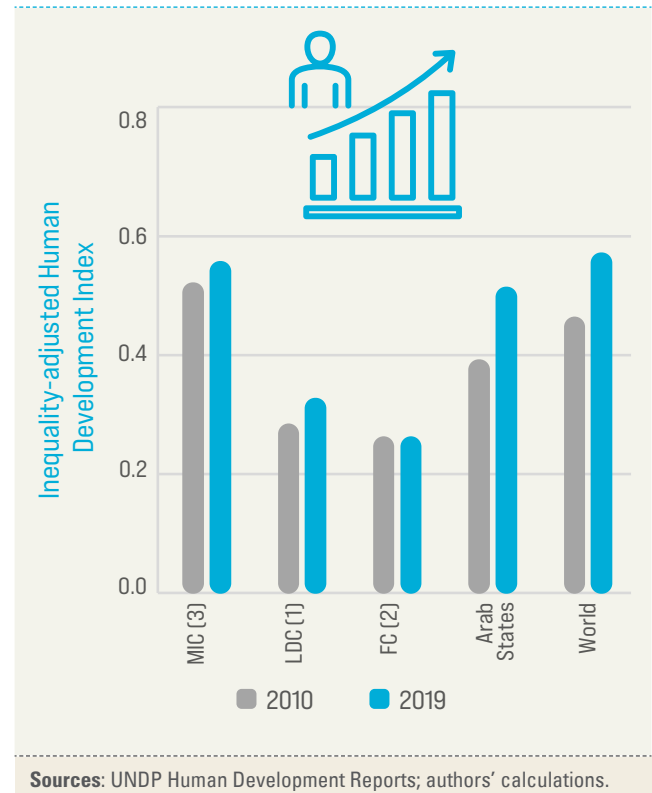
1. Falling behind on human development

While Arab countries have achieved substantial improvements on several key indicators of progress over the last decade, the region falls behind world averages on most measures of

human development. On the IHDI, the region's score was significantly below the world averages in both 2010 and 2019, although the comparison is not necessarily representative as none of the six Arab high-income countries received a score in 2010 and only Oman did in 2019. Because GDP per capita is a major component of the index, Arab high-income countries would likely achieve high scores and raise the regional average.

The middle-income and least developed countries achieved gains from 2010 to 2019, with Jordan, Mauritania and Tunisia making the greatest strides. Yemen fell on the index as the lone case of a fragile and conflict-affected situation, based on available data. To ensure reliable comparisons and avoid changing the country composition, figure 57 only includes middle-income countries, least developed countries and countries with fragile and conflict-affected situations with scores on the index for both 2010 and 2019. Values for the Arab States and the world are published averages.

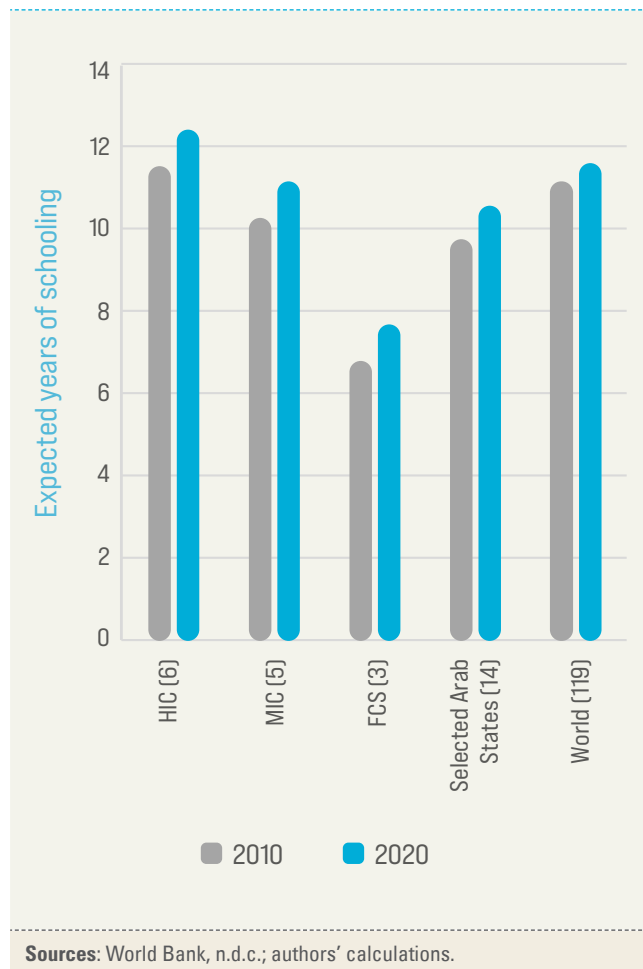
Figure 57. A mixed picture of gains and slow progress is evident from the Inequality-adjusted Human Development Index



2. More schooling but lower performance

In education, the Arab States have generally increased expected years of schooling and reduced pupil-teacher ratios but failed in better performance on international standardized exams. The regional average for expected years of schooling was 10.7 in 2020 for countries with available data, lower than the global average of 11.8 (figure 58). Arab States are “catching up” by improving at a faster rate, however. Egypt, Iraq, Saudi Arabia, the State of Palestine, and the United Arab Emirates all improved by more than one year of schooling over the last decade. Jordan, Kuwait and Qatar saw declines. While the Comoros, Lebanon and the Sudan did not have data for 2010, expected years of schooling fell from 2016 to 2020.

Figure 58. Arab States are catching up on expected years of schooling



Low pupil-to-teacher ratios indicate better outcomes as students receive more individualized instruction. Around 2010 and 2016, high-income countries in the region recorded the fewest students per teacher, but they did not demonstrate improvement at either the primary (figure 59) or tertiary level (figure 60). For example, the primary pupil-to-teacher ratio in the United Arab Emirates increased significantly, from 16 in 2010 to 25 in 2016. Middle-income countries improved their primary pupil-to-teacher ratio but not the tertiary pupil-to-teacher ratio during the same period. The latter was solely due to Morocco’s ratio increasing from 21 to 29 and was not necessarily indicative of a broader trend. The four least developed countries and those with fragile and conflict-affected situations with available data, namely, Lebanon, Mauritania, the State of Palestine, and Yemen, saw improvement on both ratios.

Figure 59. Primary pupil-teacher ratio

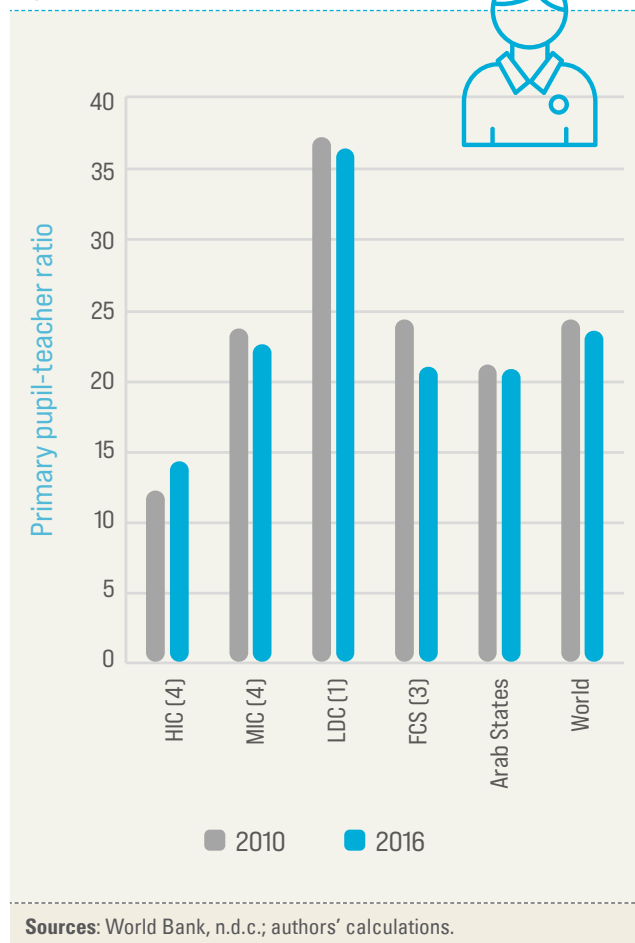
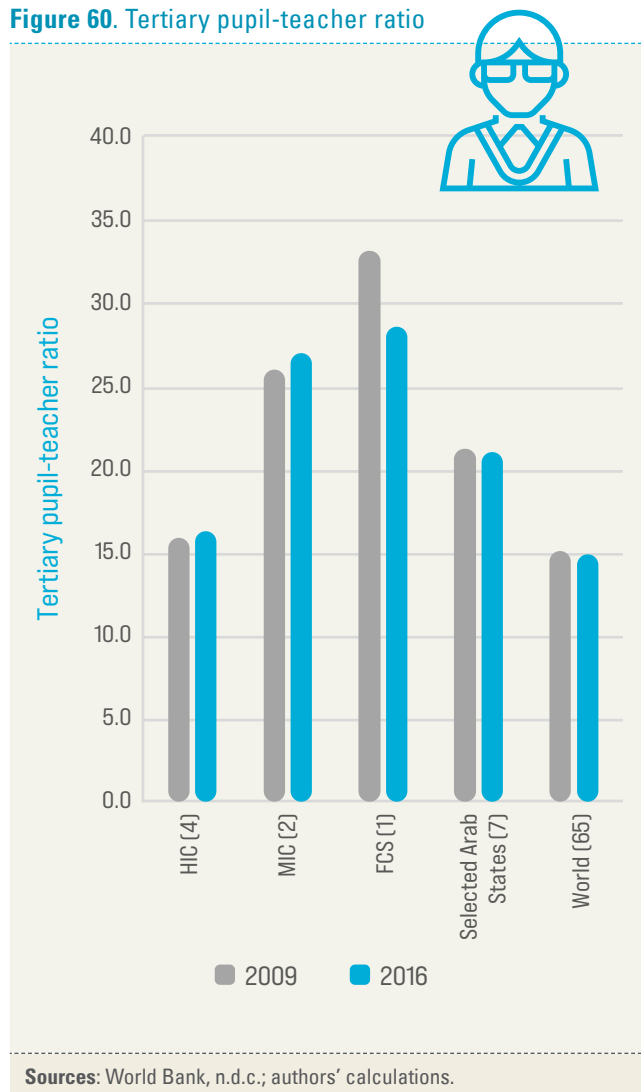
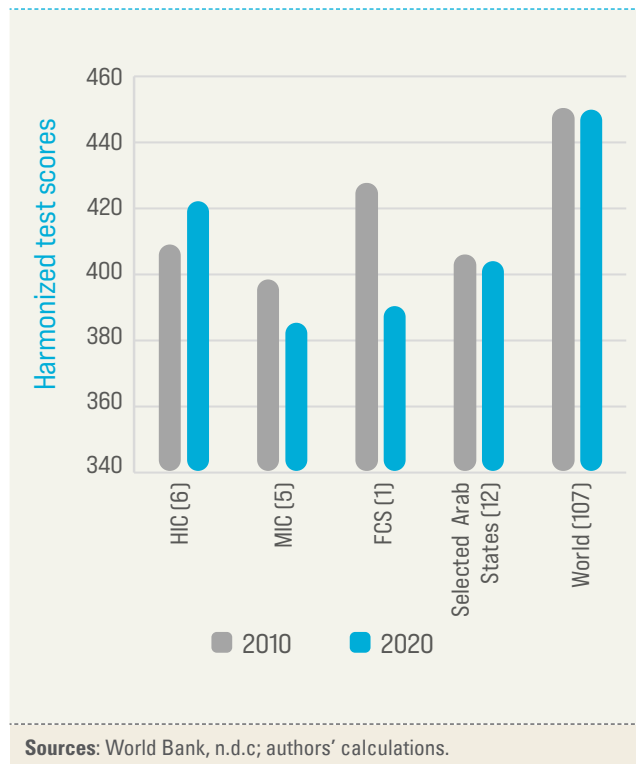


Figure 60. Tertiary pupil-teacher ratio

Despite progress on some education-related indicators, Arab countries failed to achieve better harmonized test scores (figure 61). Seven Arab countries saw an increase from 2010 to 2020 but six saw a decrease. Algeria, Egypt and Tunisia in 2020 all saw declines as reflected in the substantial drop for middle-income countries. Bahrain was the only Arab country to exceed the world average in 2020 but since this indicator covers only 107 countries and omits many least developed countries, it is not a representative average.

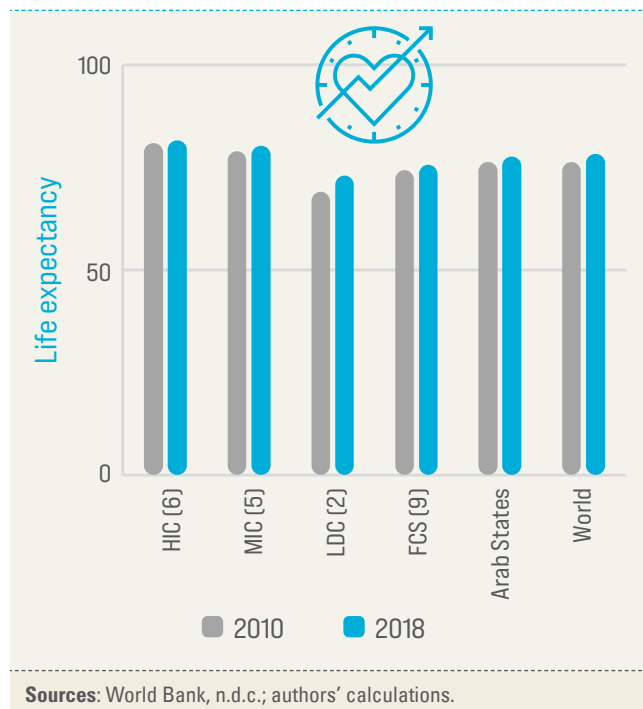
The harmonized test score indicator was computed from scores on various international student achievement tests that were converted to a scale ranging from 325 to 650.

Figure 61. The region does not fare well on harmonized test scores

3. People are living longer but the disease burden remains high

Health outcomes have improved across the region in the last decade. From 2010 to 2019, the Arab States raised average life expectancy from 70.3 to 71.8 years. Globally, on average, life expectancy increased from 70.6 years to 72.6 years (figure 62). High-income Arab countries tend to have the highest life expectancies, led by Qatar, the region's only country with life expectancy greater than 80 years. On the other end are the least developed countries with an average life expectancy of 63.5 years. Of 22 Arab States, only the Syrian Arab Republic experienced a decline in life expectancy from 2010 to 2018. The greatest improvements were in the least developed countries, such as Djibouti, where life expectancy rose by 6.5 years, and Somalia, which gained 3.1 years. Morocco was the sole middle-income country to achieve a surge in life expectancy greater than two years.

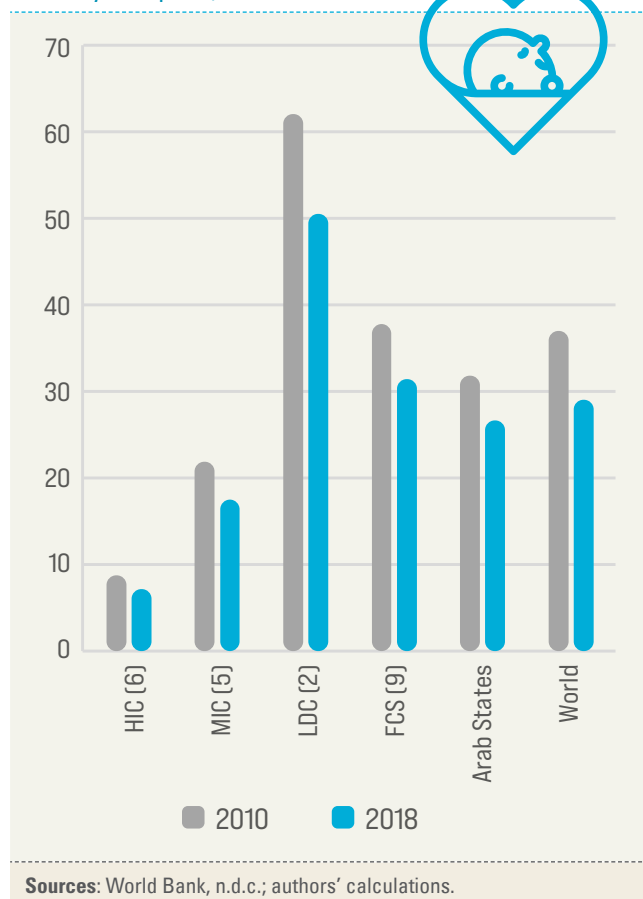
Figure 62. People in almost all countries are living longer



Health outcomes improved region-wide for infants and children. All subregions reduced their infant mortality rate and boosted the probability of survival to age 5. Arab States achieved better outcomes than world averages for both these indicators (figure 63). Substantial differences persist across subregions, however, with the least developed countries achieving far worse outcomes. Their infant mortality rate fell from 62 deaths per 1,000 live births in 2010 to 51 in 2018. High-income countries performed best with 7 deaths per 1,000 live births.

The maternal mortality rate exhibited a similar pattern, where maternal deaths in the least developed countries vastly exceeded those in other subregions (figure 64). They recorded 507 deaths per 100,000 live births, roughly 2.5 times the number of the next closest group, fragile and conflict-affected situations. When aggregated, all four subregions recorded improvements in the indicator but with setbacks in a few countries. The maternal mortality rate increased from 70 to 79 in Iraq, from 23 to 29 in Lebanon, and from 53 to 72 in Libya.

Figure 63. Children have a better chance at survival, infant mortality rate per 1,000 live births



The region's mortality rate from cardiovascular disease, cancer, diabetes, and chronic respiratory disease decreased substantially over the last decade but remains elevated compared to the rest of the world (figure 65). Of 22 countries in the region, 19 achieved improvements; exceptions were Libya, the Syrian Arab Republic and Yemen, all with fragile and conflict-affected situations. The high-income countries have seen the greatest reduction in mortality since 2010, with a decline of 5 percentage points.

The region's mortality rate decreased over the last decade



from cardiovascular disease, cancer, diabetes, and chronic respiratory disease.

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Figure 64. Maternal mortality rates remain high in the least developed countries, maternal deaths per 100,000 live births

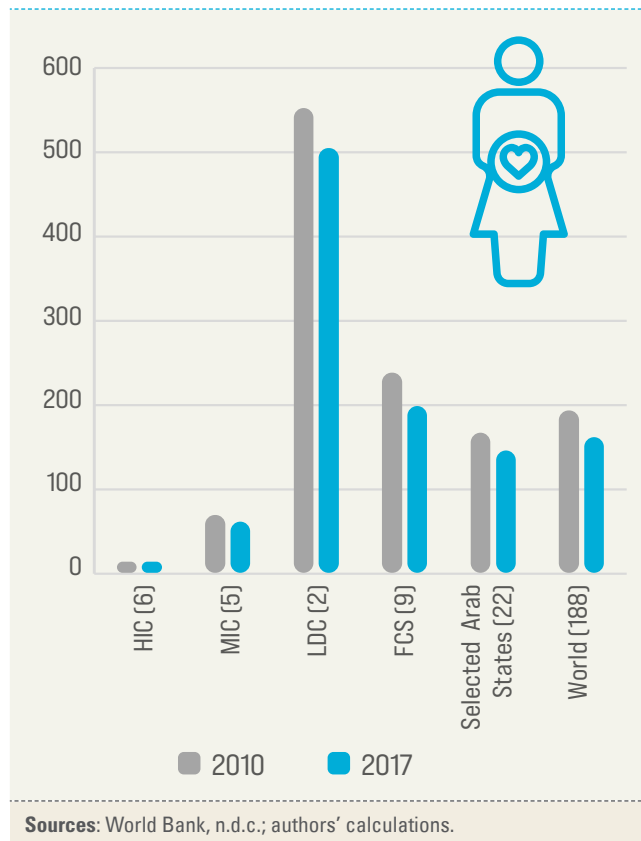
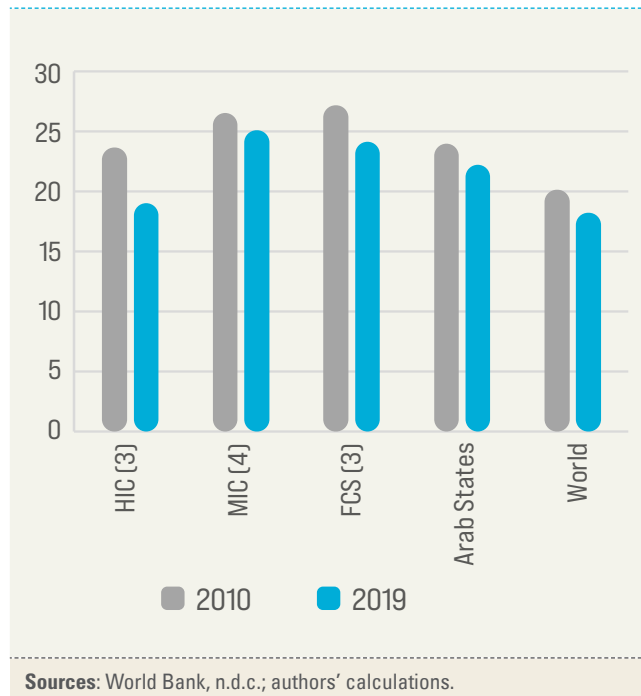


Figure 65. Mortality rates from non-communicable diseases have declined but remain above the global average, between the ages of 30 and 70 (Percentage)



4. Progress on social protection is mixed

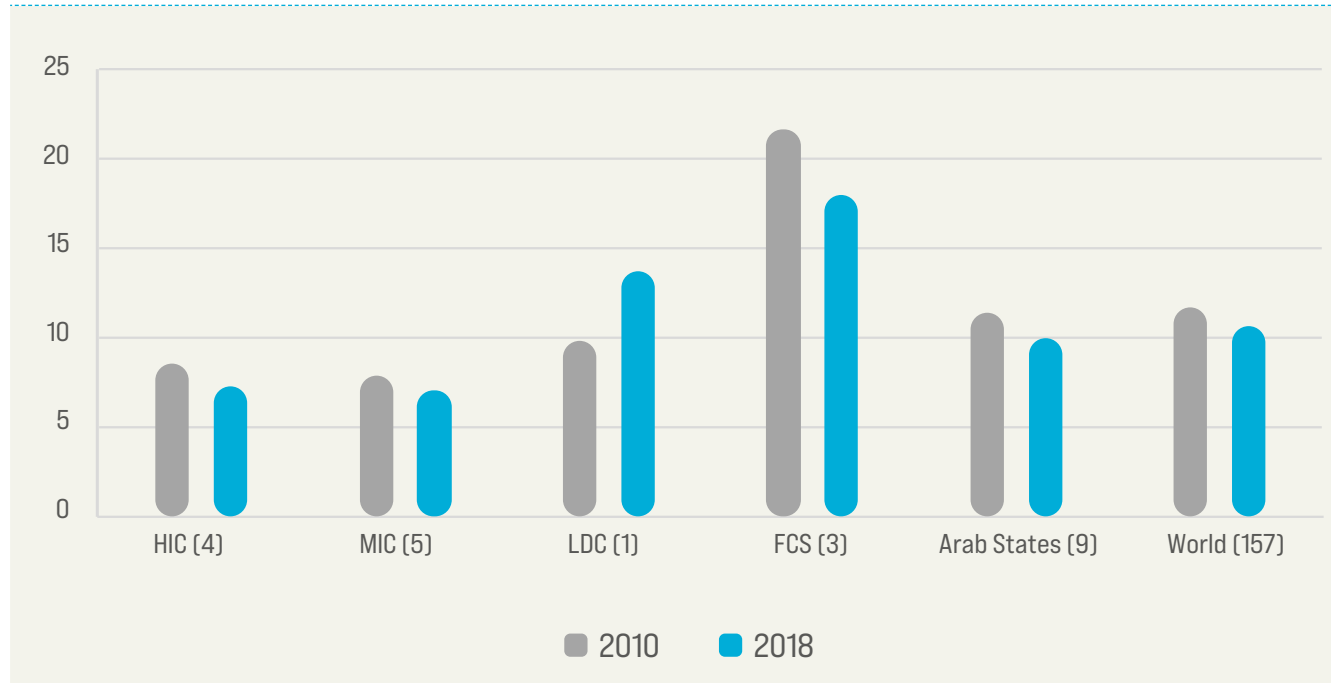
Arab States were on par with the rest of the world in the prevalence of undernourishment in both 2010 and 2018 (figure 66). All States with sufficient data except Iraq and Mauritania saw declines over the past decade. Undernourishment rates are now below 5 per cent for the high- and middle-income countries. Improvement for fragile and conflict-affected situations largely stemmed from the Sudan nearly halving its undernourishment rate from 22 per cent to 12 per cent. Concerningly, undernourishment increased from 7 per cent to 11 per cent in Mauritania, the lone least developed country in the sample. Iraq has the highest prevalence of undernourishment in the region at 24 per cent, according to the latest data from 2018.

Other indicators for social protection lacked sufficient data to analyse progress over time so findings are based on the most recent data and need to be interpreted with these constraints in mind. Disability benefits cover no more than 10 per cent of the population with severe disabilities in each of the Arab States with available data (figure 67). Statutory pension rates for persons of pensionable age are also low (figure 68) at an average of 37 per cent compared to 71 per cent on average globally. The world average is unrepresentative, however, because it includes only 62 countries with available data, and they tend to be more developed countries.

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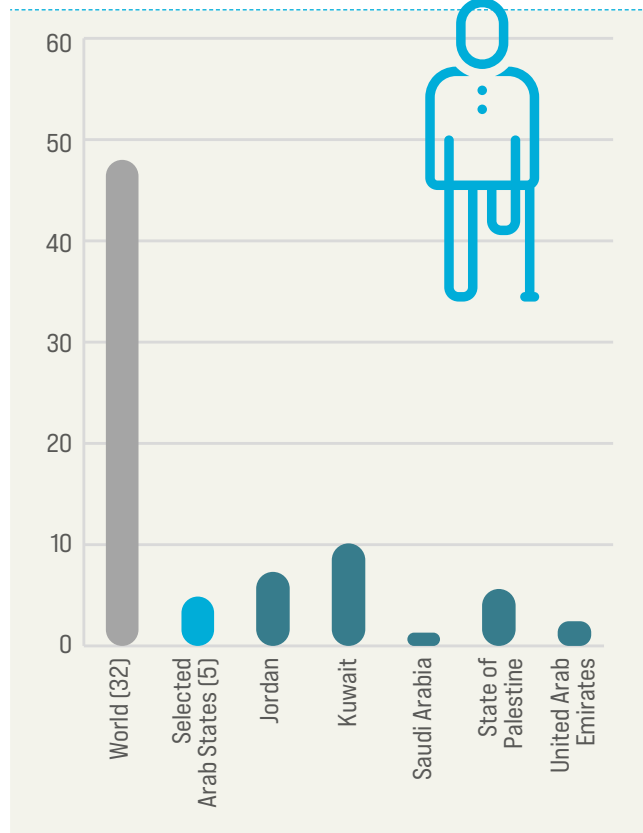
Disability benefits cover no more than 10 per cent of the population with severe disabilities in each of the Arab States with available data.

Figure 66. Declining undernourishment is associated with the reach of social protection (Percentage)



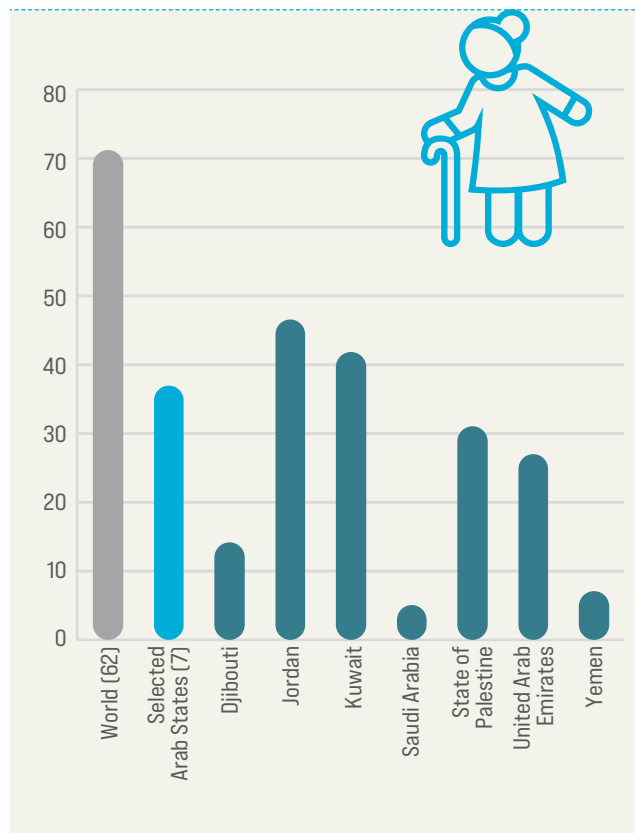
Sources: World Bank, n.d.c.; authors' calculations.

Figure 67. Low benefits coverage for people with severe disabilities (Percentage)



Sources: World Bank, n.d.c.; authors' calculations.

Figure 68. Only small shares of older people receive a pension (Percentage)

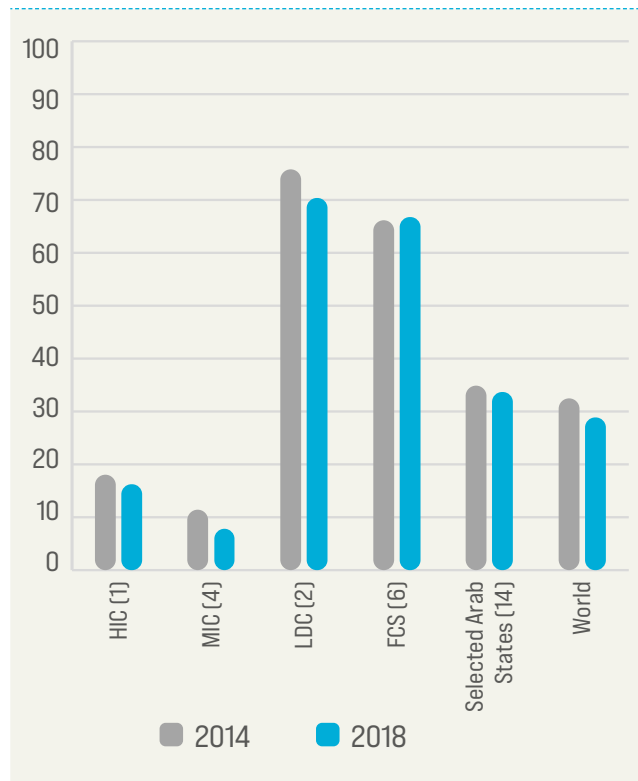


Sources: World Bank, n.d.c.; authors' calculations.

5. Fewer people are living in slums

From 2014 to 2018, most Arab States reduced the share of urban populations living in slums, indicating better housing and community amenities (figure 69). Middle-income countries had the lowest shares, at less than 10 per cent in Egypt, Morocco and Tunisia, based on the most recent data. Lebanon, Somalia and Yemen had rates over 50 per cent. The Sudan had the most elevated share of slum-dwellers in the region at 88 per cent, down from 92 per cent in 2014. The Syrian Arab Republic notably saw its rate double from 19 to 38 per cent in just four years.

Figure 69. Better housing and community amenities are associated with reduced urban populations in slums (Percentage)



Sources: World Bank, n.d.c.; authors' calculations.

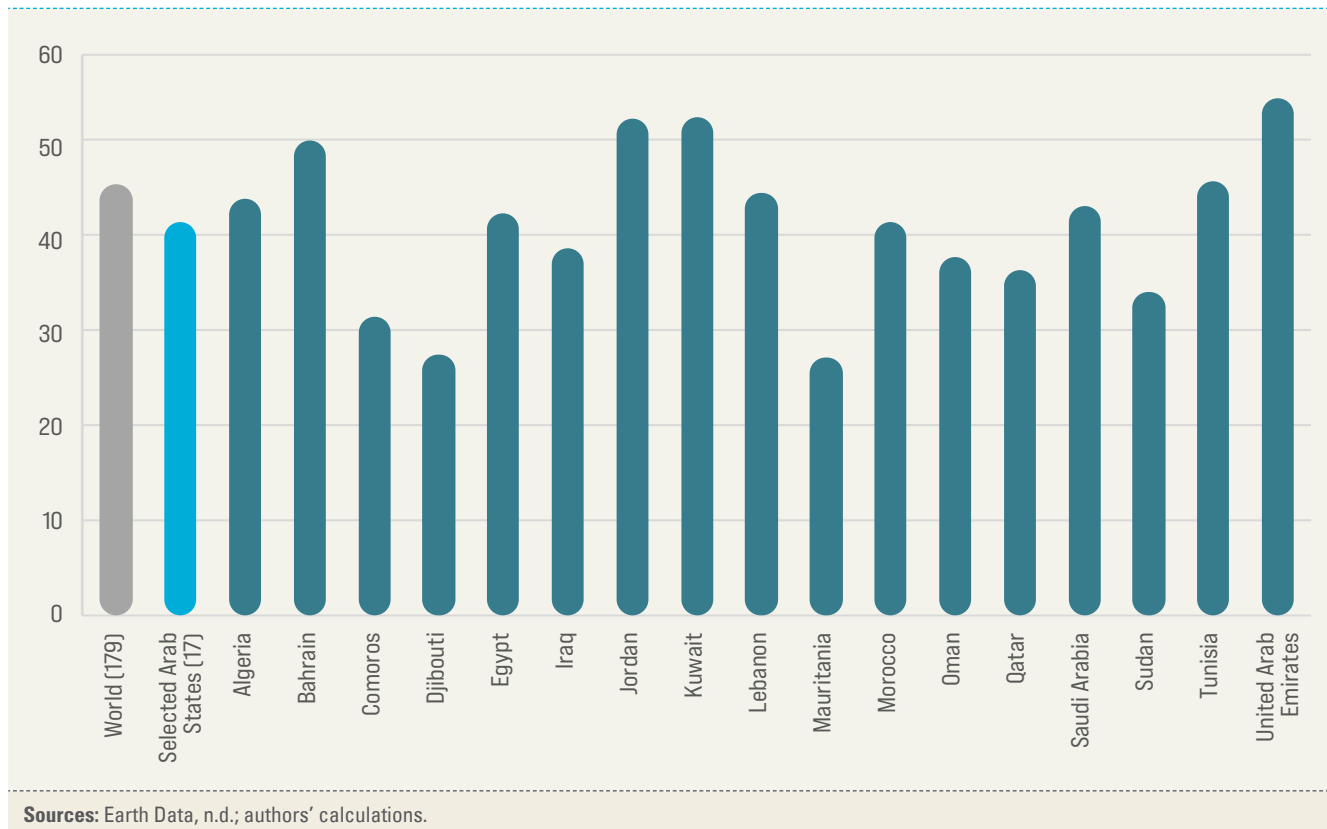
Note: Data were available for 13 Arab States. Calculating aggregations for the region and income groups required information on the size of the urban population. This was only available for eight countries. To show the greatest possible number of countries, we used total population as a proxy for urban population and weighted by that metric. Total population had a correlation of 0.95 with urban population in the countries with both figures available.

6. Performance on environmental protection varies

The Environmental Performance Index is based on 32 indicators covering a variety of environmental issues. Globally, the index ranges from a maximum value of 82.5 for Denmark to a minimum value of 22.6 for Liberia. The average for the Arab region was 42.2, slightly below the world average of 43.6 (figure 70). The best-performing Arab States were mainly high-income countries such as Bahrain, Kuwait and the United Arab Emirates, with scores over 50. High-income countries such as Oman and Qatar, however, received considerably lower scores. Middle-income countries generally performed close to the regional average, except for Jordan, which was one of the highest achievers in the region. The lowest scores were in the least developed countries and those with fragile and conflict-affected situations, including the Comoros, Djibouti, Mauritania, and the Sudan.



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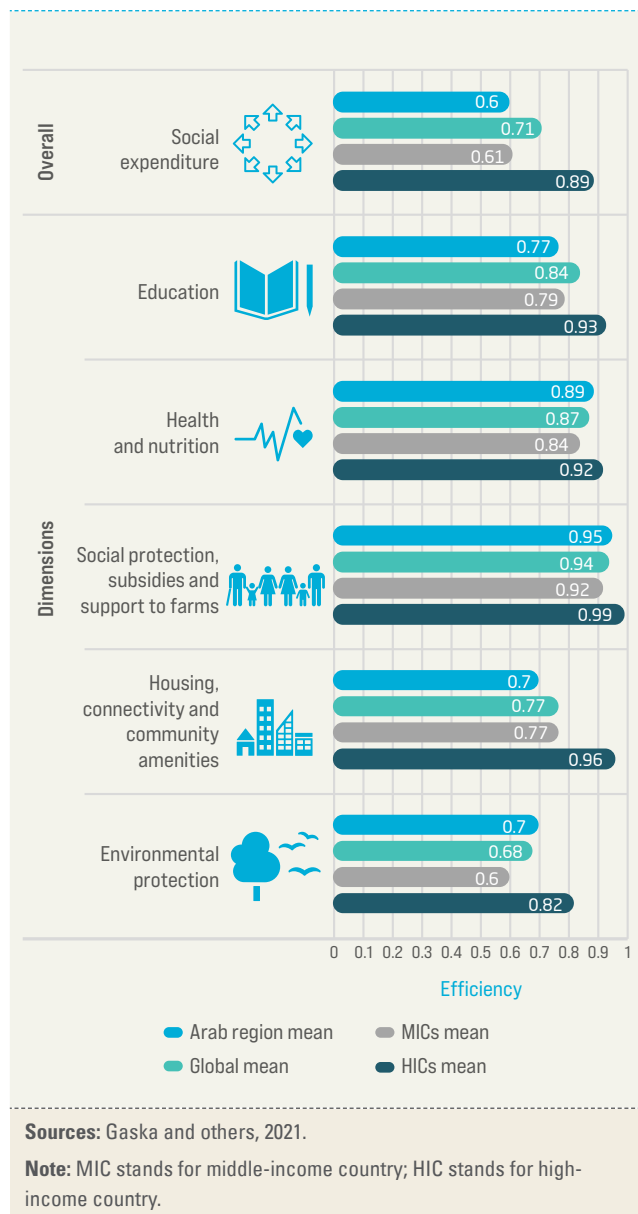
Figure 70. The region is slightly behind the world on the Environmental Performance Index, 2018

B. Social expenditure efficiency: how the Arab region compares to the world

The mixed contributions of public social expenditure to social outcomes in the Arab region underline the need to look at expenditure efficiency. An assessment based on input and output indicators suggests substantial scope for improvement in allocating and using funds in the region. The selection of the estimation method and the choice of indicators are the most relevant for the exercise, given the conceptual linkages and limitations of cross-country data coverage which restricts the estimation of efficiency to selected performance indicators.¹³⁵ As a performance measure of overall social expenditure, the report uses the IHDI as a broad measure of human well-being.¹³⁶ The IHDI measures a country's achievements in education, health and income as well as how evenly those

are distributed in a population. The index value equals the human development index value when there is no inequality but falls below the latter as inequality rises. Well-targeted public social expenditure programmes correct imbalances in society and improve overall achievements in human development, including in education, health and income. The correlates of performance measures are also discussed in later part of the chapter. For the Arab region, the overall social expenditure efficiency (0.61) is below the global average (0.71) and below the average of high-income countries (0.89) between 2016 through 2018 based on the model (figure 71). Major inefficiencies appear in education, housing and environmental expenditures.

Figure 71. Low social expenditure efficiency is driven by inefficiency in spending on education, housing and the environment



Computing public social expenditure efficiency scores for nine Arab States found that seven are less efficient than the global average; about 15 per cent lower on average. This amounts to a loss of at least \$30 billion or nearly 4 per cent of aggregate GDP of the seven countries (table 4). The efficiency loss varies between nearly 1 per cent of GDP in the Sudan and Lebanon to over 5 per cent in Egypt. Some countries in the region, such as Oman and the State of Palestine, are more efficient overall than the global average.



Public social expenditure efficiency scores for nine Arab States show that seven are less efficient than the global average; about 15 per cent lower on average. This amounts to a loss of nearly 4 per cent of GDP of the seven countries.

Looking at specific sectors, in education expenditure, Arab countries are significantly less efficient than the global average. They achieve fewer expected years of schooling than global peers relative to spending levels. Average overall education expenditure efficiency is 0.77 compared to the global mean of 0.84. Considering components of education expenditure, Arab countries fare better, especially on primary and secondary education spending. Regional efficiency here was 0.94 compared to the global mean of 0.92. Efficiency in tertiary education is lower than the global average (figure 72).

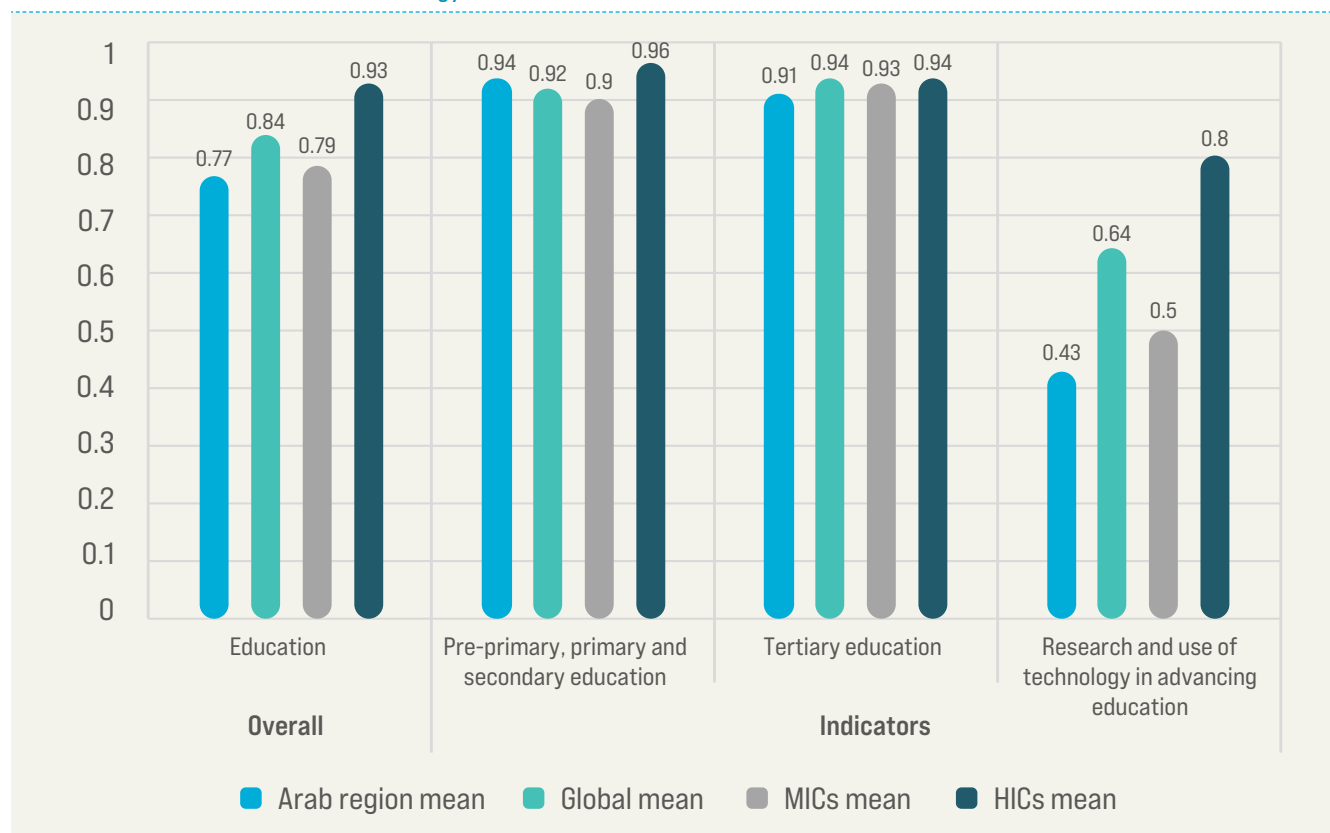
Arab countries have managed to reach relatively good pupil-to-teacher ratios given their level of public education expenditure. Private educational finance influences these outcomes, however, allowing high efficiency scores despite low public expenditure. A particularly weak point is expenditure on research and use of technology in education, where Arab countries are considerably below global, middle-income and high-income country averages.

Table 4. Arab countries lose billions of dollars through inefficient social expenditure

	Efficiency score	Efficiency gap compared to the global average ^a (percentage)	Efficiency loss (billions of dollars)	Efficiency loss (percentage of GDP), 2019
Egypt	0.44	-37.7	-18.92	-5.20
Iraq	0.52	-26.4	-4.77	-2.82
Jordan	0.64	-10.2	-0.60	-1.36
Lebanon	0.62	-12.5	-0.27	-0.97
Morocco	0.41	-42.1	-4.71	-4.10
Sudan	0.46	-35.3	-0.23	-0.67
Tunisia	0.57	-19.2	-1.20	-2.83
Oman	0.78	10.3	0.00	0.00
State of Palestine	0.98	37.8	0.00	0.00
Arab States (aggregate)	0.60	-15.0	-30.70	-3.70

Source: Gaska and others, 2021.

Note: The choice of indicator and its link to an output or outcome are driven partly by conceptual analysis and partly by data coverage. For example, the performance measure of education expenditures relating to the quality of schooling is unfortunately not available or not adequate for such assessments. Therefore, the teacher-pupil ratio was taken as a proxy to indicate that higher public expenditure on education would improve the teacher-pupil ratio, which improves the quality of education in general. Similarly, indicators such as poverty rate, poverty gap and coverage of social protection benefits for children are critical to assess efficiency but lack adequate data. These are discussed in box 5 as a robustness check.

Figure 72. Education expenditure efficiency in the region is dragged down by inefficiencies in tertiary education and education research and use of technology

Source: Gaska and others, 2021.

Note: MIC stands for middle-income country; HIC stands for high-income country. Efficiency scores of components are not additive. See the note in Table 3 of the chapter for explanation.

Arab countries are relatively efficient in turning health expenditures into better health outcomes, represented by overall life expectancy. Health expenditure efficiency in Arab countries is 0.89, higher than the global mean of 0.87 (figure 73). This is mostly due to above-average efficiency in outpatient spending and expenditure on public health (0.86 and 0.96 compared to 0.85 and 0.95, respectively). For inpatient expenditure, efficiency is in line with the global benchmark of 0.96. A limitation of health efficiency scores, however, is that they include only Government health expenditures. Outpatient and public health spending are often financed by out-of-pocket expenditure, which in the region shot up from \$43 per capita in 2000 to \$103 in 2018.

The overall efficiency of social protection expenditure in Arab countries is relatively

good if measured based on the prevalence of undernourishment (figure 74). Arab countries are almost at par with the global mean. For different subcategories of social protection expenditure, however, the situation looks much worse. For expenditure targeted to older persons, the average efficiency score is just 0.54 compared to the global average of 0.89. Despite spending on old-age benefits, the proportion of people above statutory retirement age and covered by benefits is still very low. Even worse is the coverage of disability benefits, which reach a very small proportion of the disabled population. The efficiency of expenditure on family benefits, where the outcome indicator is the prevalence of anaemia among women of reproductive age, is 0.76 compared to a global mean of 0.82.

Figure 73. The region's health expenditure efficiency is higher than the global mean but does not reflect high levels of out-of-pocket spending

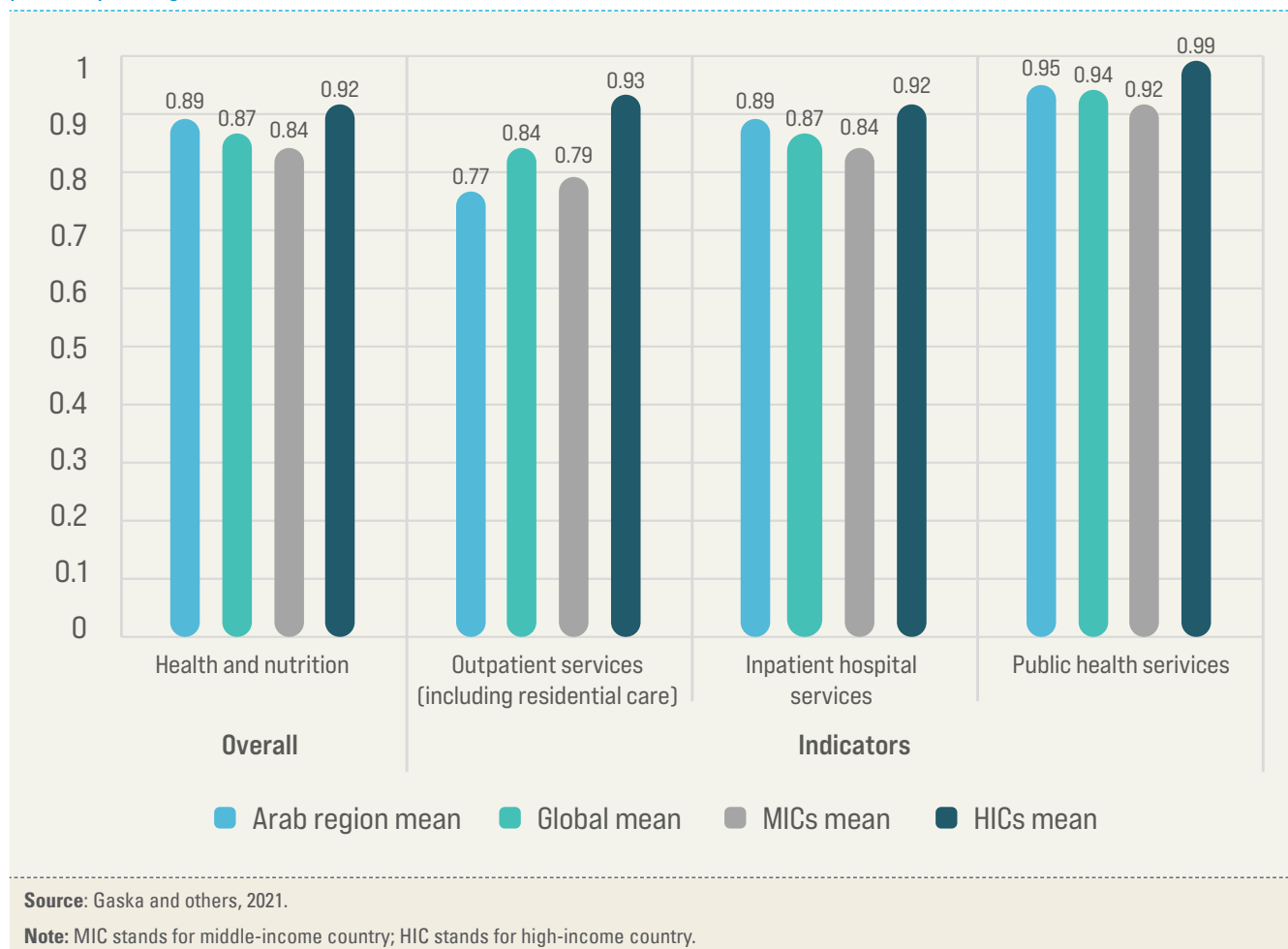
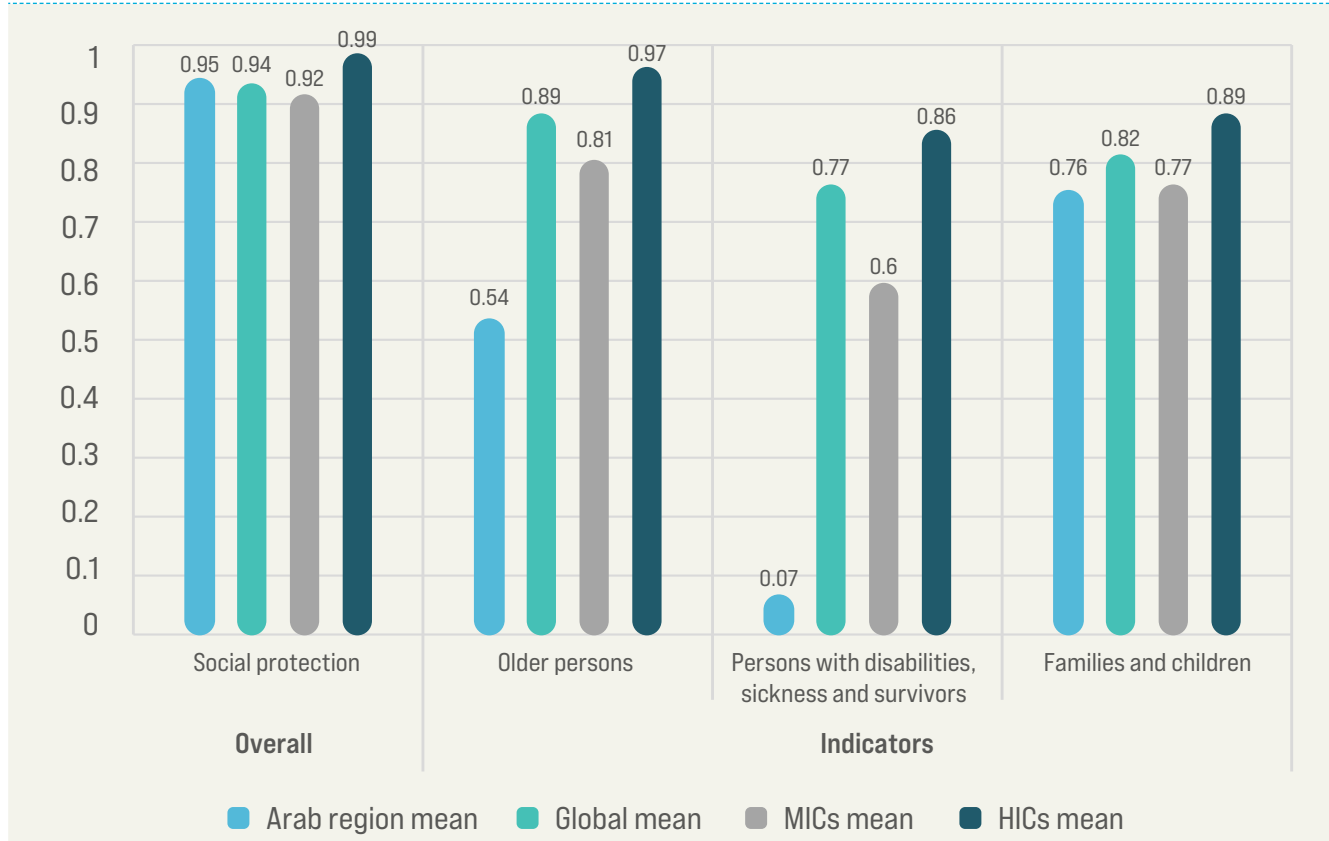


Figure 74. Social protection expenditure efficiency is relatively good overall but lags on several subcategories



Source: Gaska and others, 2021.

Note: MIC stands for middle-income country; HIC stands for high-income country. Efficiency scores of components are not additive. See the note in Table 3 of the chapter for explanation.

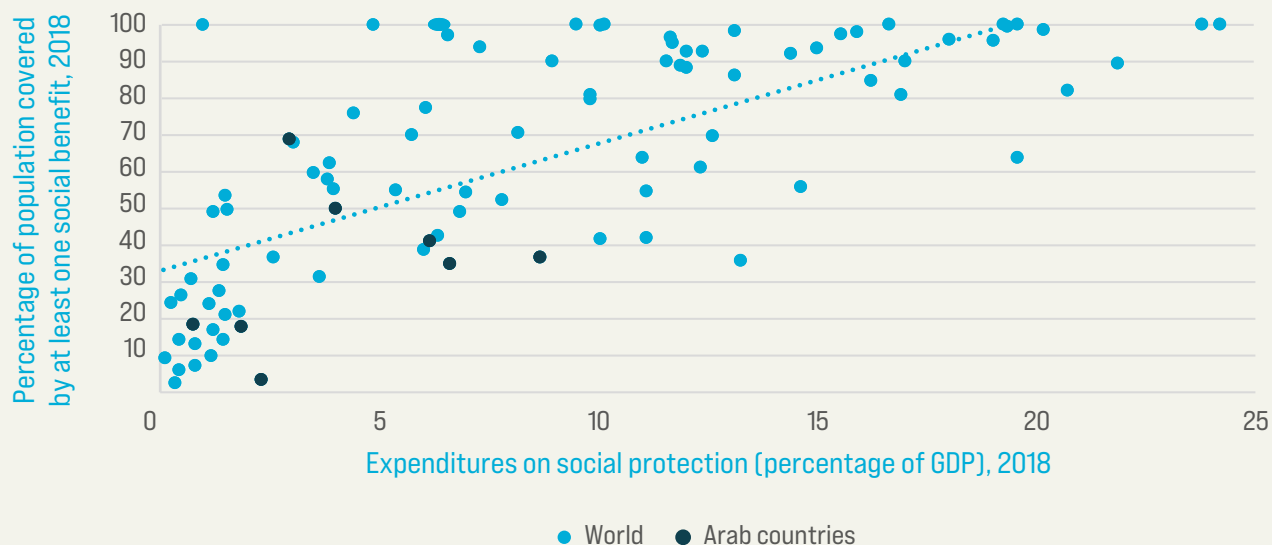
Box 5. Lack of adequate data limits assessment of the efficiency of social protection expenditure in relation to poverty rates

Social protection programmes have direct impacts on reducing poverty. An ideal performance measure of the efficiency of social protection expenditures is therefore the poverty rate. Yet, cross-country and temporal data coverage of poverty measures – income poverty based on international poverty lines or multidimensional poverty rates – are inadequate for efficiency estimations. Given the limitations of these measures in capturing low poverty rates in the Arab States, their use for efficiency analysis becomes questionable. National poverty measures, based on national poverty lines, are non-comparable across countries; hence, they are also not suitable for cross-country efficiency analysis.

The percentage of the population covered by social protection benefits, published by the International Labour Organization, is another indicator for consideration in assessing efficiency although it does not provide information about income poverty or multidimensional poverty. In general, there is a positive correlation between public expenditure on social protection as a share of gross domestic product and the percentage of the population covered by at least one social protection programme (figure A). Some countries, such as Kazakhstan and Singapore, achieve 100 per cent coverage with very little spending, which could be linked to their identification of the targeted population. Since the methodology for identification of the needy population for social protection support varies across countries, using top performers as a benchmark would be questionable. The interpretation of efficiency scores using the social protection coverage indicator becomes difficult.



Figure A. Association between social protection expenditure and social protection coverage rates



Using the prevalence of undernourishment as an outcome indicator of social protection expenditures overcomes these limitations. It is a clear outcome indicator with national coverage. Much evidence suggest that undernourishment is a direct manifestation of poverty. It is also negatively correlated with social protection coverage; countries with higher coverage tend to have lower rates of undernourishment (figure B). While the indicator is not perfect in directly measuring the outcome of social protection expenditure, it can be used to compute efficiency scores for nine countries in the region (figure C). However, outcomes such as undernourishment or poverty have other correlates that may influence outcome over time as well.

Figure B. Association between undernourishment rate and social protection coverage rate

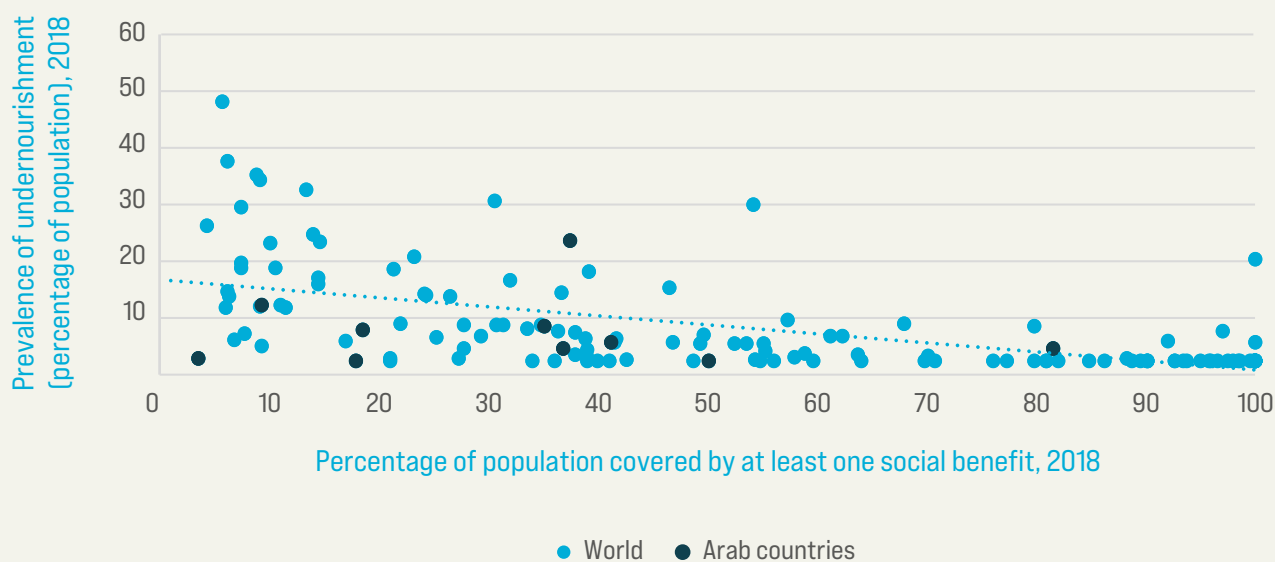
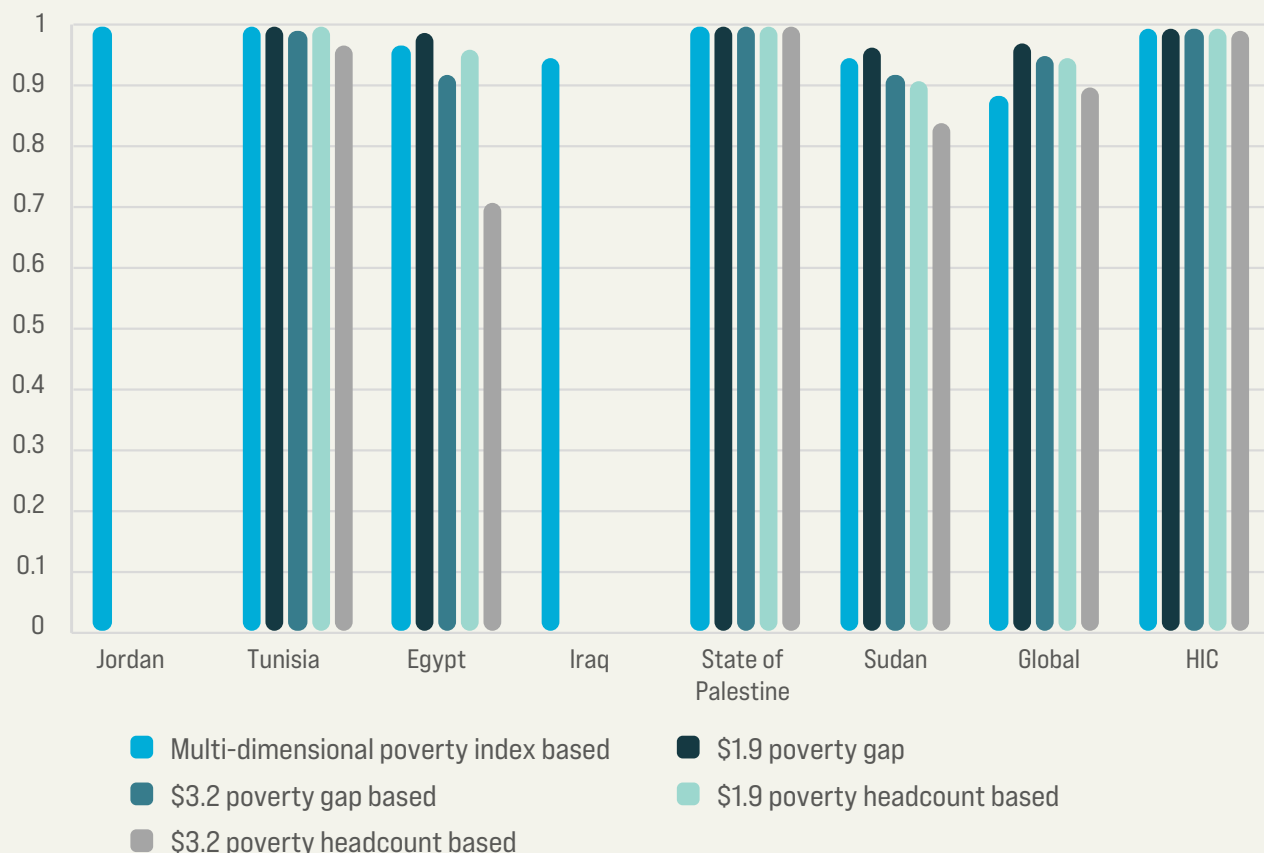
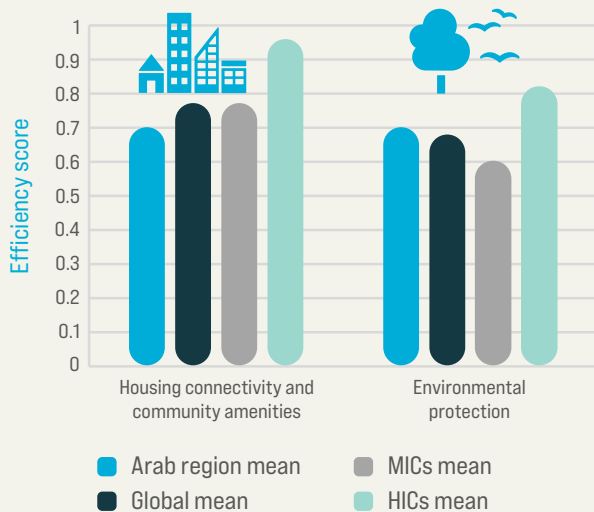


Figure C. Efficiency scores based on different indicators associated with social protection expenditures, as a share of GDP



Sources: Author's calculations, based on data from World Bank, n.d.e.; ESCWA, 2015.

Figure 75. The region does well on environmental protection expenditure efficiency, less so for housing expenditure efficiency



Source: Gaska and others, 2021.

Note: HIC stands for high-income country.

In environmental protection, based on the Environmental Performance Index, the average efficiency of Arab countries is higher than the global average, at 0.70 compared to 0.68, respectively. Efficiency is lower for housing, at 0.70 compared to 0.77, respectively, based on the share of the urban population living in slums (figure 75).



Even States that cannot afford high levels of social expenditure, due to negative fiscal balance, can be efficient.

C. Contributions to efficiency across and within sectors

Overall efficiency in social expenditure builds on efficiency in different dimensions, such as education, health, social protection, housing, and environmental protection. In turn, efficiency in each sector derives from various components. This is illustrated here through decomposing spending on education, health and social protection, where expenditure subcomponents are available.

Across all countries in the sample, on average, the efficiency of expenditures on social protection, education and health makes significant contributions to the overall efficiency of social expenditure. Social protection is slightly ahead, followed by health and education. Housing and environmental protection do not make a statistically significant contribution.

Across the social services, in education expenditure, primary and secondary spending exert the most influence on efficiency. A 1 per cent increase in efficiency in this category would translate into a 0.38 per cent increase in the efficiency of overall education spending. This

is followed by tertiary education and education research and use of technology in advancing education. For health expenditures, improvement in efficiency in one category has only a limited impact on overall efficiency. Inpatient health outlays make the greatest contribution. For social protection, old-age benefits make a significant difference; improvements in other categories do not translate into substantial changes.

A decomposition of efficiency at the country level assessed drivers of changes in efficiency at two points of time, a three-year average around 2013 and a three-year average around 2018, for overall as well as education and health expenditures. In the Arab region, only Egypt, Jordan, Morocco, and Tunisia have enough data to track links between changes in the overall efficiency of social expenditure between 2013 and 2018. The most visible positive impacts come from changes in education expenditure efficiency, such as in Egypt and Morocco.¹³⁷ The influence of other factors is relatively minor. More research is needed to fully understand how efficiency relates to changes in particular spending components.

D. Context makes a difference

Several factors linked to country context can determine the efficiency of social expenditure. As a starting point, globally, the correlation between overall efficiency and total expenditure as a percentage of GDP is positive although not very strong. In figure 76(a), a visible cluster of high-efficiency countries in the upper right corner indicates that almost all countries with social expenditures exceeding about 25 per cent of GDP are relatively efficient. The notion that countries with more fiscal space will likely be more efficient is only partially confirmed by data, however. Fiscal space explains only about 9 per

cent of overall variation across countries. Even States that cannot afford high levels of social expenditure, due to negative fiscal balance, can be efficient (figure 76(b)). The State of Palestine is an example, with an overall efficiency score exceeding 97 per cent even as total public social expenditure stands at 4.2 per cent of GDP.

Compared to fiscal balance or total social expenditure, a Government effectiveness score, based on the World Governance Indicators, better predicts overall efficiency.¹³⁸ The World Governance Indicator on controlling corruption

has a strong positive association with efficiency (figure 76(c)) but is less strong than that of the Governance Effectiveness Indicator (figure 76(d)).

Efficiency is weakly associated with sectoral expenditure (figure 77). The most significant association is for social protection, where sector expenditure explained 22 per cent of differences in efficiency scores. There was no significant relationship between fiscal balance and sectoral efficiency. This suggests that factors other than fiscal variables determine efficiency in education, health, social protection, and environmental protection.

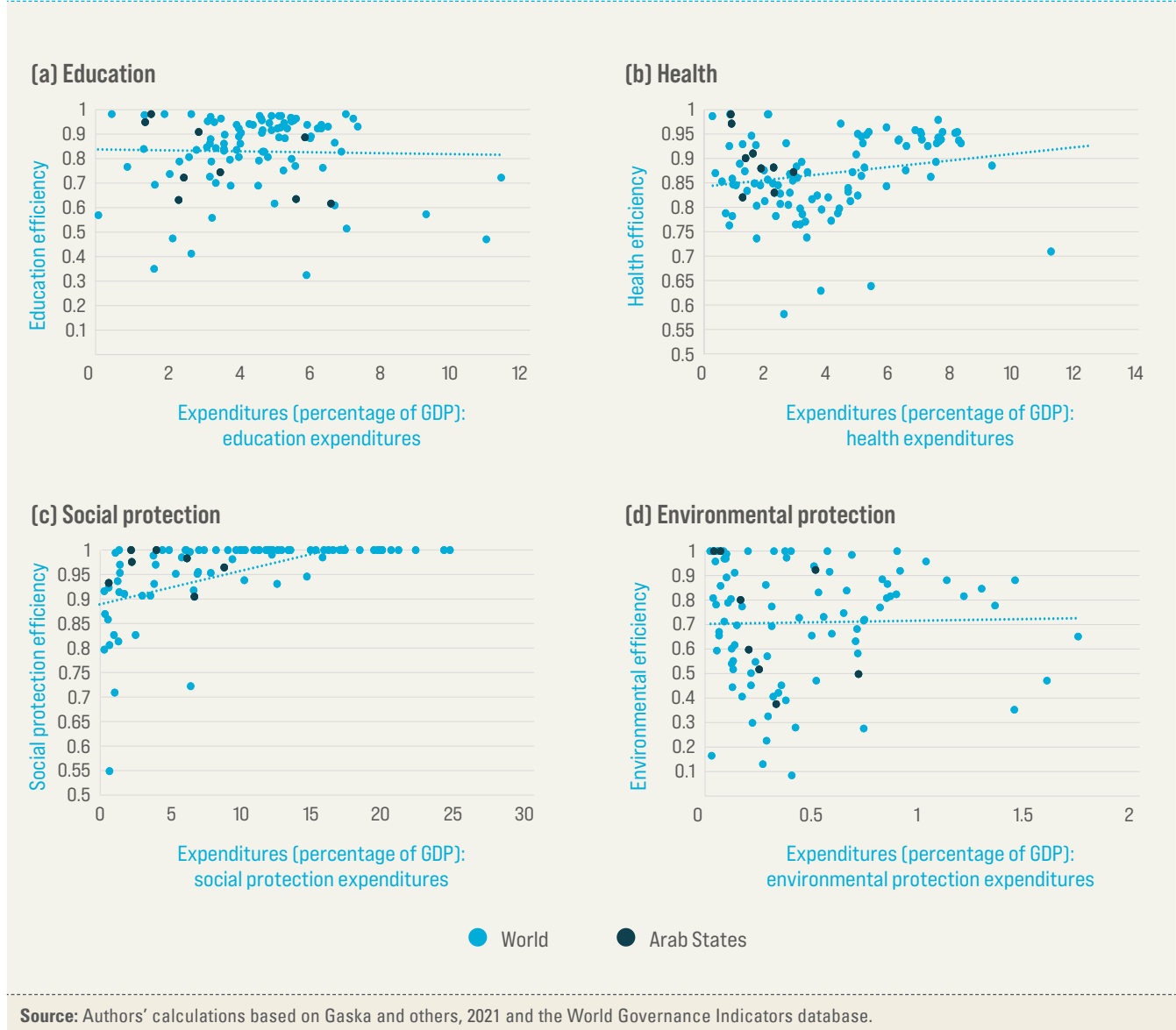


As with overall social expenditure, efficiency at the sectoral level positively correlates with Government effectiveness.

Figure 76. Overall social expenditure efficiency correlates with several fiscal and governance variables



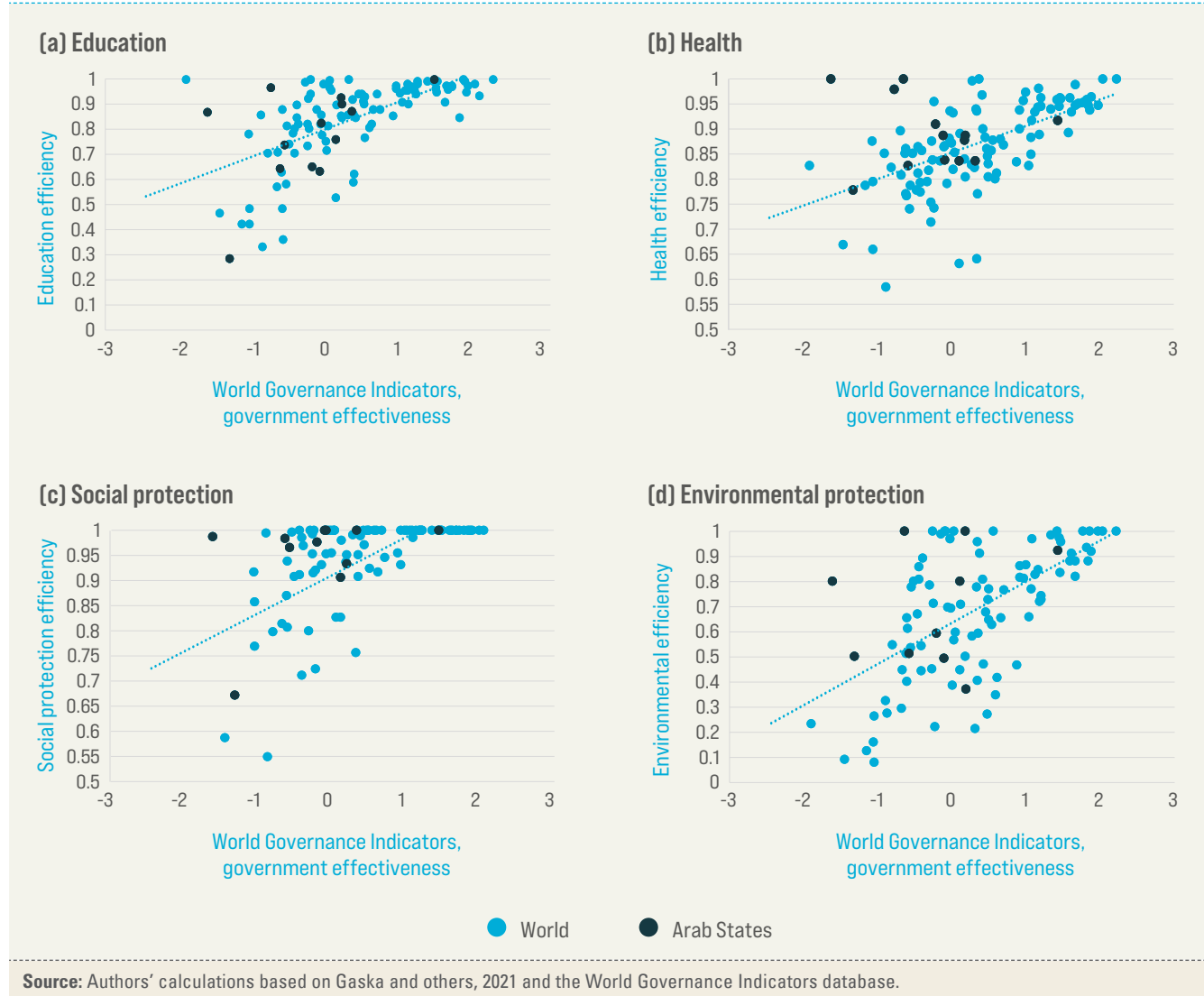
Figure 77. Individual sectors show limited correlation between expenditure efficiency and amount, except for social protection



As with overall social expenditure, efficiency at the sectoral level positively correlates with Government effectiveness (figure 78). The relationship is quite strong and similar across education, health, social protection, and environmental protection. Sectoral efficiencies also fall in a narrow range when considering the World Governance Indicator on corruption, again indicating that Government capacity is a more significant determinant of efficiency than the size of spending.

Within but also beyond sectors, research and development plays a key role in improving

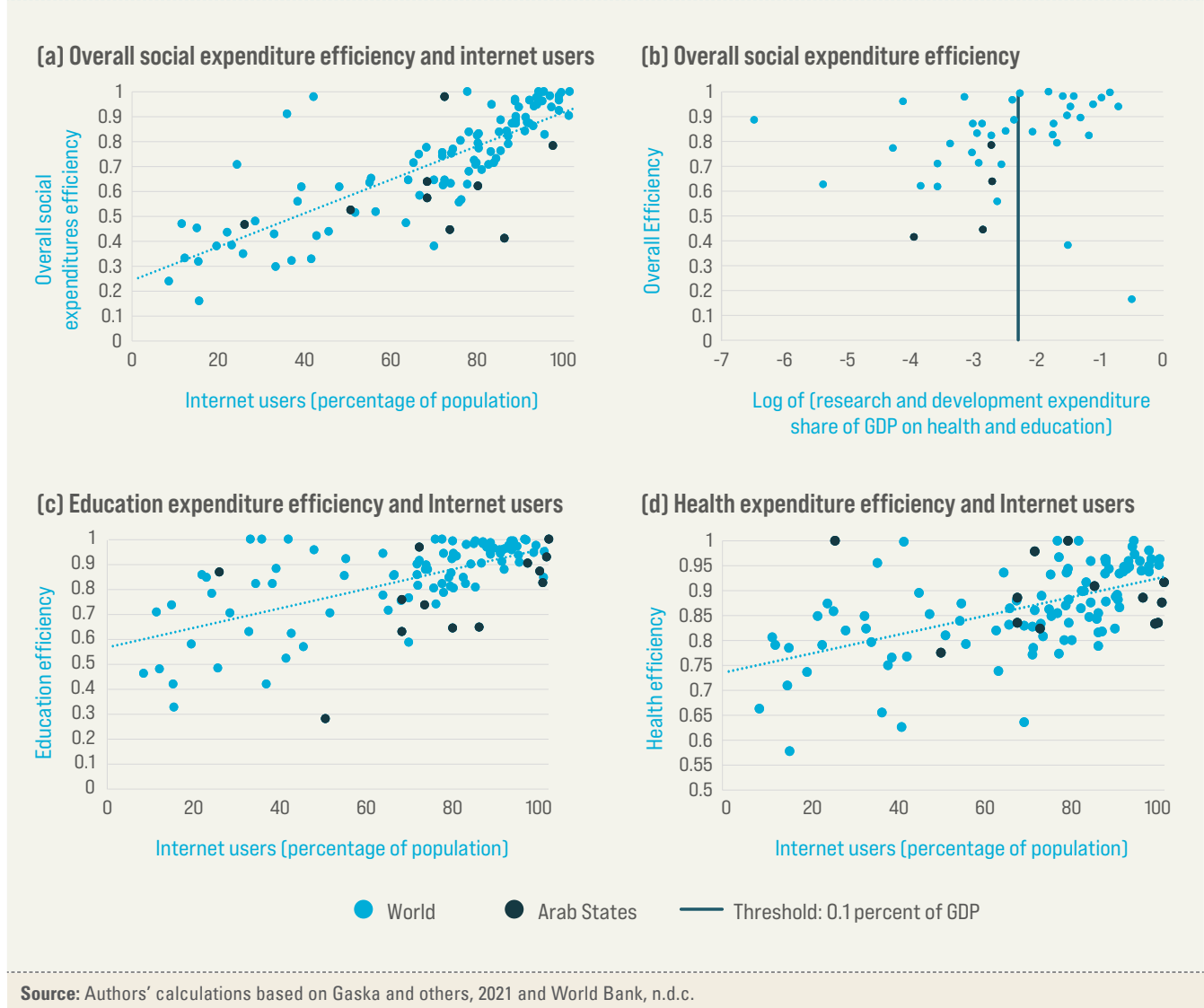
productivity and driving higher efficiency of public social expenditures. Countries that spend higher shares of GDP on research and development in the health and education sectors are more efficient (figure 79(b)). While there are a few outliers, most countries spending more than 0.1 per cent of GDP on education and health research and development, represented by the black/dark blue (depending what color is used) line, have efficiency scores greater than 0.8, while less than half of countries spending less than this threshold have achieved this level of efficiency.

Figure 78. Government effectiveness has a strong impact on the efficiency of sectoral expenditure

Research and development is an important propeller of digital transformation, which can improve the social expenditure coverage of individuals, allow better data collection and monitoring of programmes, and reduce administrative expenses. It enables Governments to respond more quickly and efficiently to critical needs. In improving efficiency, digitalization can spur economic growth, increase the impact of social expenditure, and lead to both a broader tax base and more efficient tax collection. During the COVID-19 pandemic, digital connectivity and services became central to economic and societal activity. Such measures are not universally accessible, however, with nearly 150 million people in the Arab region still unconnected.¹³⁹

Correlation analysis confirms the social impact of information and communications technology (ICT) investment in education (figure 79). When Governments increase spending on research and development and provide a conducive environment for innovation, such as through technology incubators, young people gain abilities to produce advanced technological products, establish their own companies and ultimately drive output growth. Increasing GDP leads to greater revenue collection and expenditure on Government-funded education, health care and other programmes with a social impact. This is an argument for continually increasing expenditure on research and use of technology in advancing education in the Government budget.

Figure 79. Associations between internet users and research and development expenditures and efficiency scores



E. Efficiency and outcome simulations in Jordan and Tunisia

The efficiency scores developed in the previous sections can be used to perform policy simulations over time. Since outcomes are defined as a product of efficiency and social expenditures, both overall and in a particular sector, altering the inputs provides insights on projected changes to outputs. For example, a Government may want to determine the effect on expected years of schooling of a 20 per cent hike in educational spending. It might also want to

know the potential for better outcomes through efficiency improvements. The best results occur when spending increases are combined with efficiency improvements but this is not always possible. Efficiency simulations help countries prioritize their efforts.

One type of policy simulation involves fixing the output indicator at a predetermined level and assessing the possible combinations of

spending and efficiency required to achieve the desired output. This approach was applied to policy simulations using Jordan and Tunisia as examples. Generally, the simulations assessed improvements on SDG indicators if both countries increased social expenditure to global averages and raised efficiency to the average of high-income countries. They also considered potential savings from increasing efficiency alone.

1. Jordan

In Jordan, the simulation determined that improving efficiency to the benchmark level would advance overall human development without increasing social expenditure. If Jordan increased overall social expenditure by 24 per cent from current levels to match the global average of 16.6 per cent of GDP, its IHDI score would increase from 0.622 to 0.628. If Jordan kept its current level of social expenditure, as a share of GDP, and improved its efficiency to match the average of high-income countries, its score on the index would increase from 0.622

In reaching the efficiency of high-income countries, Jordan could reduce

total public social expenditure by

↓ 28%

a saving of

1.1

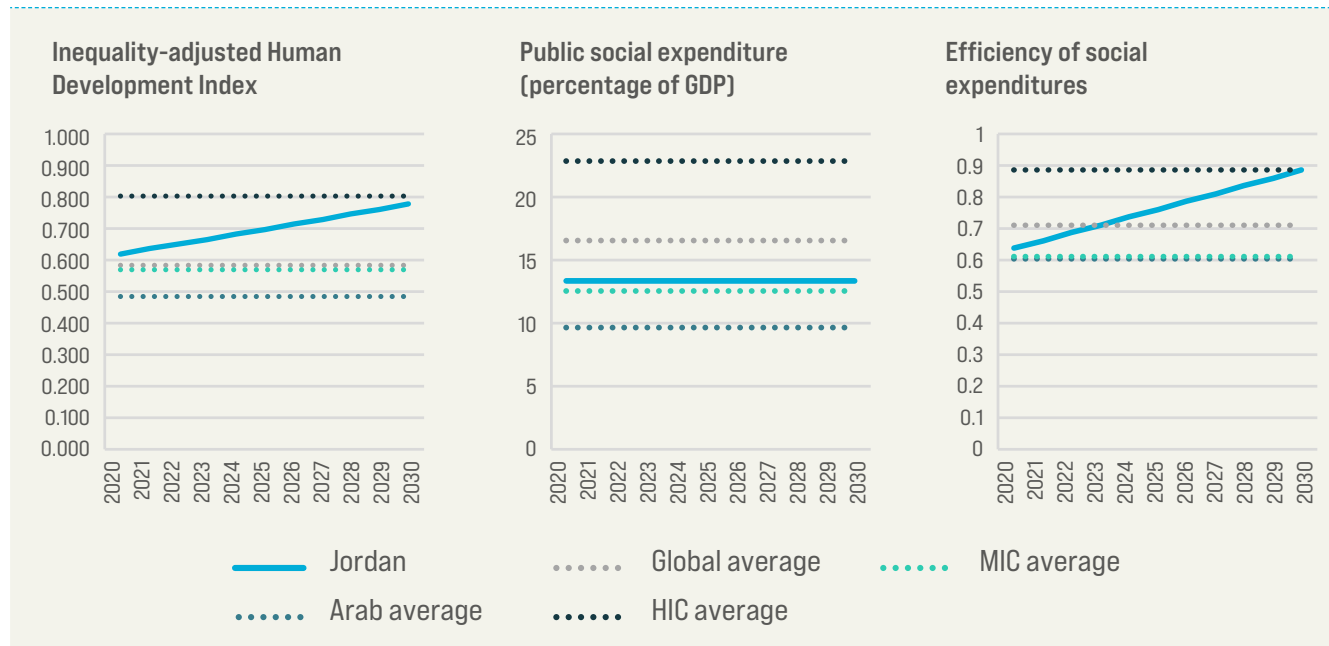
billion Jordanian dinars



without seeing a loss in human development

to 0.774 (figure 80). This would raise Jordan’s world ranking from 72 to 38 out of a total of 152 countries. The magnitude of the estimates may vary depending upon the change in influence of correlates of IHDI over time, but the direction points to the importance of improving efficiency and spending levels toward improving IHDI. In reaching the efficiency of high-income countries, Jordan could reduce total public social expenditure by 28 per cent, a saving of 1.1 billion Jordanian dinars,¹⁴⁰ without seeing a loss in human development (figure 81).

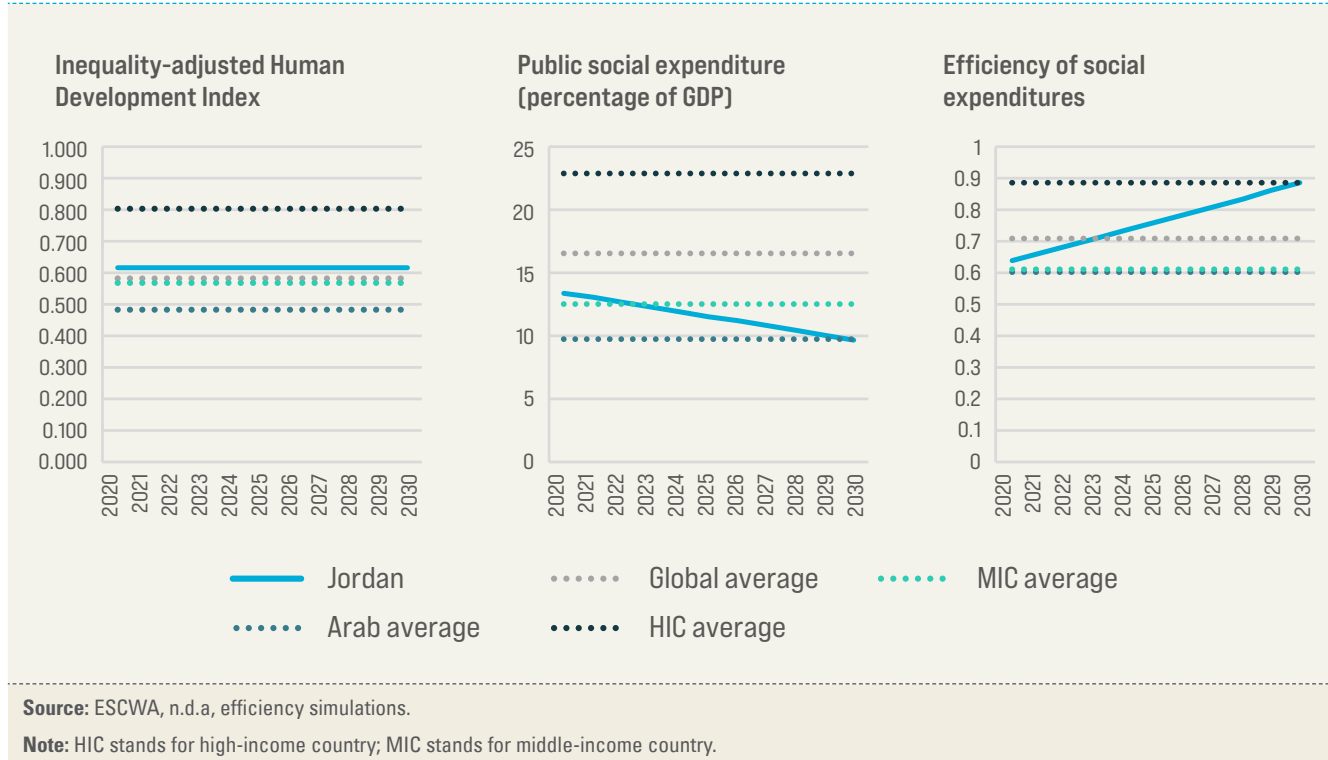
Figure 80. By improving expenditure efficiency, Jordan could attain higher human development for the same costs



Source: ESCWA, n.d.a, efficiency simulations.

Note: HIC stands for high-income country; MIC stands for middle-income country.

Figure 81. By improving expenditure efficiency, Jordan could achieve the same human development outcomes at lower costs



At the sectoral level, improved efficiency would lead to greater outcomes without any change in the level of expenditure or alternately could help save resources if Jordan maintains the same outcome. For instance, keeping the same level of expenditure, if Jordan improved primary education spending efficiency to match the high-income country average, the primary pupil-to-teacher ratio would decline from 19.37 to 12.39. If it increased primary education spending by 5 per cent in line with the global average, the pupil-to-teacher ratio would fall from 12.39 to 12.34. In this example, efficiency enhancements are a more effective means of improving outcomes than allocation of additional resources. If Jordan achieved the overall education efficiency of high-income countries, education expenditures could be cut by 20 per cent from current levels, saving 220 million Jordanian dinars, without reducing expected years of schooling.

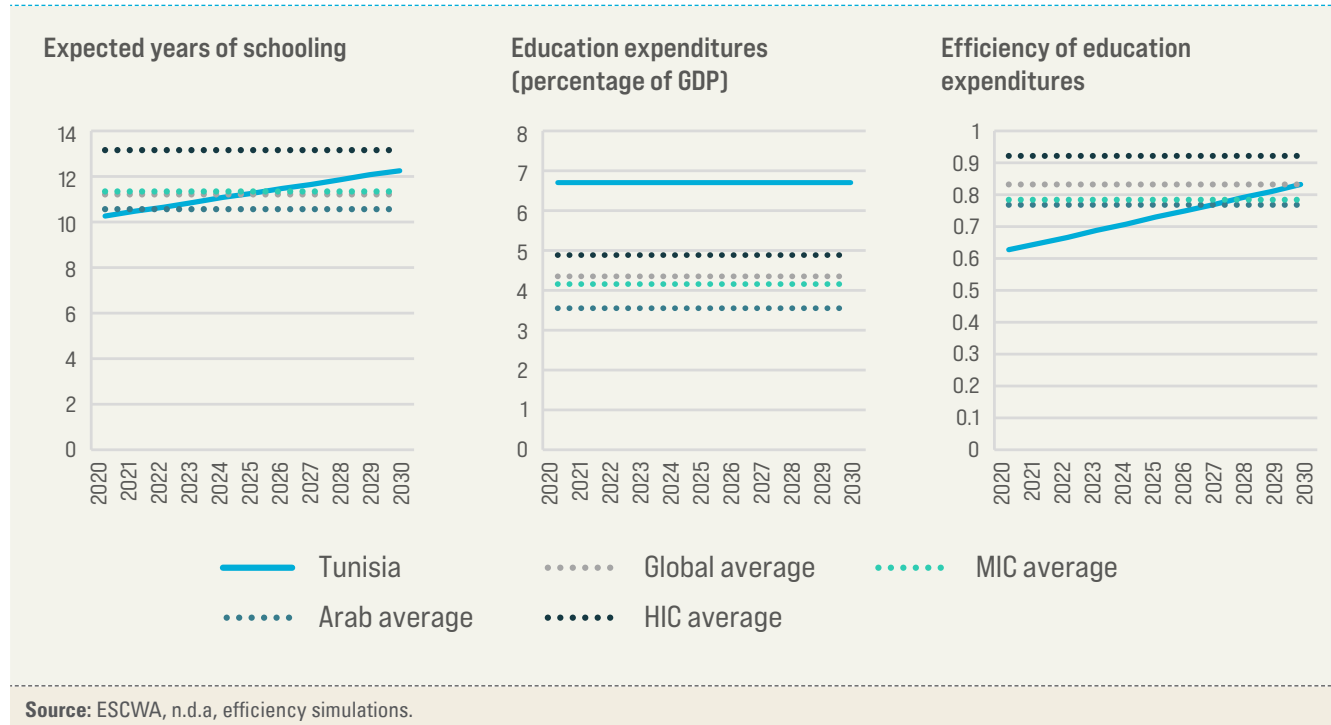
In health, increasing efficiency to match the high-income country average would allow Jordan to maintain its current years of life expectancy while reducing health expenditures by 10 per cent or 73

million Jordanian dinars. Increasing the efficiency of overall social protection spending to the high-income country average would mean that Jordan could lower social protection expenditures by 10 per cent, saving 199 million Jordanian dinars without triggering greater undernourishment.

2. Tunisia

If Tunisia holds total social expenditure unchanged and improves its efficiency to match the global average, its score on the IHD would increase by 34 per cent, from 0.580 to 0.668. Based on the simulations, if the level of social expenditure is raised to the global mean of 16.6 per cent of GDP in combination with improved efficiency, its index score would increase further to 0.675. This would raise Tunisia's world ranking on the index from 77 to 60 out of 152 countries. Alternately, if efficiency meets the global average and Tunisia stays at the same level on the IHD, it can reduce total public social expenditure by 19 per cent, an annual savings of 3.1 billion Tunisian dinars.

Figure 82. Improving education expenditure efficiency in Tunisia could boost expected years of schooling to top levels globally



Improving overall social expenditure has a positive impact in any situation but without improvement in efficiency, the effect is limited. If Tunisia just increased its total expenditure on health, education and social protection by 13 per cent from current levels to match the global average of 16.6 per cent of GDP, its score on the IHDl would increase from 0.580 to 0.586.

years of schooling would increase by two years, from 10.3 to 12.3 years, with unchanged expenditures. Meeting the global average could also reduce education expenditures by 27 per cent or 2 billion Tunisian dinars while maintaining current expected years of schooling (figure 83).

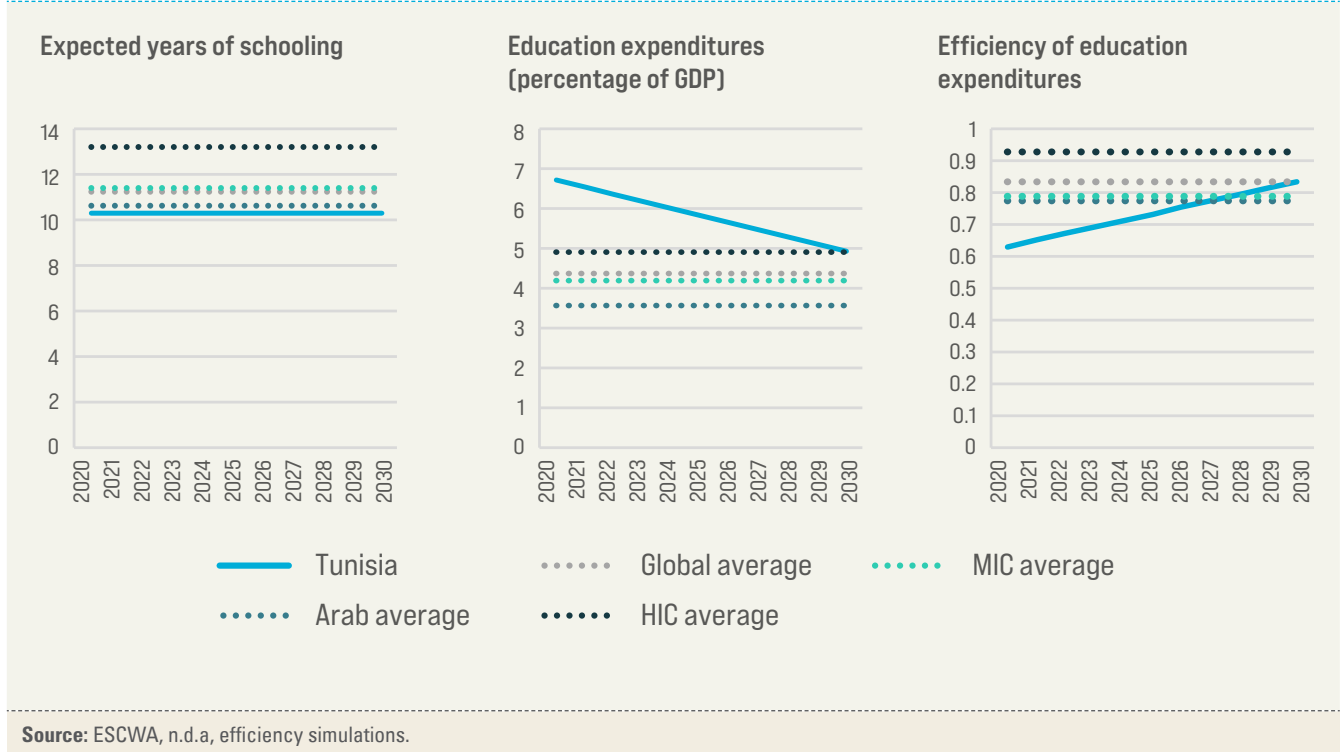
At the sectoral level, improving efficiency in education expenditures can save 2 billion Tunisian dinars without any change in outcome. Tunisia has high expenditure on education, which comprises 6.7 per cent of GDP, exceeding the average share for high- and middle-income countries (4.9 per cent and 4.2 per cent, respectively) as well as the global average of 4.3 per cent. If Tunisia keeps the same level of overall expenditure and improves its efficiency to match the average efficiency of middle-income countries, expected years of schooling could increase by more than one and a half years, from 10.3 to 11.9 years (figure 82). If Tunisia meets the global average for efficiency in education spending, its expected

If Tunisia keeps the same level of overall expenditure and improves its efficiency to match the average efficiency of middle-income countries

expected years of schooling could increase by more than one and a half years

from **10.3** years to **11.9** years

Figure 83. Tunisia could reduce significant wastage in education spending without affecting expected years of schooling



In health, an increase in efficiency to match the high-income country average would allow Tunisia to maintain its current life expectancy while reducing health expenditures by 4 per cent or nearly 80 million Tunisian dinars. On overall social protection, Tunisia is on the “efficiency frontier” for expenditure, given its achievements in reducing undernourishment. There are gaps in performance regarding the coverage of older persons getting social support,

however. If efficiency improved to match the high-income country average, Tunisia could cut social expenditure on older persons by 26.5 per cent, annual savings of 257 million Tunisian dinars, without reducing pension coverage. On environmental protection, by increasing efficiency to the high-income country average, Tunisia could reduce expenditures by 41 per cent or 333 million Tunisian dinars without a negative impact on environmental outcomes.

F. Adequate spending, more efficient choices

The most powerful development outcomes occur when public social expenditure is both adequate and efficient. The Arab region has made investments but without maximizing the returns, a tendency that countries and their citizens can no longer afford. In education, for example, low average efficiency means that Arab countries reach fewer expected years of education than global peers relative to spending levels. In health,

efficiency scores are higher and lag only the global high-income country average. But since this is due to very low public expenditure and high out-of-pocket expenditure, it raises inherent questions around equity and affordability.

While regional spending on housing is higher than relevant global benchmarks, inefficiency is evident in the very high share of urban residents

living in slums in some cases. Public social protection expenditures are relatively efficient on the measure of low levels of undernourishment. Lack of adequate data, however, is a barrier to assessing the efficiency of social protection expenditure in relation to poverty reduction. In addition, outcomes such as undernourishment or poverty have other correlates that might impact the outcome over time as well.

Realizing better outcomes now depends in part on greater efficiency in these and all other

issues central to sustainable development and the SDGs. This is particularly the case given the current budget rigidities, limited fiscal space and shortage of liquidity faced by most countries in the region. Assessing and closing efficiency gaps can minimize waste and ensure that resources reach population groups and areas of development where needs are greatest. In doing so, countries can achieve better outcomes without spending more or achieve the same outcomes by spending less.



Endnotes

- 130 Two SEM dimensions were not included. The arts, culture and sports dimension lacks robust data. Assessing labour market expenditures and employment generation requires using microlevel data such as on participants of labour market support programmes.
- 131 For a detailed methodology, refer to Gaska and others, 2021.
- 132 UNESCO, 2020.
- 133 Sarangi and von Bonin, 2017.
- 134 World Bank, n.d.c.
- 135 The efficiency scores are based on the data envelopment analysis (DEA) method using data from 127 countries globally, including 10 from the Arab region, which sets performance benchmarks (top performers) relative to inputs (at any given level of expenditure). The period for efficiency calculation refers to available data for the most recent years using a three-year average for the expenditure indicator (input) and three-year average for the performance indicator (output). Limited cross-country availability of data restricts the efficiency analysis to selected indicators only, as stated in table 3 (Gaska and others, 2021).
- 136 UNDP, 2020b.
- 137 Gaska and others, 2021.
- 138 A similar positive and strong relationship holds between efficiency score and Regulatory Quality Index score. The latter strongly correlates with the Government Effectiveness Index.
- 139 International Telecommunication Union (ITU) DataHub, n.d.
- 140 Savings calculations are based on the most recent available budget data and GDP estimates IMF, 2021i.

