Annex to chapter 1

1. Data for SDG 1

SDG 1 comprises 7 targets and a total of 14 indicators (6 of which contain multiple subindicators). Of these indicators, 3 are tier I, 7 are tier II, and 4 are tier III for which data is not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides the data sets for a total of eight indicators: 1.1.1 - Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural); 1.2.1 - Proportion of population living below the national poverty line, by sex and age; 1.3.1 - Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable; 1.5.1 - Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population; 1.5.2 - Direct economic loss attributed to disasters in relation to global gross domestic product (GDP); 1.5.3 - Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030; 1.5.4 - Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies; 1.a.2 - Proportion of total government spending on essential services (education, health and social protection). Of the indicators or subindicators that we can use, none has sex-disaggregated data.

Data used in SDG 1 analysis was downloaded on 30 July 2018. After a country level data check following a major global SDG update from the United Nations Statistics Division of 8 July 2019, three series of 1.5.1 (Number of people affected by disaster (number); Number of deaths due to disaster (number); Number of missing persons due to disaster (number)) and one series of 1.5.2 (Direct economic loss attributed to disasters (millions of current United States dollars)) are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total Arab region's population and at least the third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit one of the two series of 1.1.1, and 13 of the 15 series of 1.3.1.

Indicator 1.5.1 is the exact repetition of 11.5.1 and 13.1.1 (Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population); 1.5.2 (Direct economic loss attributed to disasters in relation to global GDP) is almost identical to 11.5.2 (Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters); 1.5.3 is the exact repetition of 11.b.1 and 13.1.2 (Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030); and 1.5.4 is the exact repetition of 11.b.2 and 13.1.3 (Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies). We evaluate them in all chapters.

Indicator 1.5.1 has 15 subindicators, some of which mean the same but are expressed differently, include other subindicators thematically or join two subindicators in one. Some of these subindicators address material losses due to disasters, namely damaged or destroyed dwellings, without referring to the affected people. Moreover, three of these subindicators include disaggregation by "hazard type" with an extensive number of categories (59; making 189 total series under 1.5.1), yet they are incomplete when looking consistently across countries/territories. We present a summary of the series of 1.5.1 and how they relate to each other in table 1.

Table 1.1 Summary of the series provided by the United Nations Statistics Division for indicator 1.5.1 (also for indicator 13.1.1)

Series 1	**Number of people affected by disaster**	
Series 2	Number of injured or ill people attributed to disasters	Included in the first series
Series 3	Number of people whose livelihoods were disrupted or destroyed, attributed to disasters	
Series 4	Number of people whose damaged dwellings were attributed to disasters	
Series 5	Number of people whose destroyed dwellings were attributed to disasters	
Series 6	Number of directly affected persons attributed to disasters per 100,000 population	Expressed differently
Series 7	**Number of missing persons due to disaster**	
Series 8	**Number of deaths due to disaster**	
Series 9	Number of deaths and missing persons attributed to disasters, **by hazard type**	Joins the two series and with disaggregation by hazard type
Series 10	Number of deaths and missing persons attributed to disasters	Joins the two series
Series 11	Number of deaths and missing persons attributed to disasters per 100,000 population	Joins the two series and expressed differently
Series 12	**Number of damaged dwellings attributed to disasters**	
Series 13	Number of damaged dwellings attributed to disasters, **by hazard type**	With disaggregation by hazard type
Series 14	**Number of destroyed dwellings attributed to disasters**	
Series 15	Number of destroyed dwellings attributed to disasters, **by hazard type**	With disaggregation by hazard type

We observe that series 2, 3, 4 and 5 are included in series 1; series 6 is just a different way to express series 1; each of series 9, 10 and 11 join series 7 and 8 whereby series 9 also comes with disaggregation by hazard type and series 11 is also a different way to express series 10; and that series 13 and 15 are nothing but the respective hazard type disaggregated versions of series 12 and 14. When there are many subindicators that mean the same but are expressed differently, we choose the one among these subindicators that is more representative, is easier to interpret, and has more data availability. Furthermore, when a series thematically covers the other, we only keep the series which has the broader measure. In light of all this, we only preserve and evaluate the following five subindicators from 1.5.1: Number of people affected by disaster; Number of missing persons due to disaster; Number of deaths due to disaster; Number of damaged dwellings attributed to disasters; and Number of destroyed dwellings attributed to disasters.

The following indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 1.2 shows the number of substituted data points for each year, including those from Arab countries.

Table 1.2 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
1.1.1 (Proportion of population below international poverty line of US$1.90)	26 (0)	2016
	39 (1)	2015
	23 (2)	2014
	11 (2)	2013
	13 (1)	2012
	10 (3)	2011
	10 (2)	2010
	11 (1)	2009
1.2.1 (Proportion of population living below the national poverty line)	22 (0)	2016
	23 (2)	2015
	19 (3)	2014
	12 (1)	2013
	15 (2)	2012
	10 (2)	2011
	10 (1)	2010
	10 (1)	2009

1.3.1 (Proportion of population covered by social assistance programmes) and (Poorest quintile covered by social assistance programmes)	2 (0)	2016
	5 (0)	2015
	18 (1)	2014
	13 (0)	2013
	17 (2)	2012
	10 (0)	2011
	12 (2)	2010
	12 (3)	2009
	5 (1)	2008*
1.5.1 (Number of people affected by disaster (number))	13 (0)	2016
	6 (0)	2015
	13 (1)	2014
	7 (1)	2013
	5 (1)	2012
	3 (1)	2011
	5 (1)	2010
	2 (1)	2009
1.5.1 (Number of deaths due to disaster (number))	15 (1)	2016
	9 (0)	2015
	11 (1)	2014
	7 (1)	2013
	3 (1)	2012
	6 (1)	2011
	5 (1)	2010
	1 (1)	2009

1.5.1 (Number of missing persons due to disaster (number))	9 (0)	2016
	7 (0)	2015
	5 (0)	2014
	4 (0)	2013
	5 (0)	2012
	3 (2)	2011
	7 (2)	2010
	4 (2)	2009
1.5.1 (Number damaged dwellings attributed to disasters (number)) and (Number destroyed dwellings attributed to disasters (number))	6 (0)	2016
	14 (0)	2015
	24 (3)	2014
	10 (2)	2013
	4 (1)	2012
	4 (0)	2011
	4 (1)	2010
	3 (1)	2009
1.5.2 (Direct economic loss attributed to disasters (millions of current United States dollars))	9 (0)	2016
	8 (0)	2015
	14 (1)	2014
	7 (2)	2013
	3 (0)	2012
	6 (2)	2011
	3 (1)	2010
	2 (1)	2009

1.a.2 (Proportion of total government spending on essential services, education)	39 (4)	2016
	34 (2)	2015
	48 (1)	2014
	18 (1)	2013
	5 (0)	2012
	7 (0)	2011
	6 (1)	2010
	7 (3)	2009
	6 (4)	2008*

* Exceptionally, to meet the criteria of having half of the Arab population covered, data substitution includes data from 2008.

This leaves us with 11 integral indicators/subindicators with which we can assess the position of the region on the 2030 Agenda, as noted in box 1.1.

Box 1.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 1.1.1 – 1 series out of 2 – Proportion of population below the international poverty line of US$1.90
- Indicator 1.2.1 – Proportion of population living below the national poverty line
- Indicator 1.3.1 – 2 series out of 15 – Proportion of population covered by social assistance programmes (Total), and Poorest quintile covered by social assistance programmes
- Indicator 1.5.1 – 5 series out of 189 – Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
- Indicator 1.5.2 – 1 series out of 132 – Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters
- Indicator 1.a.2 – Proportion of total government spending on essential services, education

However, we lose the ability to determine the region's position two targets, as noted in box 1.2, and their indicators and subindicators. Table 1.3 contains a summary of targets, indicators, tiers and data availability in Arab countries for SDG 1.

Annex 1.2 for a graph of country level data values for each of the series/indicator for the years whose data points were used for every included country.

Box 1.2	**Summary list of omitted targets**

- 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
- 1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions

The two preserved series under 1.3.1 are the “Poorest quintile covered by social assistance programmes” and the “Proportion of population covered by social assistance programmes” which includes the former. Therefore, we express the former as a share of the total population (i.e. we multiply it by 0.2) and then we analyse and evaluate the two series in a stacked bar chart where the latter series includes the former, knowing that they are on the same scale, range and unit.

United Nations Statistics Division metadata on 1.5.1 recommends calculations of the indicator as a simple summation of related indicators (deaths, missing people and affected people) from national disaster loss databases divided by the global population data and expressed per 100,000 people, which would cause us to loose half of the available observations. Thus, we report on all three people-related series in 1.5.1 separately and express them per 100,000 of the national population, while for the two dwellings-related series, where the availability of data for all Arab countries is the same for both, we add them together and form a sum.

Indicator 1.5.2 is very similar to 11.5.2, as it measures the direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters. In fact, this indicator is composed of 16 different subindicators, two of which have disaggregation by an extensive number of “hazard type” categories (59 categories; making a total of 132 series under 1.5.2) but is yet incomplete when looking consistently across countries/territories. Therefore, we drop these two disaggregated subindicators, noting that this does not entail any loss of informational value since each one has a sister subindicator that measures exactly the same dimension but without being disaggregated. This leaves us with 14 subindicators with no disaggregation. According to the United Nations Statistics Division metadata and especially the computation method it presents, 12 of the 14 subindicators are included (thematically) in the remaining two subindicators, namely: “Direct economic loss attributed to disasters (millions of current United States dollars)” and “Direct economic loss attributed to disasters relative to GDP (percentage)”. As these two latter subindicators mean the same, are as inclusive and have the same data availability but are just expressed differently, whereby the second one is expressed relative to global GDP and not to domestic GDP (which does not make it more indicative). We only keep the first subindicator, “Direct economic loss attributed to disasters (millions of current United States dollars)”.

The global, regional, and subregional aggregates of two series of 1.5.1 and 1.5.2 are calculated using a total sum, whereas the aggregate of 1.a.2 is calculated using a simple arithmetic mean. Because national poverty lines in 1.2.1 are country-specific, there is no aggregation at the regional or global level (United Nations Statistics Division metadata). The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the properties of the weighting variables are all chosen based on what is advised by the corresponding United Nations Statistics Division metadata or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator or the latest available year. The following weight was used for the series/indicators whose global, regional and subregional aggregates are weighted averages: Total population in 2015 (from the World Population Prospects). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We calculate the world, regional and subregional averages under each target and include the target value – when available – to facilitate comparability. For 1.1.1, which aims to “eradicate extreme poverty for all people everywhere … by 2030”, we consider the target value as zero proportion of population below the international poverty line of US$1.90. For 1.3.1, which measures the coverage of the population by social assistance programmes and aims to “Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable”, the target value is set as 100 per cent (i.e. coverage for everyone). However, for 1.5.1, 1.5.2 and 1.a, it is not possible to infer the official desired target value and thus it is not shown.

Table 1.3 Targets, indicators, tiers and data availability for Arab countries – SDG 1 (End poverty in all its forms everywhere)

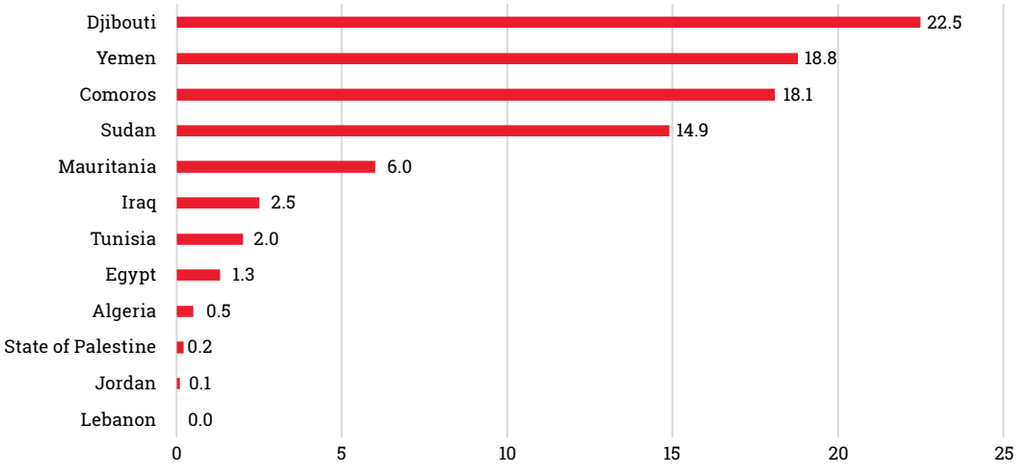
Target	Indicator	Number of subindicators	Tier	Data availability*
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)	1 chosen out of 2	Tier I	12
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	1.2.1 Proportion of population living below the national poverty line, by sex and age	1 chosen out of 1	Tier I	12
	1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	(No data)	Tier II	x
1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	1.3.1 Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable	2 chosen out of 15	Tier II	9
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1.4.1 Proportion of population living in households with access to basic services	(No data)	Tier III	x
	1.4.2 Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure	(No data)	Tier II	x

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	1.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	5 chosen out of 189**	Tier II	12, 11, 6, 12, 12
	1.5.2 Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)	1 chosen out of 132***	Tier II	12
	1.5.3 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030	(Dropped) 2	Tier I	x
	1.5.4 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	(Dropped) 3	Tier II	x
1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	1.a.1 Proportion of domestically generated resources allocated by the government directly to poverty reduction programmes	(No data)	Tier III	x
	1.a.2 Proportion of total government spending on essential services (education, health and social protection)	1 chosen out of 1	Tier II	16
	1.a.3 Sum of total grants and non-debt-creating inflows directly allocated to poverty reduction programmes as a proportion of GDP	(No data)	Tier III	x
1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	1.b.1 Proportion of government recurrent and capital spending to sectors that disproportionately benefit women, the poor and vulnerable groups	(No data)	Tier III	x

* Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
** For indicator 1.5.1, there exist 15 main series, three of which have disaggregation by hazard type (consisting of 59 different categories). Therefore, the total number of series for this indicator is 189, out of which we choose to keep only five series.
*** For indicator 1.5.2, there exist 16 main series, two of which have disaggregation by hazard type (consisting of 59 different categories). Therefore, the total number of series for this indicator is 132, out of which we choose to keep only one series.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

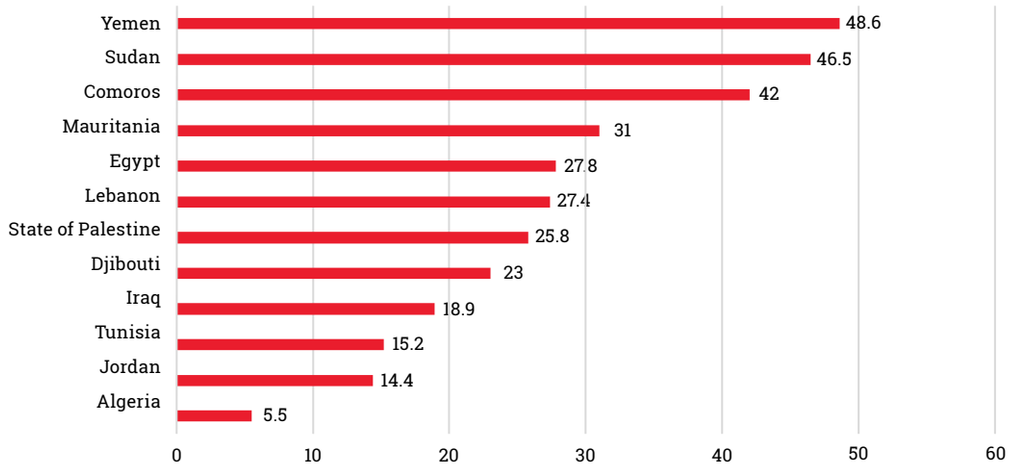
2. Country graphs

Figure 1.1 Indicator 1.1.1 - Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)
Proportion of population below international poverty line (percentage)



Note: Data are from various years as follows: Sudan (2009); Tunisia and Jordan (2010); Algeria, Lebanon and State of Palestine (2011); Iraq (2012); Comoros and Djibuti (2013); Mauritania and Yemen (2014); Egypt (2015).

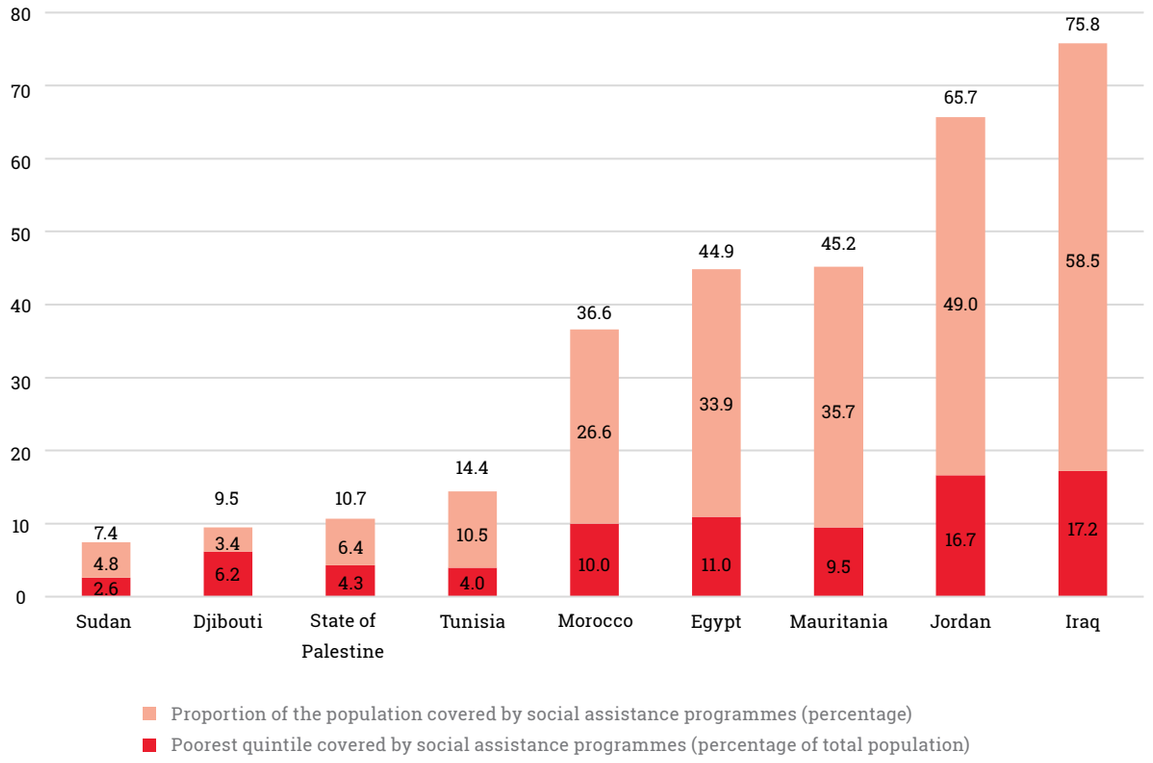
Figure 1.2 Indicator 1.2.1 - Proportion of population living below the national poverty line, by sex and age
Proportion of population living below the national poverty line (percentage)



Note: Data are from various years as follows: Sudan (2009); Jordan (2010); Algeria and State of Palestine (2011); Iraq and Lebanon (2012); Djibuti (2013); Comoros, Mauritania and Yemen (2014); Egypt and Tunisia (2015).

Figure 1.3 Indicator 1.3.1 - Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable

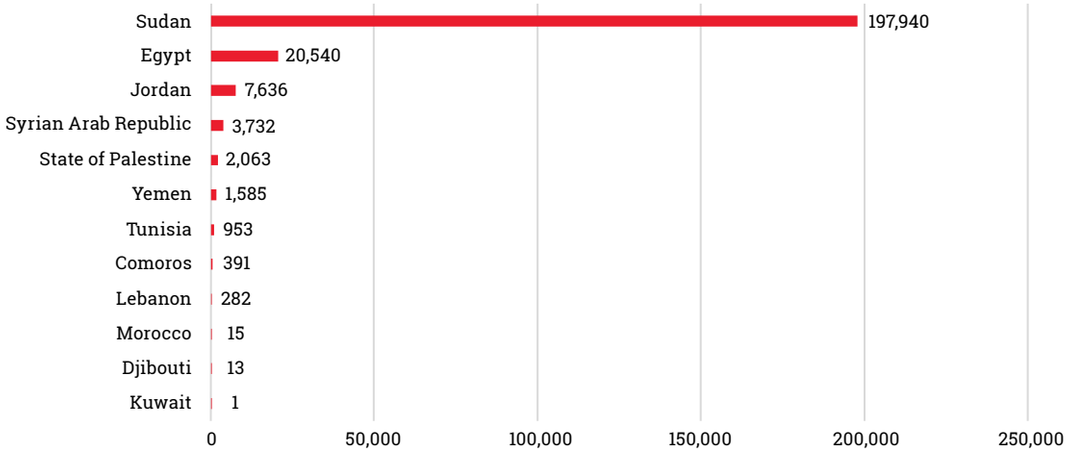
Proportion of population covered by social assistance programmes (percentage) and Poorest quintile covered by social assistance programmes (percentage of population)



Note: Data are from various years as follows: Egypt (2008); Morocco, State of Palestine and Sudan (2009); Jordan and Tunisia (2010); Djibouti and Iraq (2012); Mauritania (2014).

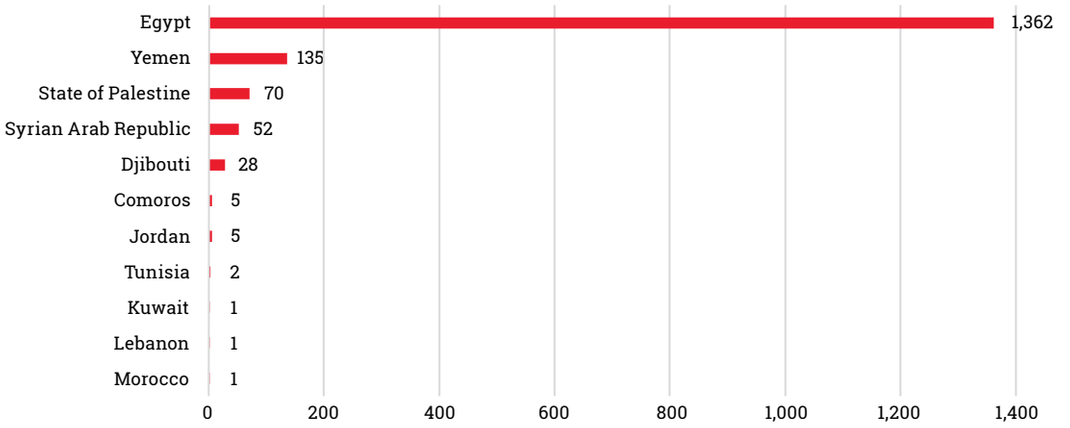
Figure 1.4 Five series of indicator 1.5.1 - Number of deaths, missing persons and persons affected by disaster per 100,000 population

Number of people affected by disaster (number)



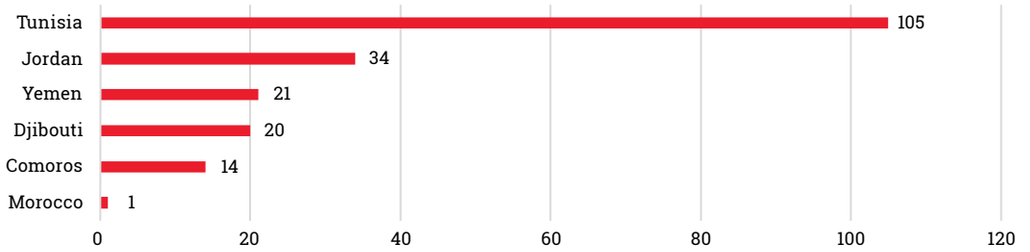
Note: Data are for 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013) and Morocco (2014).

Number of deaths due to disaster (number)



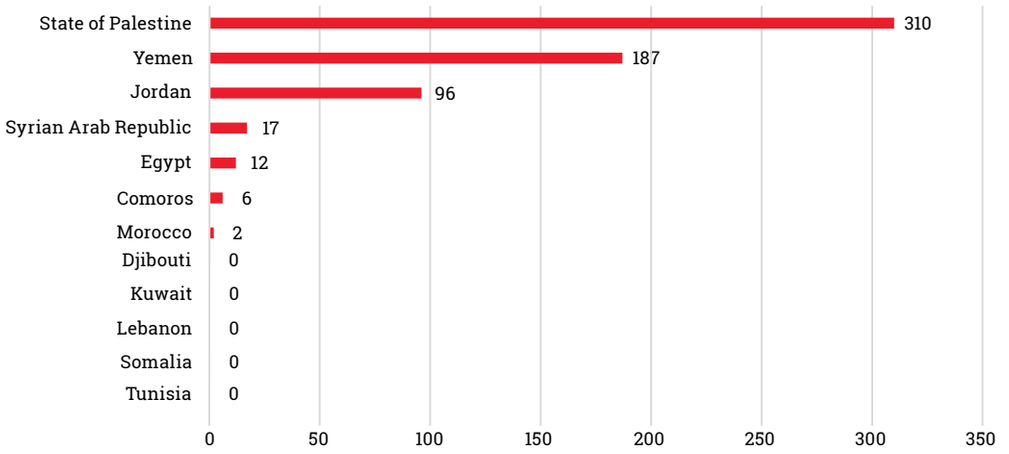
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013), Morocco (2014) and Lebanon (2016).

Number of missing persons due to disaster (number)



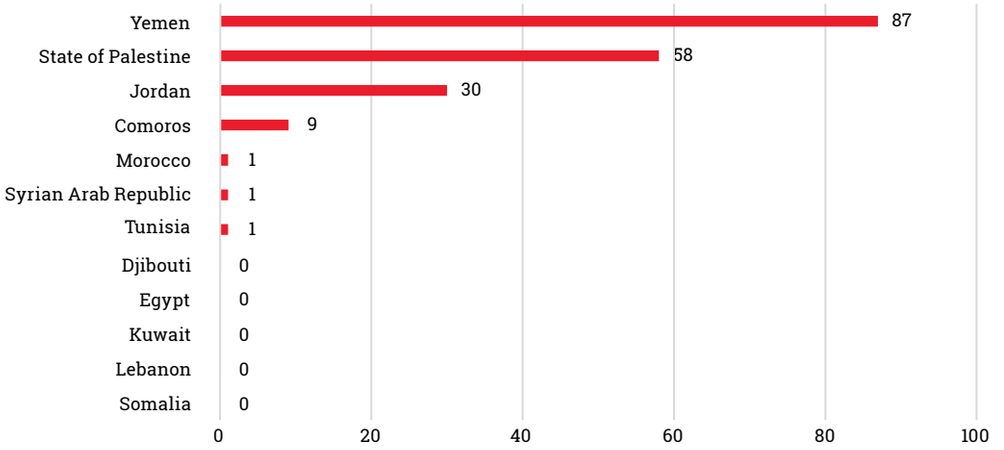
Note: Data are from various years as follows: Tunisia (2009); Jordan and Yemen (2010); Djibouti and Morocco (2011); Comoros (2017).

Number damaged dwellings attributed to disasters (number)



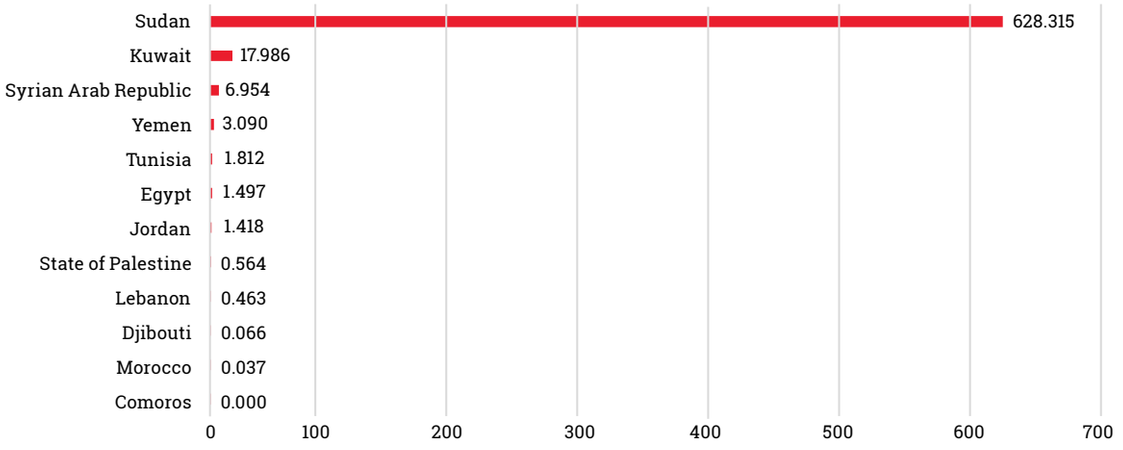
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti (2012), State of Palestine and Tunisia (2013), Comoros, Lebanon and Morocco (2014).

Number destroyed dwellings attributed to disasters (number)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti (2012), State of Palestine and Tunisia (2013), Comoros, Lebanon and Morocco (2014).

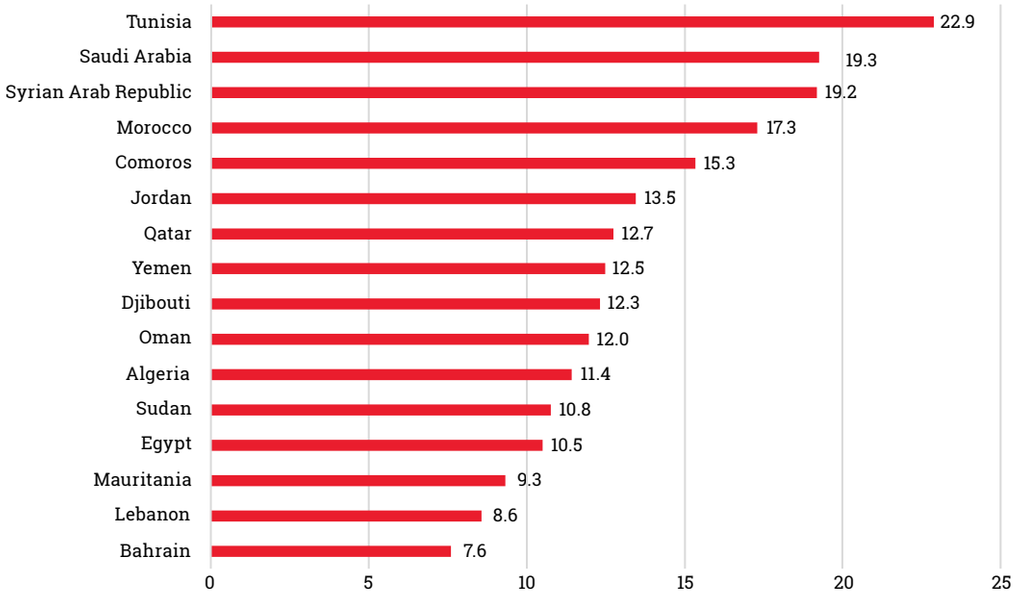
Figure 1.5 Indicator 1.5.2 - Direct disaster economic loss in relation to global gross domestic product (GDP)
Direct economic loss attributed to disasters (millions of current United States dollars)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti and Kuwait (2011), Comoros and Tunisia (2013), Morocco (2014).

Figure 1.6 Indicator 1.a.2 - Proportion of total government spending on essential services (education, health and social protection)

Proportion of total government spending on essential services, education (percentage)



Note: Data are from various years as follows: Algeria, Egypt, Saudi Arabia and Yemen (2008); Morocco, Sudan and Syrian Arab Republic (2009); Djibouti (2010); Lebanon (2013); Qatar (2014); Comoros and Tunisia (2015); Bahrain, Jordan, Mauritania and Oman (2016).

Annex to chapter 2

1. Data for SDG 2

SDG 2 comprises eight targets and a total of 13 indicators (five of which contain multiple subindicators). Of these indicators, seven are tier I, three are tier II, and three are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of 10 indicators: 2.1.1 - Prevalence of undernourishment; 2.1.2 - Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES); 2.2.1 - Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age; 2.2.2 - Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight); 2.5.1 - Number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities; 2.5.2 - Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction; 2.a.1 - The agriculture orientation index for government expenditures; 2.a.2 - Total official flows (official development assistance plus other official flows) to the agriculture sector; 2.b.1 - Agricultural export subsidies; and 2.c.1 - Indicator of food price anomalies.

None of the provided datasets includes sex disaggregated data.

The data used in the analysis of SDG 2 was downloaded on 24 August 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 2.1.1 (Prevalence of undernourishment (percentage)), and the data series of 2.a.2 (Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2016 United States dollars)) are replaced with amended data, while the data series 2.5.1 is changed from “Number of local breeds kept in the country” to "Plant breeds for which sufficient genetic resources are stored (number)", thus, all the three series are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 2.1.2, 2.5.2, 2.b.1, and 2.c.1. When there are many subindicators that mean the same but are expressed differently (like in the case of the two series under indicator 2.2.1, and the two pairs of series under indicator 2.2.2), we choose the one that is more representative, easier to interpret and has more data availability. This leads us to omit one of the two series of 2.2.1, keeping “Proportion of children moderately or severely stunted (percentage)”; and two of the four series of 2.2.2, keeping “Proportion of children moderately or severely overweight (percentage)” and “Proportion of children moderately or severely wasted (percentage)”.

In fact, 2.5.2 is composed of six subindicators that make three pairs, where each pair contains a subindicator that measures a certain local breeds’ extinction risk level (at risk, not at risk, or unknown) as an absolute number (number of breeds exposed to this level) and another subindicator that measures the same but as a proportion. The sum of the three series that are expressed as proportions gives 100 per cent per observation and per year, for all observations. Moreover, 127 countries out of the total of 183 covered observations, including all of the 18 covered Arab countries, have a value of 100 per cent for the proportion of local breeds classified as being at an “unknown level of risk of extinction”, which is equivalent to a missing value as it hinders the evaluation of the local breeds’ extinction risk level. This is the reason why this indicator is dropped based on the criterion of having insufficient data availability.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 2.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 2.1 **Data substitution scheme for selected indicators and subindicators**

Indicator or subindicator	Number of substituted data points (Arab)	Year
2.1.1 (Prevalence of undernourishment)	165 (5)	2016
2.2.1 (Proportion of children moderately or severely stunted)	20 (0)	2016
	18 (2)	2015
	23 (4)	2014
	17 (1)	2013
	19 (5)	2012
	9 (2)	2011
	9 (0)	2010
	8 (2)	2009
2.2.2 (Proportion of children moderately or severely overweight)	18 (0)	2016
	18 (2)	2015
	23 (4)	2014
	16 (1)	2013
	20 (5)	2012
	8 (2)	2011
	10 (0)	2010
	7 (2)	2009
2.2.2 (Proportion of children moderately or severely wasted)	20	2016
	18 (2)	2015
	23 (4)	2014
	17 (1)	2013
	19 (5)	2012
	9 (2)	2011
	9 (0)	2010
	7 (2)	2009

2.a.1 (Agriculture orientation index for government expenditures)	50 (2)	2016
	46 (3)	2015
	7 (1)	2014
	6 (0)	2013
	7 (2)	2012
	5 (1)	2011
	3 (0)	2010
	5 (2)	2009
2.a.2 (Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2017 United States dollars))	2 (1)	2016
	5 (1)	2010

For 2.5.1 (Plant breeds for which sufficient genetic resources are stored (number)), no data needed to be substituted.

This leaves us with seven integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 2.1.

Box 2.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 2.1.1 – Prevalence of undernourishment
- Indicator 2.2.1 – 1 series out of 2 - Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age
- Indicator 2.2.2 – 2 series out of 4 - Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)
- Indicator 2.5.1 – Plant breeds for which sufficient genetic resources are stored (number)
- Indicator 2.a.1 – The agriculture orientation index for government expenditures
- Indicator 2.a.2 – Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2017 United States dollars)

However, we lose the ability to determine the region's position on the rest of the targets, indicators, and subindicators as noted in box 2.2, including those that exist in table 2.2 on targets, indicators, tiers and data availability in Arab countries for SDG 2, but that do not have sufficient data.

Box 2.2	**Summary list of omitted targets**

- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
- 2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

We note that, for 2.1.1, the data set provided by the United Nations Statistics Division contains data points such as "<2.5", indicating a value that is lower than 2.5. Thus, we replace these data points by 2.5 which then represents the floor of the corresponding values of the series. We also note that indicators 2.2.1 and 2.2.2 only address children that are under 5 years of age. Additionally, we note that, for indicator 2.a.2, the main data set provided by the United Nations Statistics Division only includes recipient countries and omits the donor countries that then, by the nature of construction of a full matrix consisting of all countries in the world, take missing values, which are de facto zeroes. Hence, 22 instead of 17 Arab countries become covered by data.

Annex 2.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of series 2.5.1, and 2.a.2 are calculated as regional sums, while 2.a.1 is a unweighted mean. The other aggregates are calculated as weighted means. The method of aggregation, in general, is chosen based on what is advised by the corresponding UNSTATS Metadata or by the original source of the corresponding data that is referred to by this Metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables).The following weights were actually used for the series/indicators whose global, regional, and subregional aggregates are weighted averages: Total Population in 2015 (World Population Prospects 2017), and Total population of children 0 to 5 years of age in 2015 (World Population Prospects 2017). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We calculate the world, regional, and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For 2.1 whose aim is to "end hunger and ensure access by all people…to safe, nutritious and sufficient food all year round, by 2030", we consider the target value as 0 percent of prevalence of undernourishment. As for 2.2 whose aim is to "end all forms of malnutrition by 2030, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age…" we consider the target value as 0 per cent of prevalence of stunting and malnutrition (wasting and overweight) among children under 5 years of age. However, for 2.5 and 2.a, it is not possible to infer the official desired target values and thus they are not shown.

Table 2.2 Targets, indicators, tiers and data availability for Arab countries – SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture)

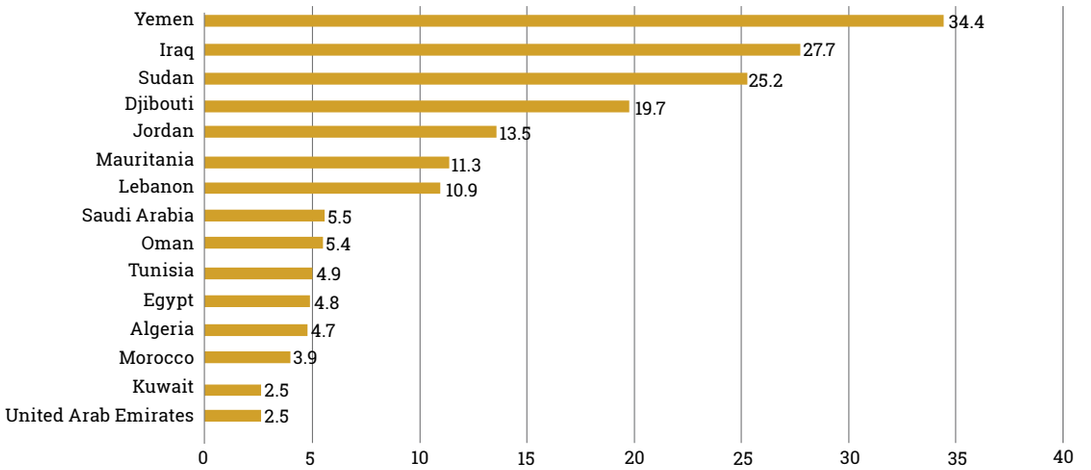
Target	Indicator	Number of subindicators	Tier	Data availability*
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	2.1.1 Prevalence of undernourishment	1 chosen out of 1	Tier I	15
	2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)	(Dropped) 4	Tier II	x
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	2.2.1 Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age	1 chosen out of 2	Tier I	16
	2.2.2 Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)	2 chosen out of 4	Tier I	16
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	2.3.1 Volume of production per labour unit by classes of farming/ pastoral/forestry enterprise size	(No data)	Tier III	x
	2.3.2 Average income of small-scale food producers, by sex and indigenous status	(No data)	Tier III	x
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	2.4.1 Proportion of agricultural area under productive and sustainable agriculture	(No data)	Tier III	x

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities	1 chosen out of 1	Tier I	8
	2.5.2 Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction	(Dropped) 6	Tier I	x
2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	2.a.1 The agriculture orientation index for government expenditures	1 chosen out of 1	Tier II	11
	2.a.2 Total official flows (official development assistance plus other official flows) to the agriculture sector	1 chosen out of 1	Tier I	17
2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	2.b.1 Agricultural export subsidies	(Dropped) 1	Tier I	x
2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	2.c.1 Indicator of food price anomalies	(Dropped) 5	Tier II	x

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

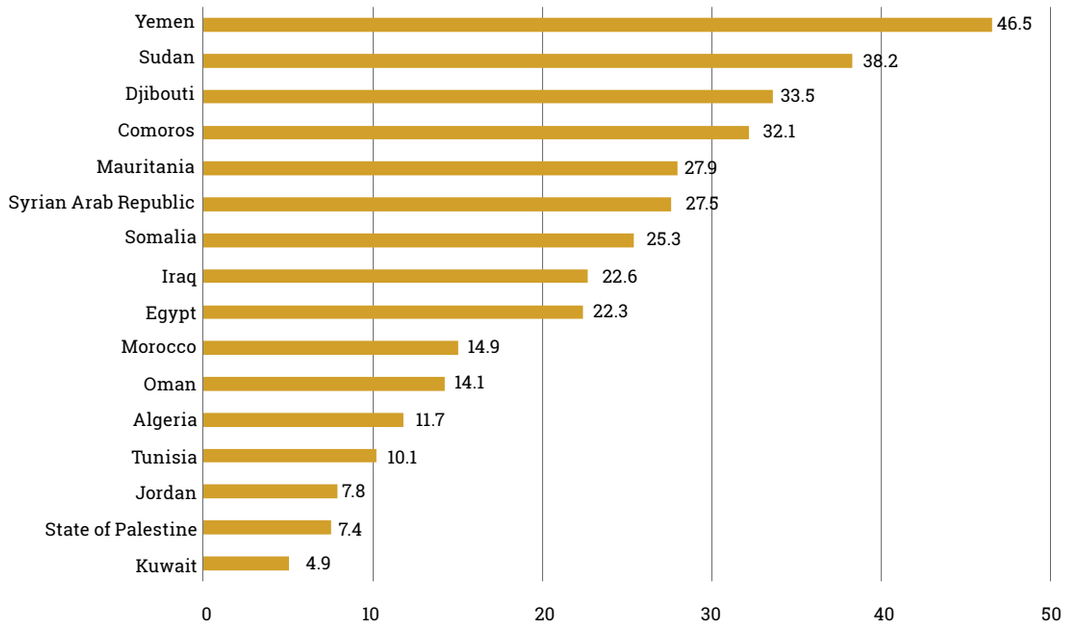
2. Country graphs

Figure 2.1 Indicator 2.1.1 - Prevalence of undernourishment
Prevalence of undernourishment (percentage)



Note: All data are for 2016.

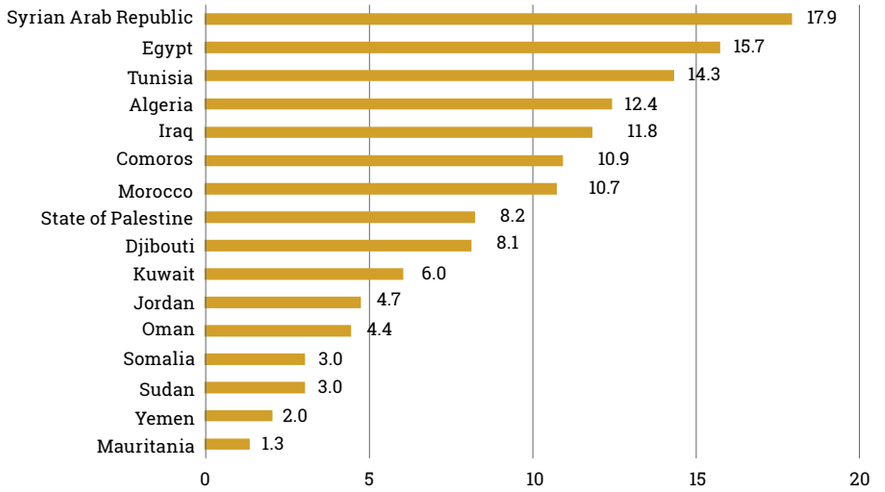
Figure 2.2 Indicator 2.2.1 - Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age
Proportion of children moderately or severely stunted (percentage)



Note: Data are from the following years: Somalia and Syrian Arab Republic (2009); Iraq and Morocco (2011); Algeria, Comoros, Djibouti, Jordan and Tunisia (2012); Yemen (2013); Egypt, Oman, State of Palestine and Sudan (2014); Kuwait and Mauritania (2015).

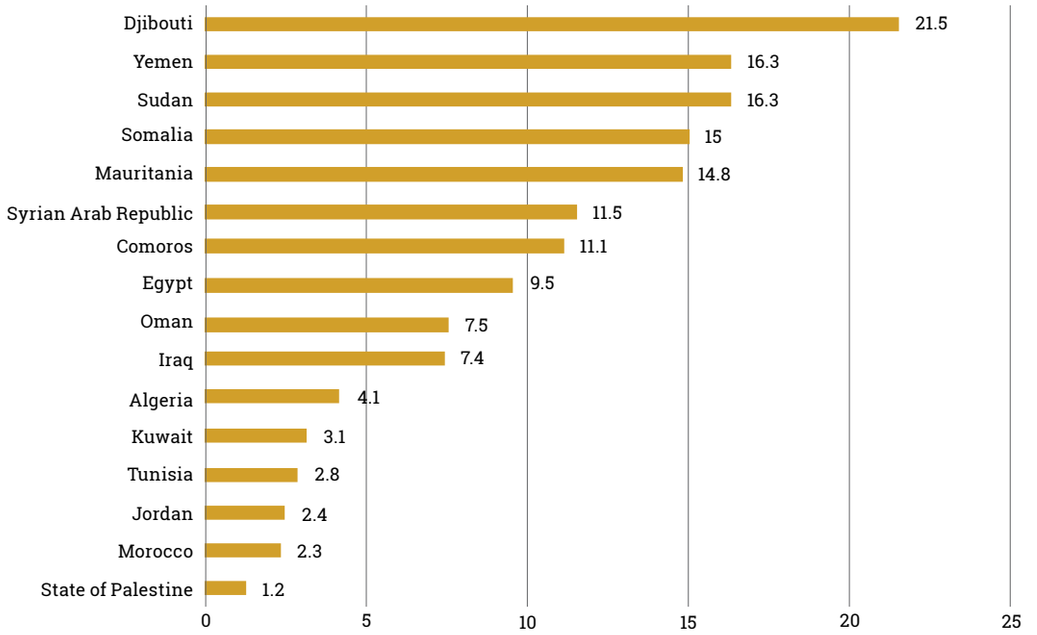
Figure 2.3 Two series of Indicator 2.2.2 - Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)

Proportion of children moderately or severely overweight (percentage)



Note: All data are from 2017.

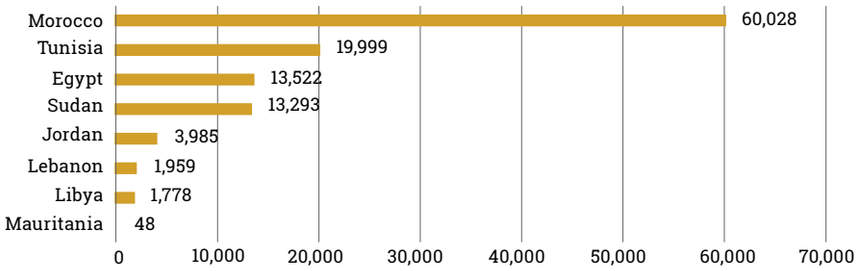
Proportion of children moderately or severely wasted (percentage)



Note: Data for indicator 2.2.2 are from the following years: Somalia and Syrian Arab Republic (2009); Iraq and Morocco (2011); Algeria, Comoros, Djibouti, Jordan and Tunisia (2012); Yemen (2013); Egypt, Oman, State of Palestine and Sudan (2014); Kuwait and Mauritania (2015).

Figure 2.4 Indicator 2.5.1 - Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities

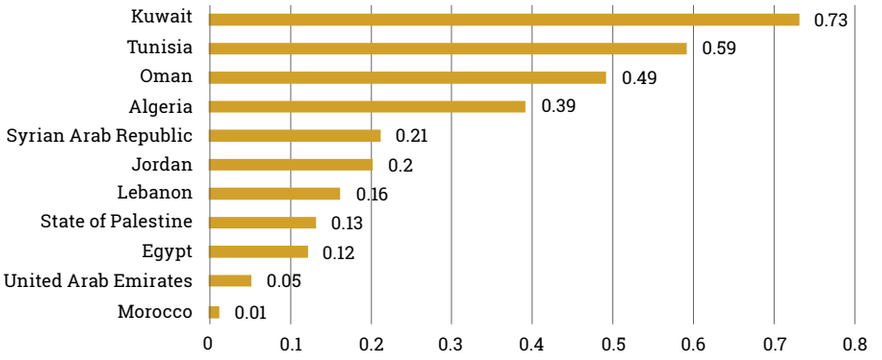
Plant breeds for which sufficient genetic resources are stored (number)



Note: All data are from 2017.

Figure 2.5 Indicator 2.a.1 - The agriculture orientation index for government expenditures

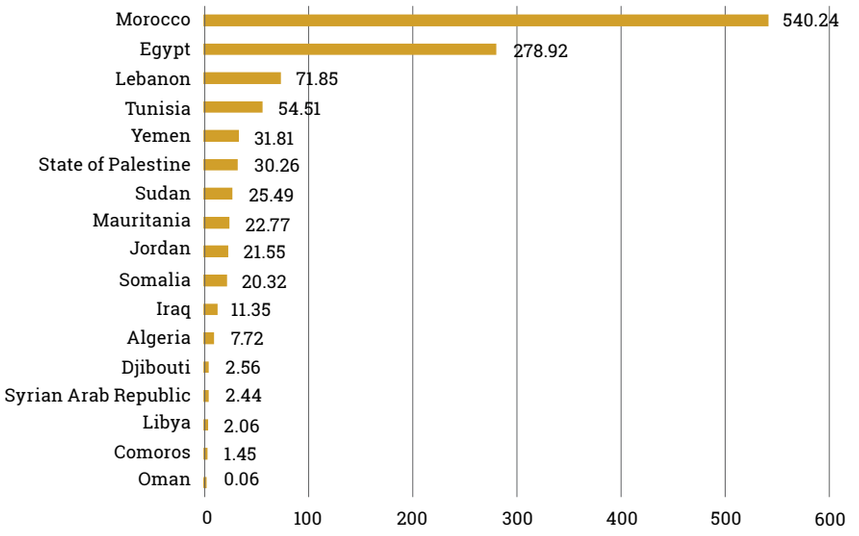
Agriculture Orientation Index (AOI) for government expenditures (no unit)



Note: Data are from the following years: Algeria and Syrian Arab Republic (2009); State of Palestine (2011); Morocco and Tunisia (2012); Oman (2014); Jordan, Kuwait and United Arab Emirates (2015); Egypt and Lebanon (2016).

Figure 2.6 Indicator 2.a.2 - Total official flows (official development assistance plus other official flows) to the agriculture sector

Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2017 United States dollars)



Note: Data are for 2017 apart from Oman (2010) and Libya (2016).

Annex to chapter 3

1. Data for SDG 3

SDG 3 comprises 13 targets and a total of 27 indicators (10 of which contain multiple subindicators). Of these indicators, 20 are tier I, five are tier II, and two are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of 25 indicators: 3.1.1 - Maternal mortality ratio; 3.1.2 - Proportion of births attended by skilled health personnel; 3.2.1 - Under-5 mortality rate; 3.2.2 - Neonatal mortality rate; 3.3.1 - Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations; 3.3.2 - Tuberculosis incidence per 100,000 population; 3.3.3 - Malaria incidence per 1,000 population; 3.3.4 - Hepatitis B incidence per 100,000 population; 3.3.5 - Number of people requiring interventions against neglected tropical diseases; 3.4.1 - Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease; 3.4.2 - Suicide mortality rate; 3.5.2 - Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol; 3.6.1 - Death rate due to road traffic injuries; 3.7.1 - Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods; 3.7.2 - Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1,000 women in that age group; 3.8.1 - Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population); 3.8.2 - Proportion of population with large household expenditures on health as a share of total household expenditure or income; 3.9.1 - Mortality rate attributed to household and ambient air pollution; 3.9.2- Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services); 3.9.3 - Mortality rate attributed to unintentional poisoning; 3.a.1 - Age-standardized prevalence of current tobacco use among persons aged 15 years and older; 3.b.1- Proportion of the target population covered by all vaccines included in their national programme; 3.b.2 - Total net official development assistance to medical research and basic health sectors; 3.c.1 - Health worker density and distribution; and 3.d.1 - International Health Regulations (IHR) capacity and health emergency preparedness.

The data used in the analysis of SDG 3 was downloaded on 21 October 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 3.3.1 (Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations), 3.3.3 (Malaria incidence per 1,000 population), and 3.3.5 (Number of people requiring interventions against neglected tropical diseases) are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicator 3.8.2. When there are many subindicators that mean the same but are expressed differently (like in the case of the two pairs of series under 3.2.1, the two series under 3.2.2, the two subindicators under 3.4.1, the two series under 3.4.2, the three pairs of series under 3.9.1, the two series under 3.b.2, and the two subindicators under 3.d.1), we choose the subindicators that are more representative and easier to interpret, and that have greater data availability. This leads us to keep two of the four series of 3.2.1, “Infant mortality rate (deaths per 1,000 live births)” and “Under-5 mortality rate, by sex (deaths per 1,000 live births)”; one series of 3.2.2, “Neonatal mortality rate (deaths per 1,000 live births)”; one subindicators of 3.4.1, “Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease (probability, in percentage)”; one series of 3.4.2, “Suicide mortality rate, by sex (deaths per 100,000 population)”; five series of 3.9.1, “Age-standardized mortality rate attributed to household and ambient air pollution (deaths per 100,000 population)”; one series of 3.b.2, “Total official development assistance to medical research and basic health sectors (net disbursement), by recipient countries (millions of constant 2016 United States dollars)”; and one series of 3.d.1, “Average of 13 International Health Regulations (IHR) core capacities”.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering data spanning 2009–2017. Table 3.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 3.1 **Data substitution scheme for selected indicators and subindicators**

Indicator or subindicator	Number of substituted data points (Arab)	Year
3.1.1 (Maternal mortality ratio)	183 (22)	2015
3.1.2 (Proportion of births attended by skilled health personnel (percentage))	46 (0)	2016
	46 (5)	2015
	40 (4)	2014
	14 (3)	2013
	14 (6)	2012
	6 (1)	2011
	4 (0)	2010
	6 (1)	2009
3.3.1 (Number of new HIV infections per 1,000 uninfected population, by sex and age)	1 (0)	2015
3.3.2 (Tuberculosis incidence (per 100,000 population))	217 (22)	2015
3.3.4 (Prevalence of Hepatitis B surface antigen (HBsAg) (percentage))	194 (21)	2015
3.4.1 (Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease (probability)) 3.4.2 (Suicide mortality rate, by sex (deaths per 100,000 population))	183 (21)	2016
3.5.2 (Alcohol consumption per capita (aged 15 years and older) within a calendar year)	189 (21)	2016
3.6.1 (Death rate due to road traffic injuries (per 100,000 population))	196 (22)	2013
3.7.1 (Proportion of women married or in a union of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods (percentage))	20 (0)	2016
	11 (1)	2015
	24 (4)	2014
	13 (2)	2013
	18 (4)	2012
	10 (2)	2011
	5 (0)	2010
	6 (1)	2009

3.7.2 (Adolescent birth rate (per 1,000 women aged 15–19 years))	27 (1)	2016
	58 (2)	2015
	34 (2)	2014
	19 (3)	2013
	15 (2)	2012
	22 (5)	2011
	11 (1)	2010
	7 (3)	2009
3.8.1 (Universal health coverage (UHC) service coverage index)	183 (21)	2015
3.9.1 (Age-standardized mortality rate attributed to household and ambient air pollution (deaths per 100,000 population))	183 (21)	2016
3.9.2 (Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (deaths per 100,000 population)) 3.9.3 (Mortality rate attributed to unintentional poisonings, by sex (deaths per 100,000 population))	183 (21)	2016
3.a.1 (Age-standardized prevalence of current tobacco use among persons aged 15 years and older, by sex (percentage))	146 (14)	2015
3.b.1 (Proportion of the target population with access to 3 doses of diphtheria-tetanus-pertussis (DTP3) (percentage))	195 (22)	2016
3.b.1 (Proportion of the target population with access to measles-containing-vaccine second-dose (MCV2) (percentage))	161 (19)	2016
3.b.1 (Proportion of the target population with access to pneumococcal conjugate third dose (PCV3) (percentage))	130 (14)	2016
3.b.2 (Total official development assistance to medical research and basic health sectors (net disbursement), by recipient countries (millions of constant 2016 United States dollars))	141 (16)	2016
	2 (0)	2015
	1 (0)	2014
	1 (0)	2013
	4 (0)	2010

3.c.1 (Health worker density per 1,000 population, for Dentists)	17 (1)	2017
	42 (3)	2015
	42 (11)	2014
	7 (0)	2013
	8 (0)	2012
	8 (0)	2011
	10 (1)	2010
	13 (1)	2009
3.c.1 (Health worker density per 1,000 population, for Nurses)	20 (2)	2016
	47 (3)	2015
	46 (13)	2014
	11 (0)	2013
	9 (0)	2012
	8 (0)	2011
	8 (0)	2010
	13 (1)	2009
3.c.1 (Health worker density per 1,000 population, for pharmacists)	20 (1)	2016
	43 (2)	2015
	37 (11)	2014
	9 (0)	2013
	8 (0)	2012
	10 (0)	2011
	7 (1)	2010
	13 (2)	2009

3.c.1 (Health worker density per 1,000 population, for physicians)	21 (1)	2016
	42 (4)	2015
	48 (12)	2014
	12 (0)	2013
	10 (0)	2012
	7 (0)	2011
	9 (0)	2010
	16 (1)	2009
3.d.1 (Average of 13 International Health Regulations (IHR) core capacities (percentage))	11 (0)	2016
	5 (0)	2015
	10 (0)	2014
	1 (0)	2013
	1 (0)	2012
	1 (0)	2011
	1 (0)	2010

For each of the two preserved series under 3.2.1 and the only preserved series under 3.2.2 (Infant mortality rate, Under-5 mortality rate and Neonatal mortality rate, deaths per 1,000 live births), as well as for 3.3.3 and 3.3.5, no substitution was made as data are complete or nearly complete for our base year (2017) and thus it is not possible to substitute data for any observation within the considered time interval (2009–2017).

Each of 3.1.1, 3.3.2 and 3.3.4 is disaggregated by "value type" based on the uncertainty bounds of the estimates and, thus, we only use their "mid-point" values which make the averages of the upper and lower boundaries. For 3.1.2, we note that all "NA" values are replaced by missing points. As indicated by their titles, 3.7.1 (Proportion of women married or in a union of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods (percentage)) only covers females aged 15–49 while 3.7.2 (Adolescent birth rate (per 1,000 women aged 15–19 years)) only covers females aged 15–19. Indicator 3.3.1 is disaggregated by age group into three categories (above 15 years, between 15 and 49 years, and below 15 years) and the fourth category (ALLAGE) is the aggregate of the other three and is the only category that we preserve. We also note that 3.3.4 only covers individuals who are below 5 years of age.

For 3.4.1, we keep and evaluate one subindicator (Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease (probability)) because it is expressed as a rate (percentage) and is thus more representative and indicative than the other subindicator which is expressed as an absolute number, and also because the other subindicator is disaggregated by the type of non-communicable disease whereby there are four disaggregation categories (cardiovascular disease, cancer, diabetes, and chronic respiratory disease) and there is no series that aggregates them. We do not prefer to create our own aggregate of the four series as we preserve the aggregated subindicator expressed as a rate (percentage). The age group covered by 3.4.1 is 30–70 years old.

Indicator 3.c.1, representing the health worker density per 1,000 population, is disaggregated by type of occupation (Dentists, Nurses, Pharmacists and Physicians), and there is no series that aggregates them all. Therefore, we visualize and analyse the four series of this indicator separately but in the same chart. There

are six series of 3.9.1 or three pairs of subindicators presenting age-standardized mortality rates and crude mortality rates. We choose to keep and evaluate the former subindicator as it is a more accurate measure of the mortality rates in question since "age-adjusted rates ensure that differences in incidence or deaths from one year to another, or between one geographic area and another, are not due to differences in the age distribution of the populations being compared", according to the Center for Disease Control and Prevention. Then, among the three series that present age-standardized mortality rates, we only preserve the age-standardized mortality rate attributed to household and ambient air pollution (deaths per 100,000 population) since it combines the two factors that are featured by the other two remaining series separately: household air pollution and ambient air pollution. However, we note that 3.9.2 and 3.9.3 are formed of a single series each, representing mortality rates that are not age-standardized. For 3.9.1, we replace all "NA" values by missing points.

Indicator 3.2.1 includes two subindicators (Infant mortality rate, deaths per 1,000 live births and Under-5 mortality rate, deaths per 1,000 live births). The infant mortality rate addresses children that are under 1 year of age while the under-5 mortality rate addresses children that are under 5 years of age. Since the under-5 mortality rate includes the infant mortality rate, we visualize and analyse these two series using a stacked bar chart where one includes the other since they measure different faces and intensities of the preventable child mortality problem which are worth evaluating separately, knowing that they are also on the same scale, range and unit. The stacked bar chart is constructed accordingly, where the full bars eventually correspond to the weighted averages of the under-5 mortality rate as it is the broadest measure.

Concerning indicator 3.b.2, we choose to keep and analyse the series on "total official development assistance to medical research and basic health sectors" that represents net disbursements and not gross disbursements since net ODA fits more with the official definition of target 3.b and since, according to OECD, "when calculating net ODA, loan repayments are recorded as negative and deducted from ODA and loans". We note that, also according to the OECD, "in some cases, loan repayments are higher than new ODA and net ODA will show as a negative number". We also note that the data set provided by the United Nations Statistics Division for the preserved series of this indicator only includes recipient countries/territories and omits the donor countries/territories that then take missing values which are considered as zeros when the regional and global aggregates of the series are calculated using a total sum. Hence, we consider that 22 instead of 16 Arab countries become covered by data for this indicator, knowing that the six GCC countries are donor countries whose missing data values in the original data set are equivalent to zeros.

Indicator 3.b.1 includes three series: Proportion of the target population with access to three doses of diphtheria-tetanus-pertussis (DTP3) (percentage), Proportion of the target population with access to measles-containing-vaccine second-dose (MCV2) (percentage), and Proportion of the target population with access to pneumococcal conjugate third dose (PCV3) (percentage), which are at the same range, scale, and unit. Therefore, we visualize and analyse these series separately but in the same bar chart since they also measure the proportion of the targeted population with access to three different types of vaccines.

Finally, we note the following:

- The age group covered by each of the series of 3.5.2 and the series of 3.a.1 is above 15 years of age.
- For 3.8.1, all values that are provided as ">=80" in the original data set are replaced by "80", meaning that the data series for this indicator is capped to 80.
- For 3.d.1, we choose the subindicator representing the "Average of 13 International Health Regulations (IHR) core capacities (percentage)" and omit the other subindicator which is disaggregated by the type of IHR, whereby there are 13 categories and no category that aggregates them all, since we do not prefer to create our own aggregate of the 13 series when there is an already aggregated subindicator.

This leaves us with 25 integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 3.1.

Box 3.1	Summary list of preserved and examined indicators/subindicators

- Indicator 3.1.1 – Maternal mortality ratio
- Indicator 3.1.2 – Proportion of births attended by skilled health personnel
- Indicator 3.2.1 – 2 series out of 4 – Under-5 mortality rate
- Indicator 3.2.2 – 1 series out of 2 – Neonatal mortality rate
- Indicator 3.3.1 – Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations
- Indicator 3.3.2 – Tuberculosis incidence per 100,000 population
- Indicator 3.3.3 – Malaria incidence per 1,000 population
- Indicator 3.3.4 – Hepatitis B incidence per 100,000 population
- Indicator 3.3.5 – Number of people requiring interventions against neglected tropical diseases
- Indicator 3.4.1 – 1 series out of 5 – Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
- Indicator 3.4.2 – 1 series out of 2 – Suicide mortality rate
- Indicator 3.5.2 – Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol
- Indicator 3.6.1 – Death rate due to road traffic injuries
- Indicator 3.7.1 – Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods
- Indicator 3.7.2 – Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1,000 women in that age group
- Indicator 3.8.1 – Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)
- Indicator 3.9.1 – 1 series out of 6 – Mortality rate attributed to household and ambient air pollution
- Indicator 3.9.2 – Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)
- Indicator 3.9.3 – Mortality rate attributed to unintentional poisoning
- Indicator 3.a.1 – Age-standardized prevalence of current tobacco use among persons aged 15 years and older
- Indicator 3.b.1 – Proportion of the target population covered by all vaccines included in their national programme
- Indicator 3.b.2 – 1 series out of 2 – Total net official development assistance to medical research and basic health sectors
- Indicator 3.c.1 – Health worker density and distribution
- Indicator 3.d.1 – 1 series out of 14 – International Health Regulations (IHR) capacity and health emergency preparedness

However, we lose the ability to determine the region's position on the rest of the indicators and subindicators, which are included in table 3.3, but that do not have sufficient data. Nevertheless, there are no omitted targets under SDG 3.

Annex 3.2 for a graph for each of the evaluated series/indicators, showing the country level data values of the series/ indicator for the years whose data points were used for every included country.

The global, regional, and subregional aggregates of 3.3.5 and the preserved series of 3.b.2 are calculated using a total sum, whereas the aggregates of the preserved series of 3.d.1 are calculated using a simple arithmetic mean. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the indicators/series whose global, regional, and subregional aggregates are weighted averages: Total number of births in 2011 (from the United Nations data), Total population in 2015 (from the World Population Prospects (WPP)), Total population in 2014 (from WPP), Total population in 2013 (from WPP), Total population aged 15 years and above in 2015 (from WPP), Total population of women aged between 15 and 49 years in 2014 (from WPP), Total population of women aged between 15 and 19 years in 2015 (from WPP), and Total population of children aged between 0 and 2 years in 2015 (from WPP). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We note that, when a certain series or indicator (namely 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.4.1, 3.4.2, 3.5.2, 3.8.1, 3.9.1, 3.9.2, 3.9.3, 3.a.1 and 3.b.1) needs a population-related weighting variable in 2016 or 2017, we use the latest available data for this variable, i.e. data for 2015 provided by WPP. For 3.1.2, what we actually need as a weighting variable is the total number of births in 2015. WPP provides data on total number of births only for every five years together and not for any single year. The last year range provided by WPP data is 2010–2015. However, the United Nations database (http://data.un.org/Data.aspx?d=SOWC&f=inID%3A75) includes data on the total number of births only for 2011, which is the latest available single year that has this data and which is compatible with the beginning of last WPP range. Therefore, we use United Nations data for 2011. We are also sometimes obliged to compromise the weighting variable itself with a proxy one such as in 3.1.1 and 3.2.2 and the two series of 3.2.1. For these series, we ideally need to weight by the "total number of live births" (according to the metadata) in 2015 for 3.1.1, and in 2017 for 3.2.2 and the two series of 3.2.1; knowing that, however, 2016 is the latest year for which complete/nearly complete data are available for this weighting variable. Nevertheless, since data availability for this weighting variable is poor for recent years, respectively, which could reduce our final data coverage significantly when computing the global, regional and subregional aggregates of these series (from 22 Arab countries to six Arab countries only for 3.1.1, and five Arab countries for 3.2.2 and the two series of 3.2.1), we choose to weight by the latest data available for the "total number of births" (in 2011) that can serve as a proxy for the ideal weighting variable. The case of 3.3.1 is similar since we ideally weight by the total number of uninfected population being the denominator (according to the official definition of the data series). However, we need to use WHO data on total number of people living with HIV and subtract this from the data on total population. In addition to the fact that this is considerable data manipulation, more than one fourth of the world's countries are not covered by WHO data. Therefore, we decide to weight by total population in 2016 (knowing that 2015 is the latest available year to be used), which can serve as a proxy.

For 3.b.1, the weighting variable we use is total population of children aged 0–2 (in 2015) since this is the target population that the metadata advises should be used as the weighting variable ("The target population for given vaccine is defined based on recommended age for administration. The primary vaccination series of most vaccines are administered in the first two years of life"). For 3.5.2 and 3.a.1, we use the total population aged 15 years and above in 2015 as a weighting variable, and we note that the weighting variable was constructed using the data set provided by the source (WPP) by summing up the values corresponding to all the ages from 15 to 100. Finally, we note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. As such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies for 3.1.1, 3.2.2 and the two series of 3.2.1 where 21 Arab countries out of a potential of 22 are covered after weighting. The same applies for 3.1.2 where 19 Arab countries out of a potential of 20 are covered after weighting. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries that have data for the evaluated series/indicator, regardless of the weighting variable's data availability.

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For 3.1.1 (Maternal mortality ratio), we set the target value at 70 per 100,000 per live births as advised by target 1 (By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births). In this case, if the maternal mortality ratio is less than 70, then the target is achieved. For the indicators of target 2 (By 2030, end preventable deaths of newborns and children under 5 years of age with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births), we set the target value as 25 deaths per 1,000 live births for the under-5 mortality rate indicator and as 12 deaths per 1,000 live births for the neonatal mortality rate indicator. For target 3 (By 2030 end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases) we set the target value as zero for indicators 3.3.1, 3.3.2, 3.3.3 and 3.3.4. For target 4 (By 2030 reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being, by 2030), we set the target value as 6 per cent for indicator 3.4.1. The target value for target 6 (By 2030 halve the number of global deaths and injuries from road traffic accidents) is set as half of the computed world mean (17.48 deaths per 100,000 population), or 9 deaths per 100,000 population. Finally, under target 8 (achieve universal health coverage (UHC), including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all), we consider the target value for 3.8.1 (Universal health coverage (UHC) service coverage index) as 100. However, we remain unable to determine the desired target values for the rest of the targets and for 3.3.5 and 3.4.2 since it is not possible to infer them from the official titles of the corresponding targets, and thus they are not shown.

Of the indicators that we can use, six have sex disaggregated data with sufficient data availability: 3.2.1 (both series), 3.3.1, 3.4.1, 3.4.2, 3.9.3 and 3.a.1. We construct the female-to-male ratios for indicators 3.3.1, 3.4.1, 3.4.2, 3.9.3 and 3.a.1, and the two series of indicator 3.2.1, and again check for data availability. We then undertake the same data substitution process on these ratios in order to get the optimal data availability in 2017 that is parallel/almost parallel to what we could get for the respective indicators in their aggregated forms (table 3.2).

Table 3.2 Data substitution scheme for female-to-male ratios of selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
3.4.1 (Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease)	183 (21)	2016
3.4.2 (Suicide mortality rate)	182 (21)	2016
3.9.3 (Mortality rate attributed to unintentional poisoning)	1 (0)	2010
3.a.1 (Age-standardized prevalence of current tobacco use among persons aged 15 years and older)	146 (14)	2015

Concerning the ratio of the two series of 3.2.1 and that of 3.3.1, no substitution was made as data are complete or nearly complete for our base year (2017) and thus it is not possible to substitute data for any observation within the considered time interval (2009–2017).

For each of Mongolia, Pakistan and Slovakia, the value of the female data and that of the male data are both equal to zero for 3.3.1 in 2017. Therefore, we consider the ratio of this indicator for these three countries in 2017 as 100 per cent (i.e. representing perfect gender equality) instead of a missing value. In addition, the value of the ratio of 3.3.1 for Gabon is higher than 200 and is thus capped to 200 in order to avoid any bias in the computed global and regional aggregates. Similarly, the values of the ratio of 3.9.3 for Afghanistan, Cuba, Myanmar and Pakistan are higher than 200 and are thus capped to 200 in order to avoid any bias in the computed global and regional aggregates.

We calculate the global, regional and subregional aggregates for each of the above-mentioned six ratios, following the same calculation methods used for the respective series/indicators in their aggregated forms (i.e. total sum, simple arithmetic mean, or weighted average). When a weighted average is used and the data availability of the weighting variable undermines the data coverage of the of series/indicator in its aggregated form, the data coverage of sex disaggregated ratio of this series/indicator is undermined in the exact same way by the data availability of the weighting variable.

Table 3.3 Targets, indicators, tiers and data availability for Arab countries – SDG 3 (Ensure healthy lives and promote well-being for all at all ages)

Target	Indicator	Number of subindicators	Tier	Data availability*
3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1 Maternal mortality ratio	1 chosen out of 1	Tier I	22
	3.1.2 Proportion of births attended by skilled health personnel	1 chosen out of 1	Tier I	20
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	3.2.1 Under-5 mortality rate	2 chosen out of 4	Tier I	22
	3.2.2 Neonatal mortality rate	1 chosen out of 2	Tier I	22
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations	1 chosen out of 1	Tier I	13
	3.3.2 Tuberculosis incidence per 100,000 population	1 chosen out of 1	Tier I	22
	3.3.3 Malaria incidence per 1,000 population	1 chosen out of 1	Tier I	14
	3.3.4 Hepatitis B incidence per 100,000 population	1 chosen out of 1	Tier II	21
	3.3.5 Number of people requiring interventions against neglected tropical diseases	1 chosen out of 1	Tier I	21
3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment, and promote mental health and wellbeing	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	1 chosen out of 5	Tier I	21
	3.4.2 Suicide mortality rate	1 chosen out of 2	Tier I	21
3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders	(No data)	Tier III	x
	3.5.2 Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol	1 chosen out of 1	Tier I	21

3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	3.6.1 Death rate due to road traffic injuries	1 chosen out of 1	Tier I	22
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	3.7.1 Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods	1 chosen out of 1	Tier I	14
	3.7.2 Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1,000 women in that age group	1 chosen out of 1	Tier II	19
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)	1 chosen out of 1	Tier II	21
	3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income	(Dropped) 2	Tier II	x
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution	1 chosen out of 6	Tier I	21
	3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)	1 chosen out of 1	Tier I	21
	3.9.3 Mortality rate attributed to unintentional poisoning	1 chosen out of 1	Tier I	21
3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older	1 chosen out of 1	Tier I	14

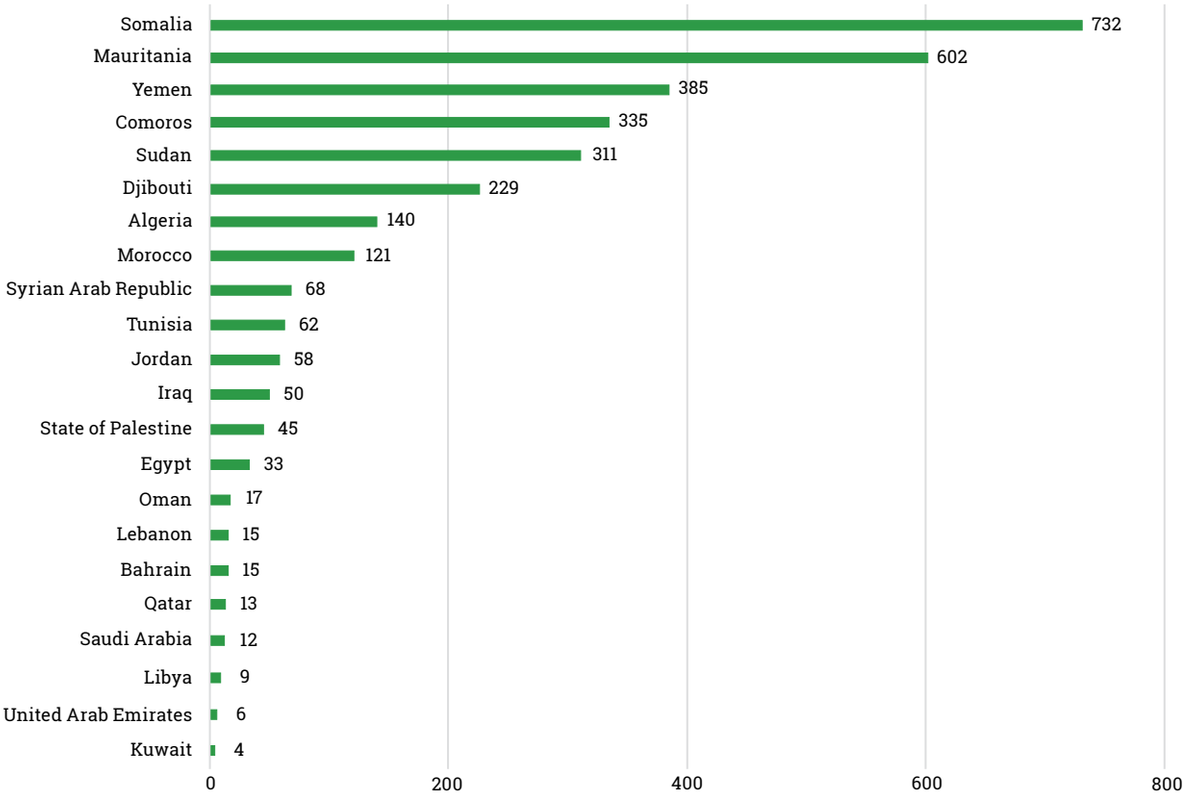
3.b Support the research and development of vaccines and medicines for the communicable and non communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all	3.b.1 Proportion of the target population covered by all vaccines included in their national programme	3 chosen out of 3	Tier II	22, 19, 14
	3.b.2 Total net official development assistance to medical research and basic health sectors	1 chosen out of 2	Tier I	22
	3.b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis	(No data)	Tier III	x
3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States	3.c.1 Health worker density and distribution	4 chosen out of 4	Tier I	17, 19, 17, 18
3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness	1 chosen out of 14	Tier I	21

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
We note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the data availability of the weighting variable.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 3.1 Indicator 3.1.1 - Maternal mortality ratio

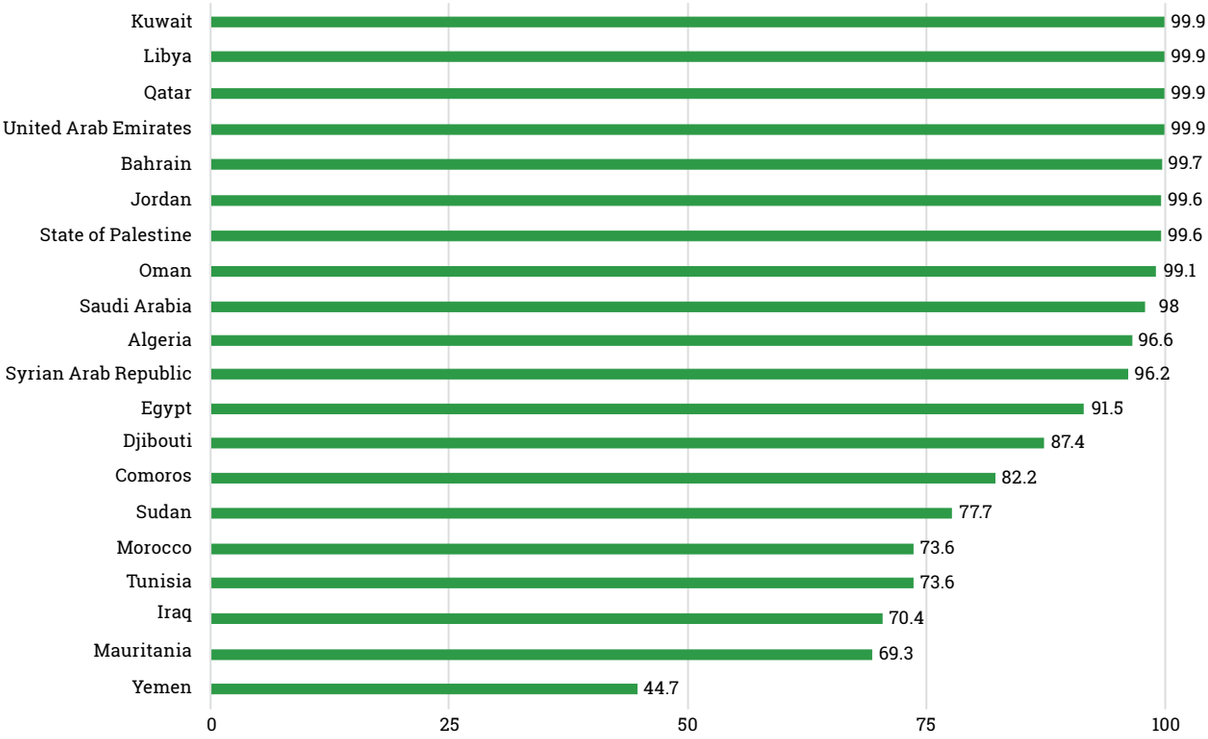
Maternal mortality ratio (deaths per 100,000 live births)



Note: All data are from 2015.

Figure 3.2 Indicator 3.1.2 - Proportion of births attended by skilled health personnel

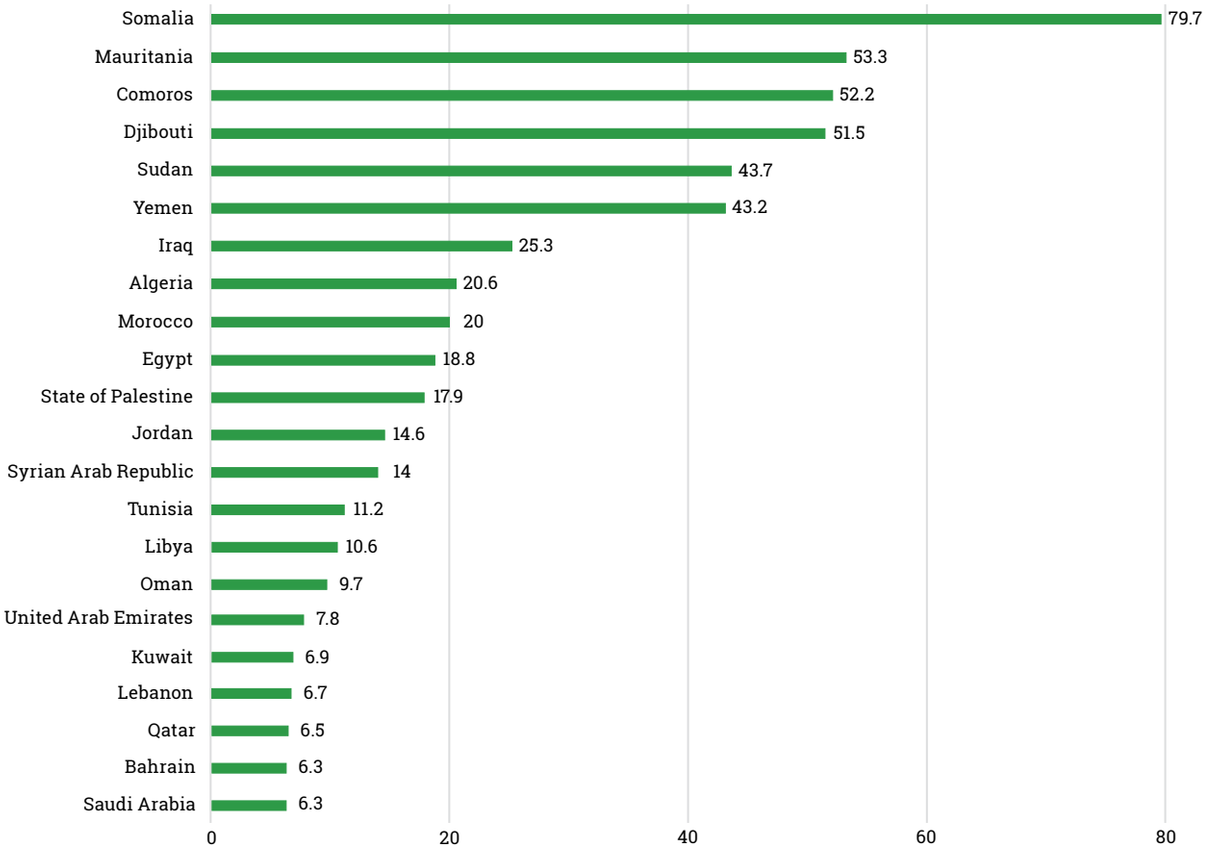
Proportion of births attended by skilled health personnel (percentage)



Note: Data are from various years as follows: Syrian Arab Republic (2009); Morocco (2011); Algeria, Comoros, Djibouti, Iraq, Jordan, Tunisia (2012);Libya, Saudi Arabia, Yemen (2013); Egypt, Oman, State of Palestine (2014); Bahrain, Kuwait, Mauritania, Qatar, United Arab Emirates (2015).

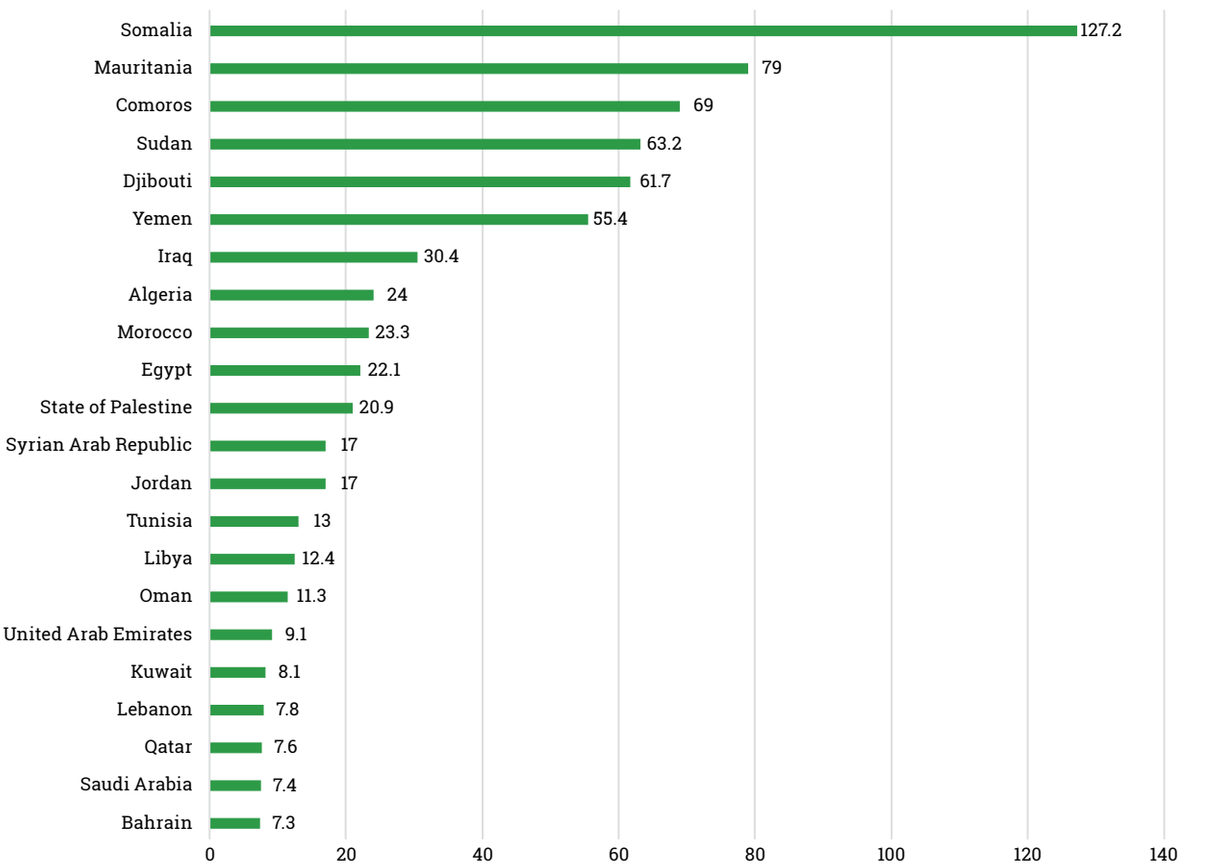
Figure 3.3 Two series of indicator 3.2.1 - Under-5 mortality rate

Under-5 mortality rate (deaths per 1,000 live births)



Note: All data are from 2017.

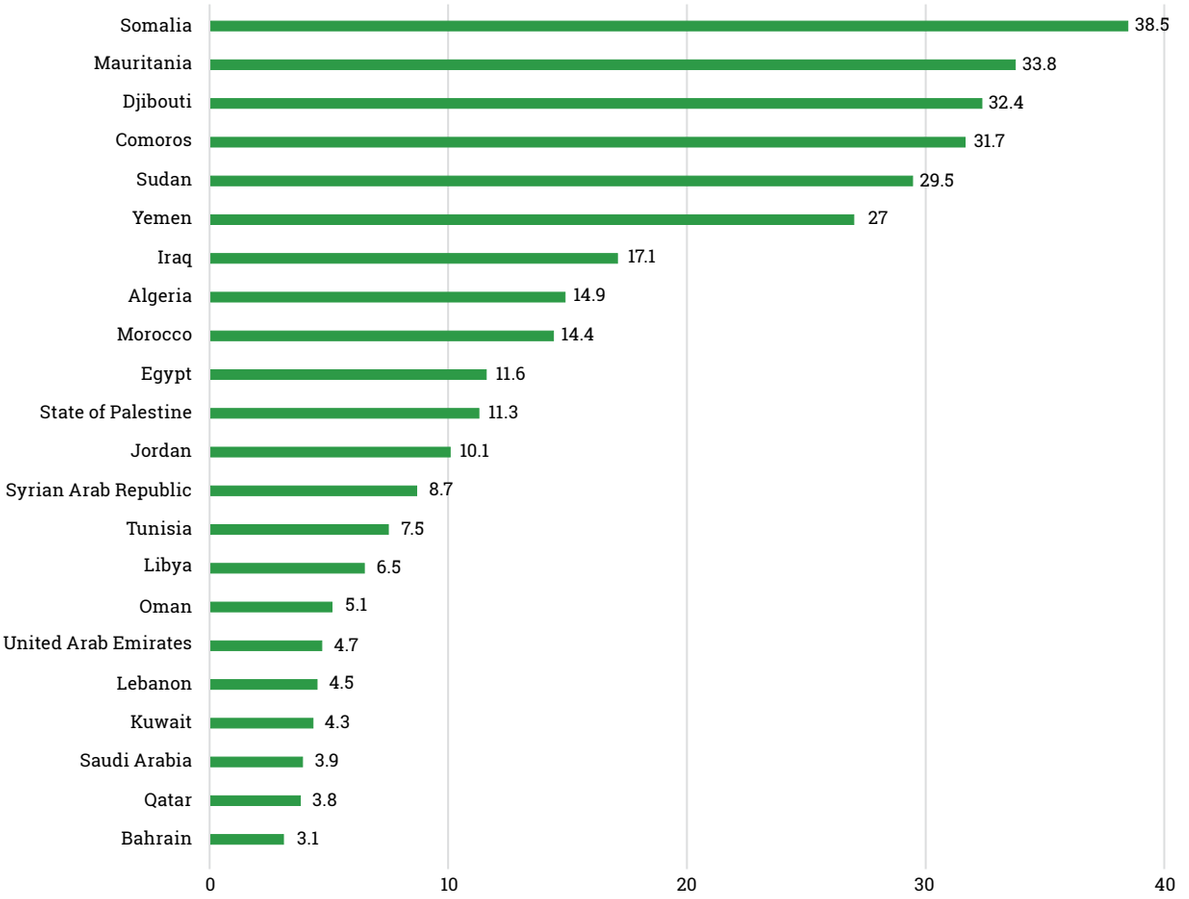
Infant mortality rate (deaths per 1,000 live births)



Note: All data are from 2017.

Figure 3.4 Indicator 3.2.2 - Neonatal mortality rate

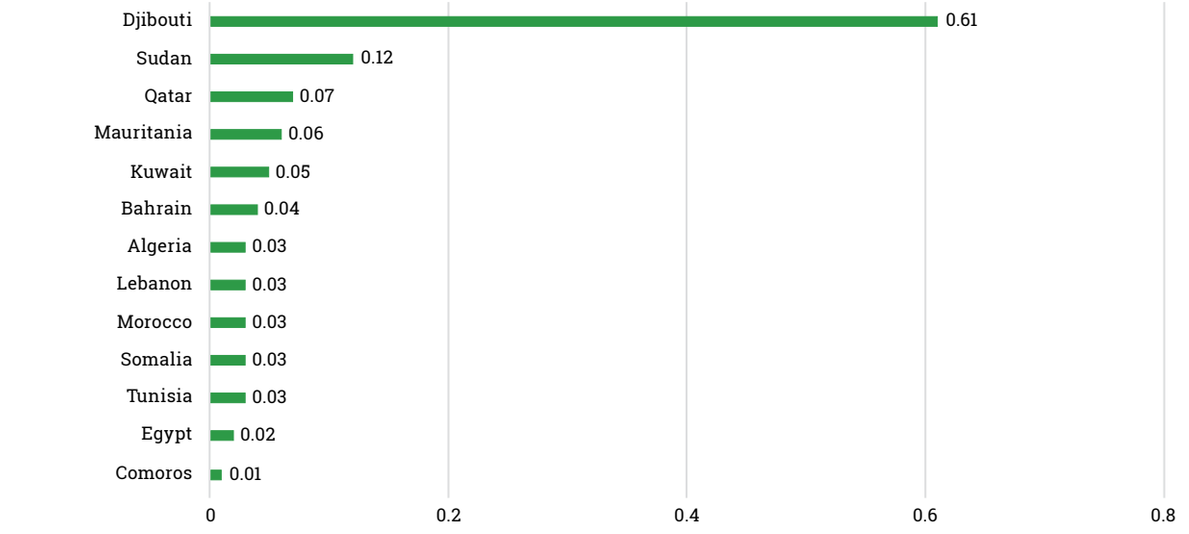
Neonatal mortality rate (deaths per 1,000 live births)



Note: All data are from 2017.

Figure 3.5 Indicator 3.3.1 - Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations

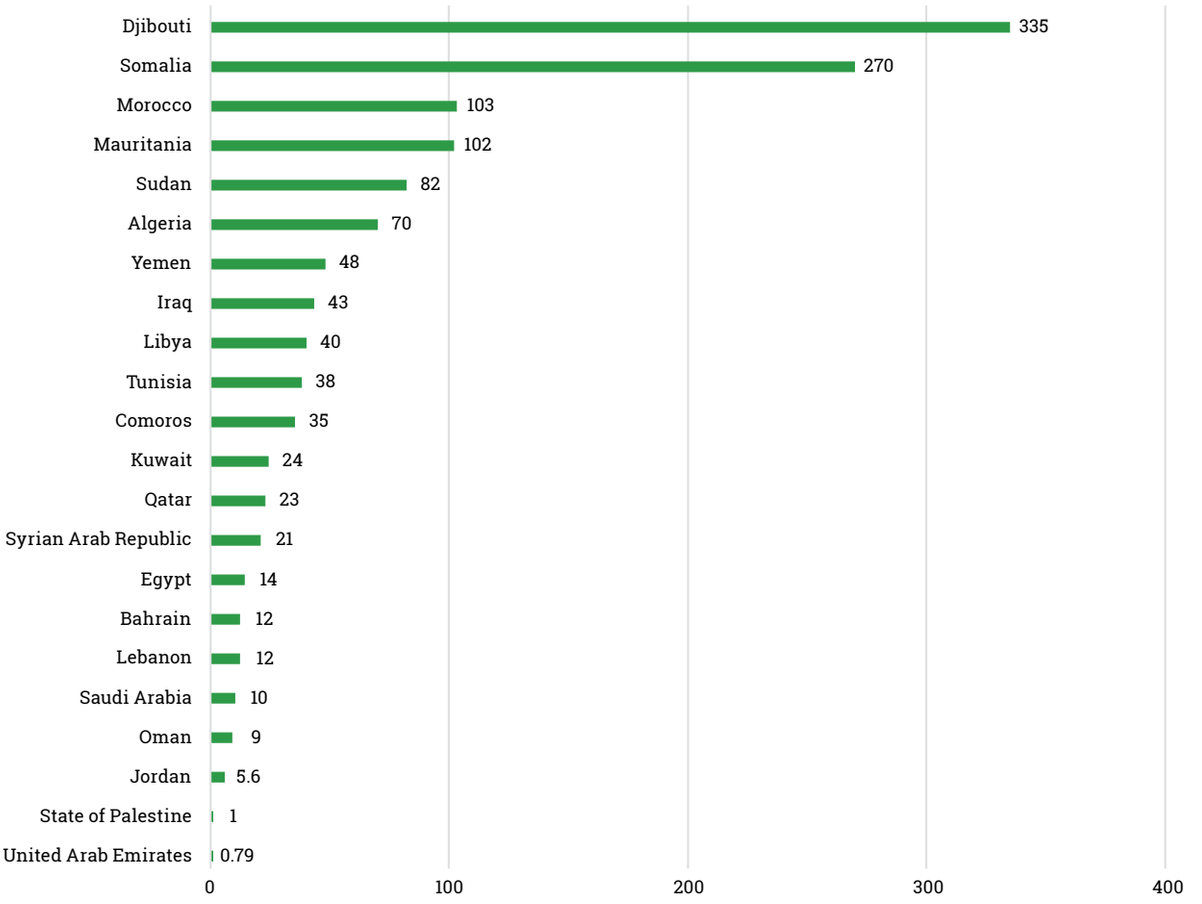
Number of new HIV infections per 1,000 uninfected population



Note: All data are from 2017.

Figure 3.6 Indicator 3.3.2 - Tuberculosis incidence per 100,000 population

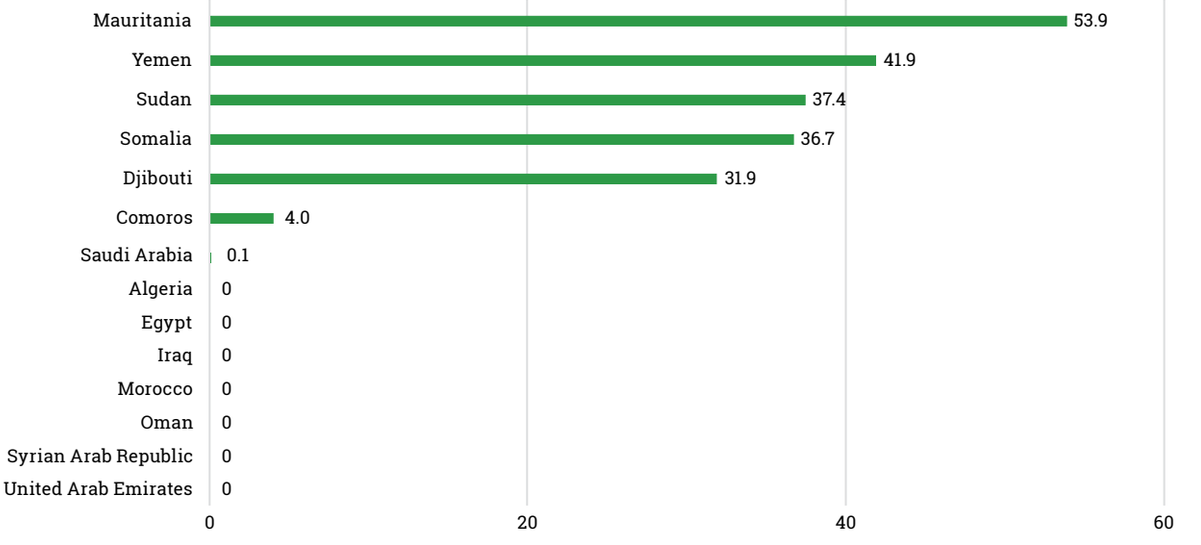
Tuberculosis incidence per 100,000 population



Note: All data are from 2016.

Figure 3.7 Indicator 3.3.3 - Malaria incidence per 1,000 population

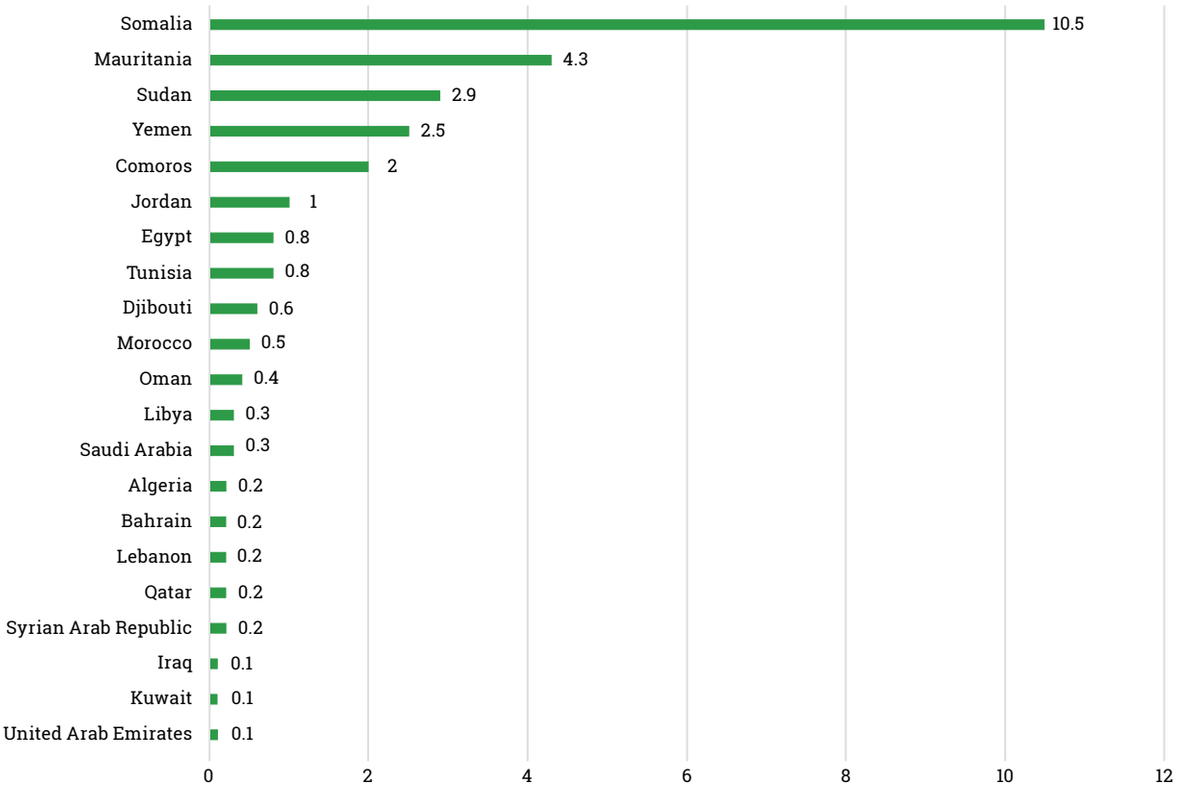
Malaria incidence per 1,000 population at risk



Note: All data are from 2017.

Figure 3.8 Indicator 3.3.4 - Hepatitis B incidence per 100,000 population

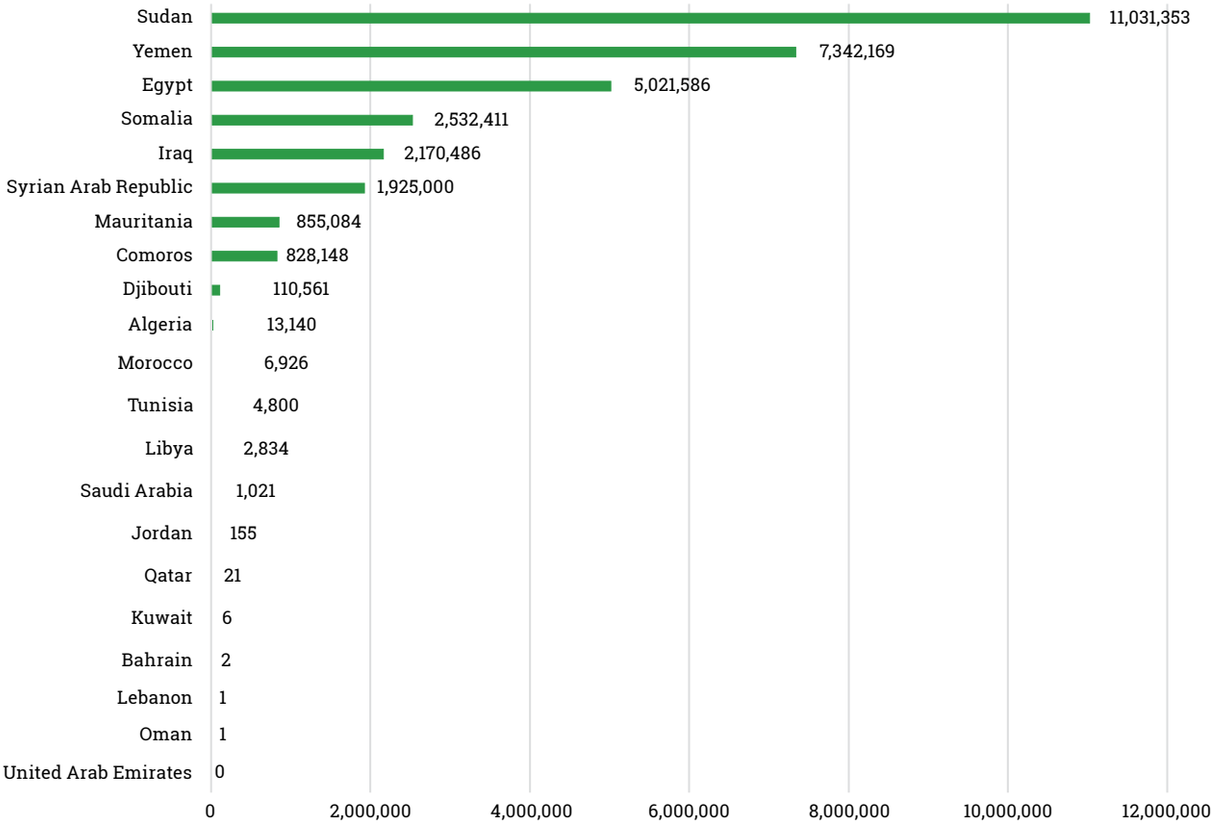
Prevalence of Hepatitis B surface antigen (HBsAg) (percentage)



Note: All data are from 2015.

Figure 3.9 Indicator 3.3.5 - Number of people requiring interventions against neglected tropical diseases

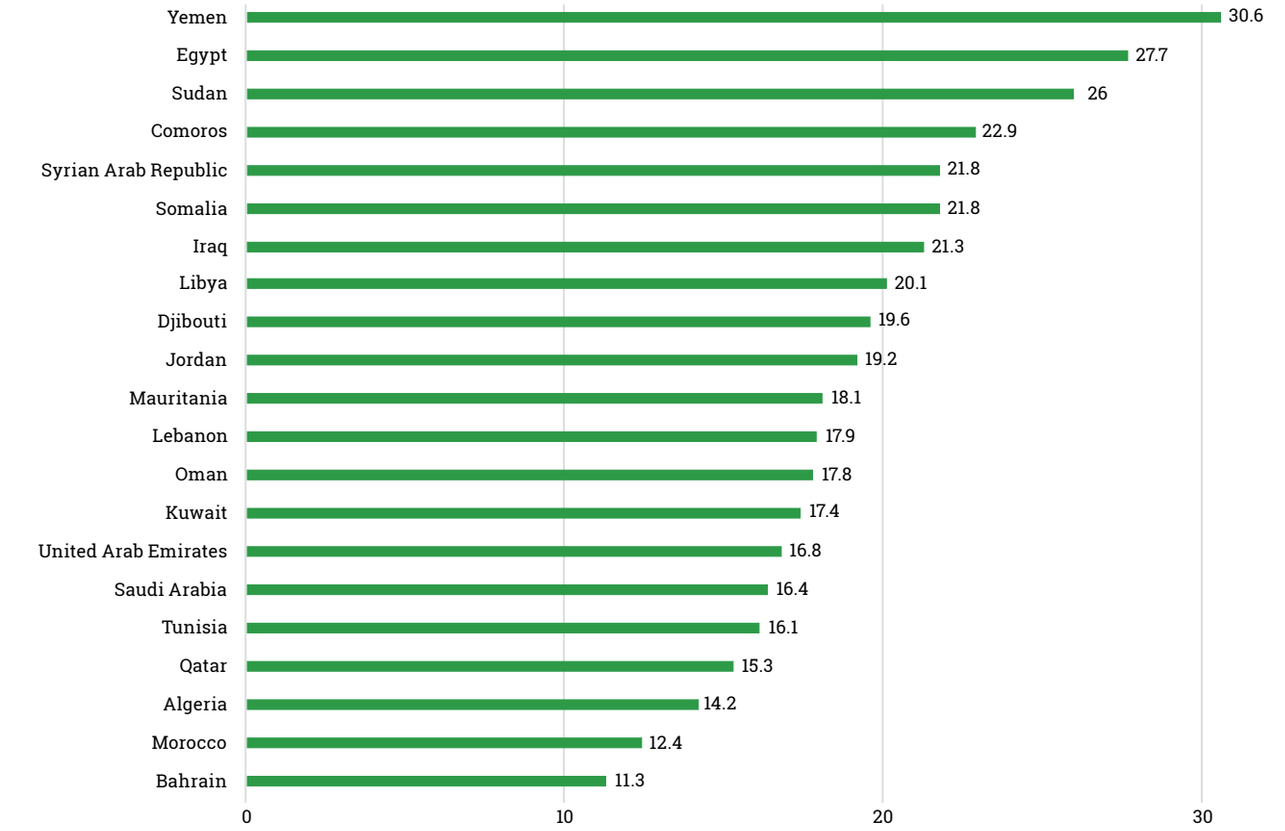
Number of people requiring interventions against neglected tropical diseases



Note: All data are from 2017.

Figure 3.10 Indicator 3.4.1 - Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease

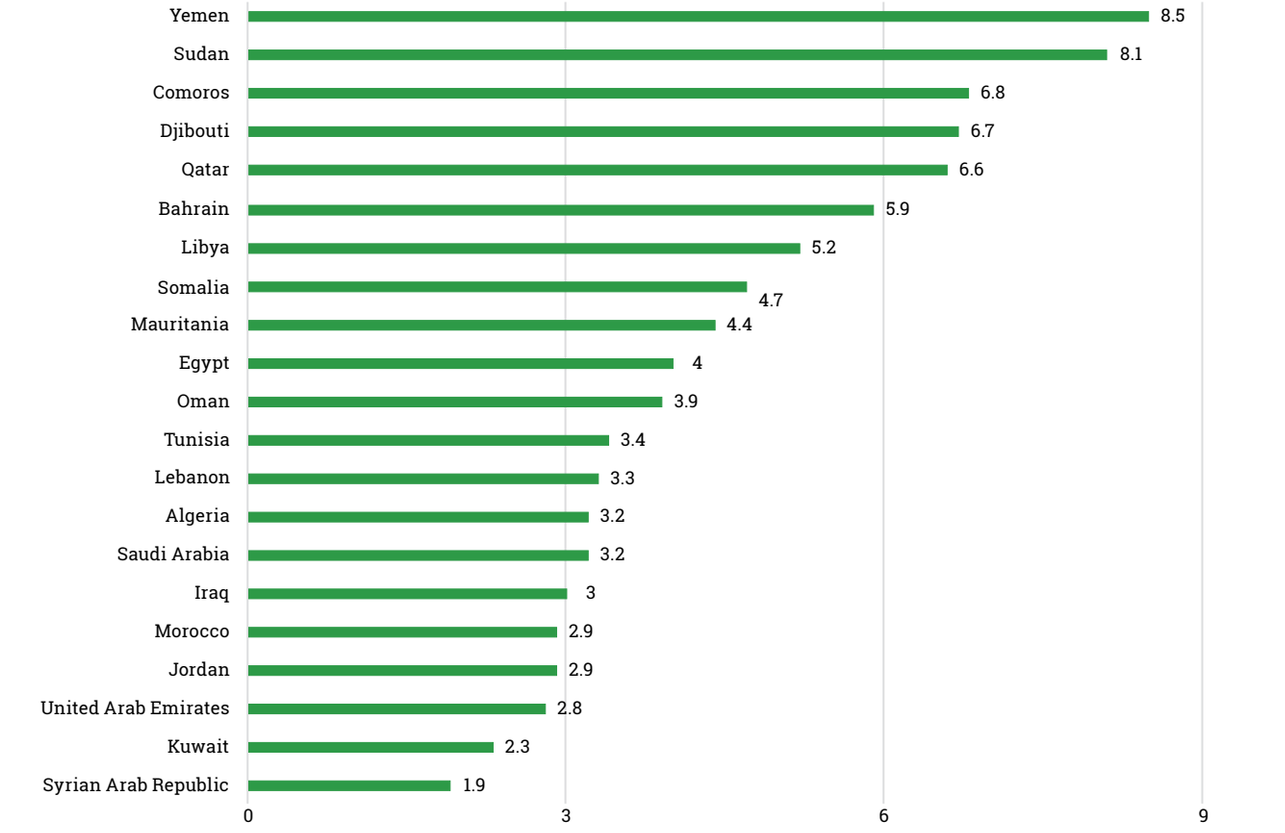
Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease (probability, percentage)



Note: All data are from 2016.

Figure 3.11 Indicator 3.4.2 - Suicide mortality rate

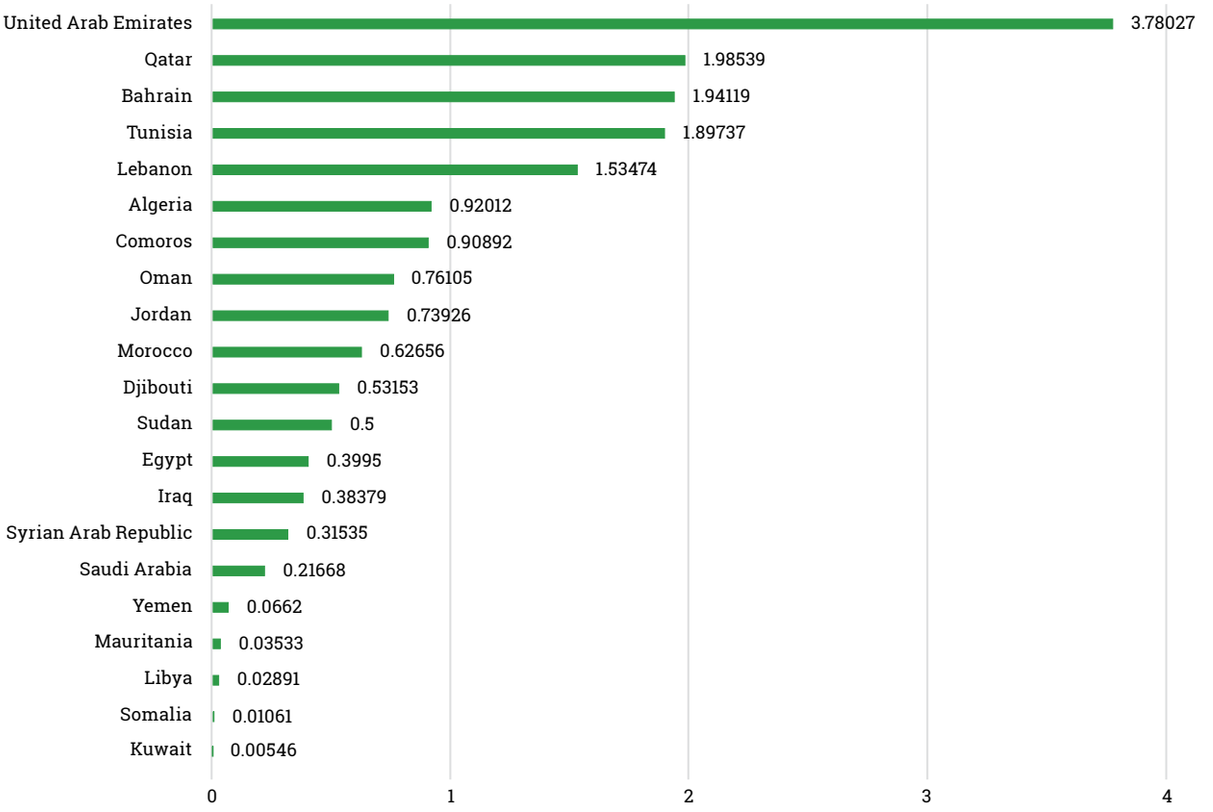
Suicide mortality rate (number of suicides per 100,000 population)



Note: All data are from 2016.

Figure 3.12 Indicator 3.5.2 - Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol

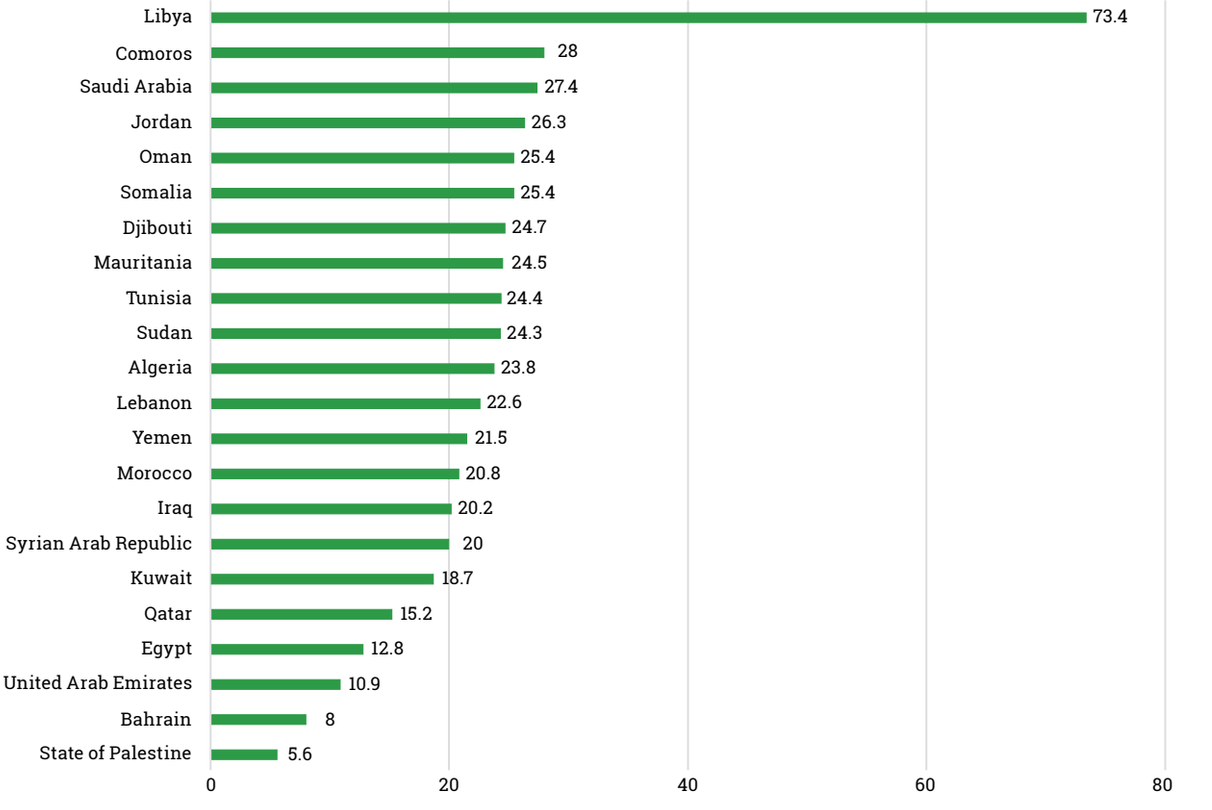
Alcohol consumption per capita (aged 15 years and older) within a calendar year (litres of pure alcohol)



Note: All data are from 2016.

Figure 3.13 Indicator 3.6.1 - Death rate due to road traffic injuries

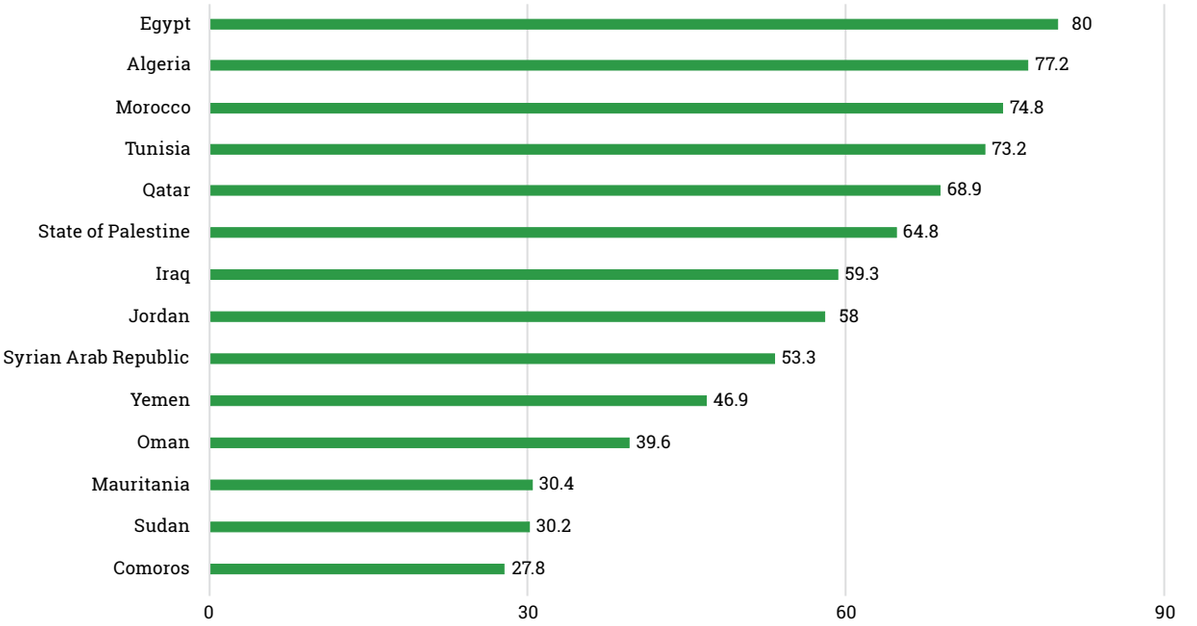
Death rate due to road traffic injuries (number of deaths per 100,000 population)



Note: All data are from 2013.

Figure 3.14 Indicator 3.7.1 - Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods

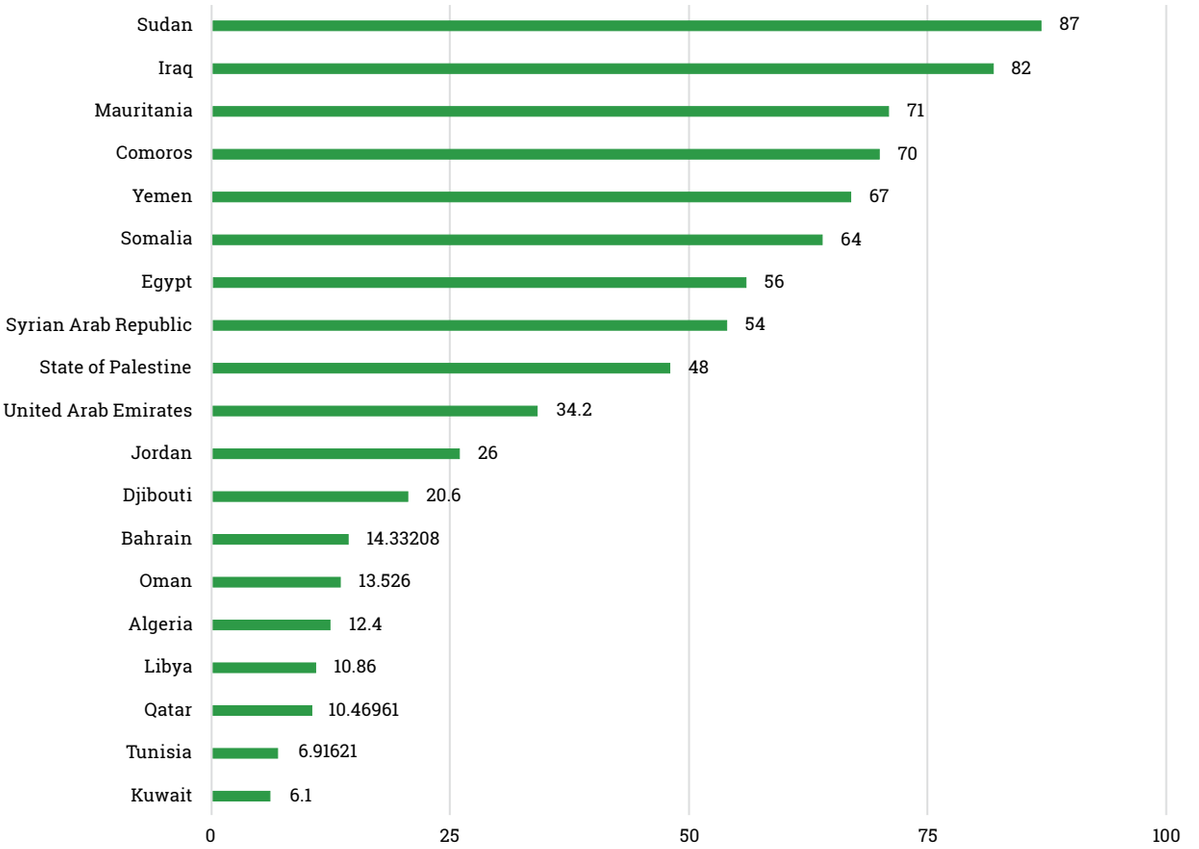
Proportion of women married or in a union of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods (percentage)



Note: Syrian Arab Republic (2009); Iraq, Morocco (2011); Comoros, Jordan, Qatar, Tunisia (2012); Algeria, Yemen (2013); Egypt, Oman, State of Palestine, Sudan (2014); Mauritania (2015).

Figure 3.15 Indicator 3.7.2 - Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1,000 women in that age group

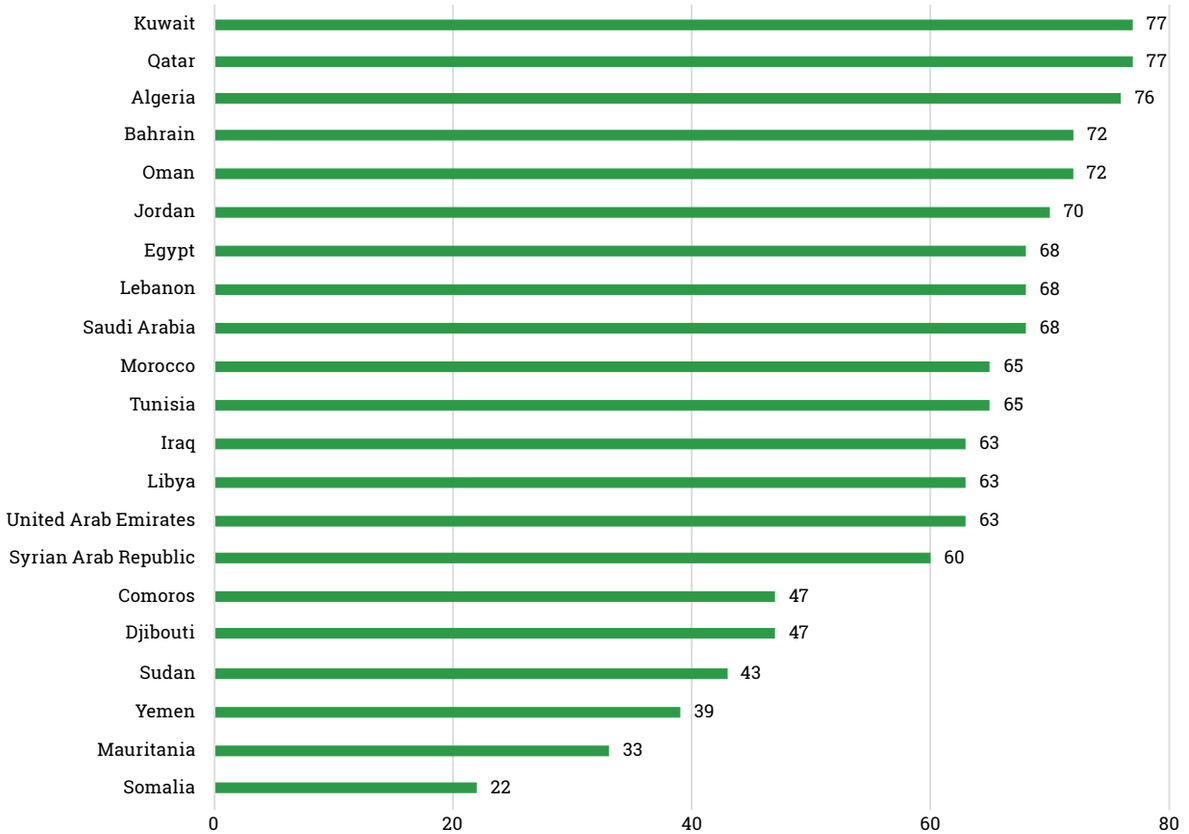
Adolescent birth rate (per 1,000 women aged 15–19 years)



Note: Data are from various years as follows: Iraq, Syrian Arab Republic, United Arab Emirates (2009); Djibouti (2010); Comoros, Jordan, Mauritania, Somalia, Tunisia (2011); Egypt, Yemen (2012); Algeria, Libya, Sudan (2013); Bahrain, State of Palestine (2014); Kuwait, Qatar (2015); Oman (2016).

Figure 3.16 Indicator 3.8.1 - Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

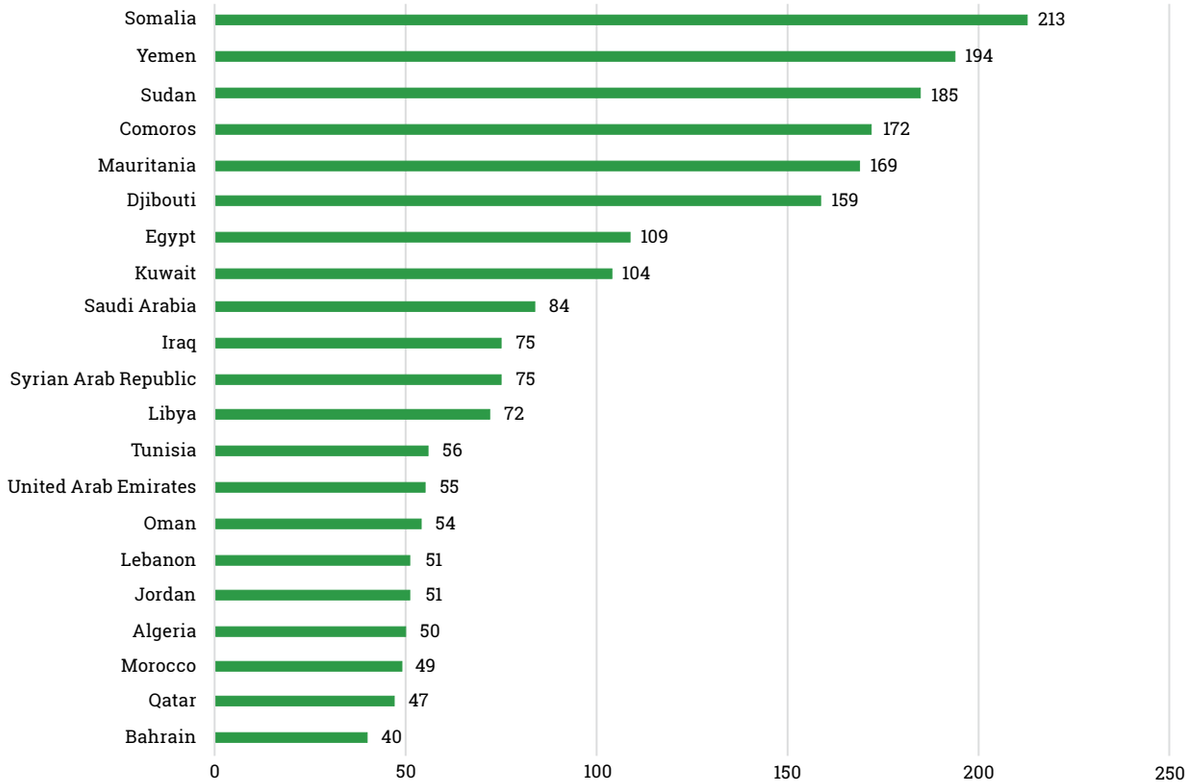
Universal health coverage (UHC) service coverage index (index from 0 to 100)



Note: All data are from 2015.

Figure 3.17 Indicator 3.9.1 - Mortality rate attributed to household and ambient air pollution

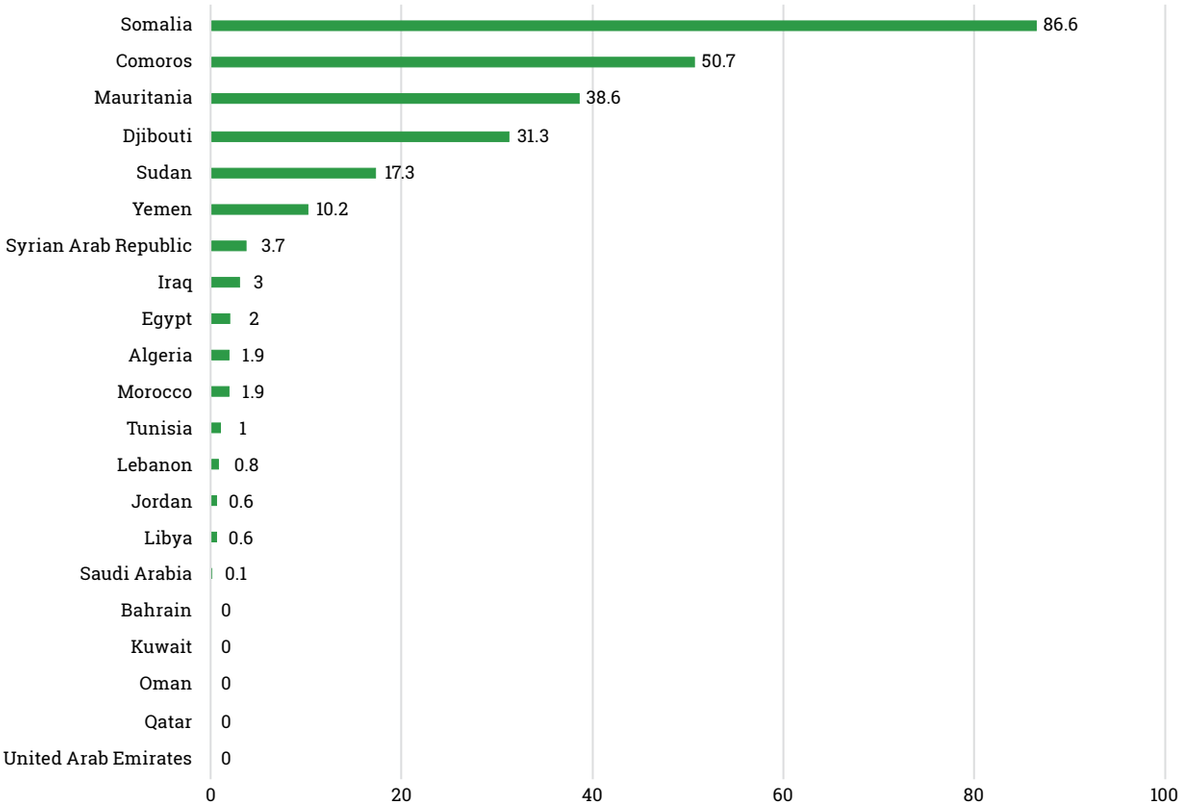
Age-standardized mortality rate attributed to household and ambient air pollution (number of deaths per 100,000 population)



Note: All data are from 2016.

Figure 3.18 Indicator 3.9.2 - Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)

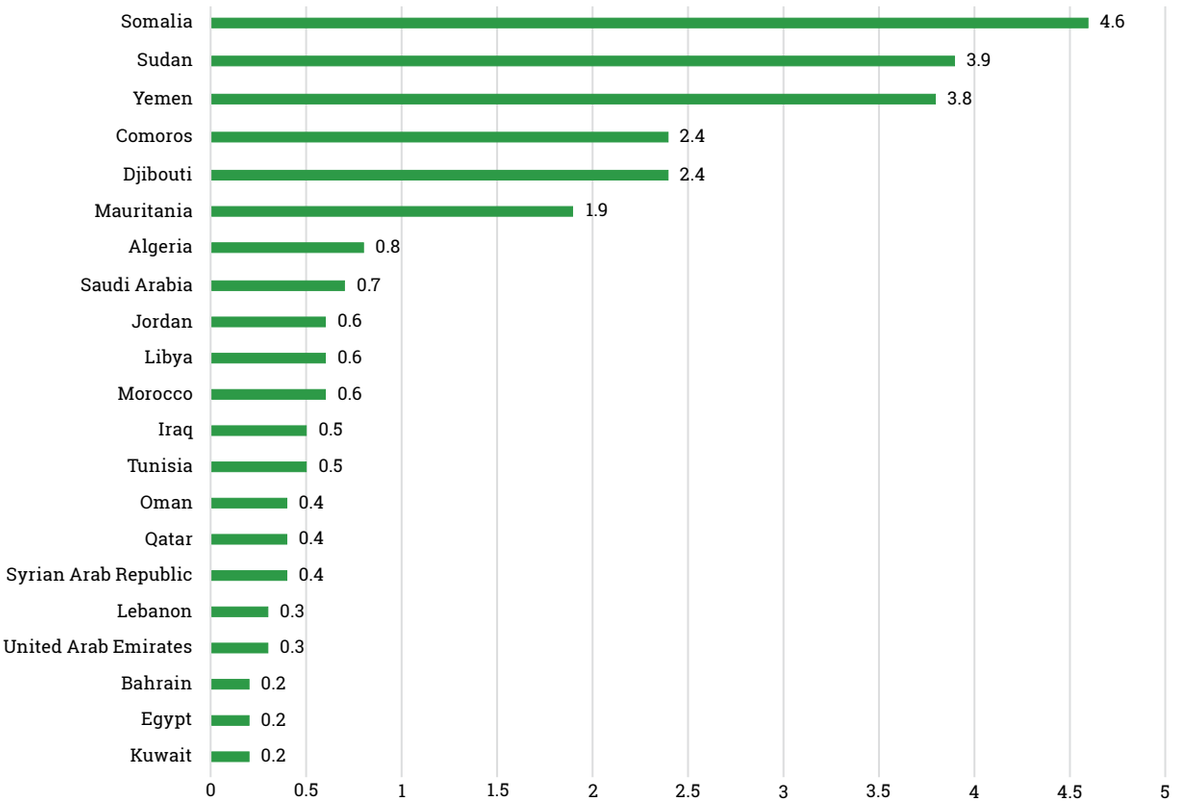
Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (number of deaths per 100,000 population)



Note: All data are from 2016.

Figure 3.19 Indicator 3.9.3 - Mortality rate attributed to unintentional poisoning

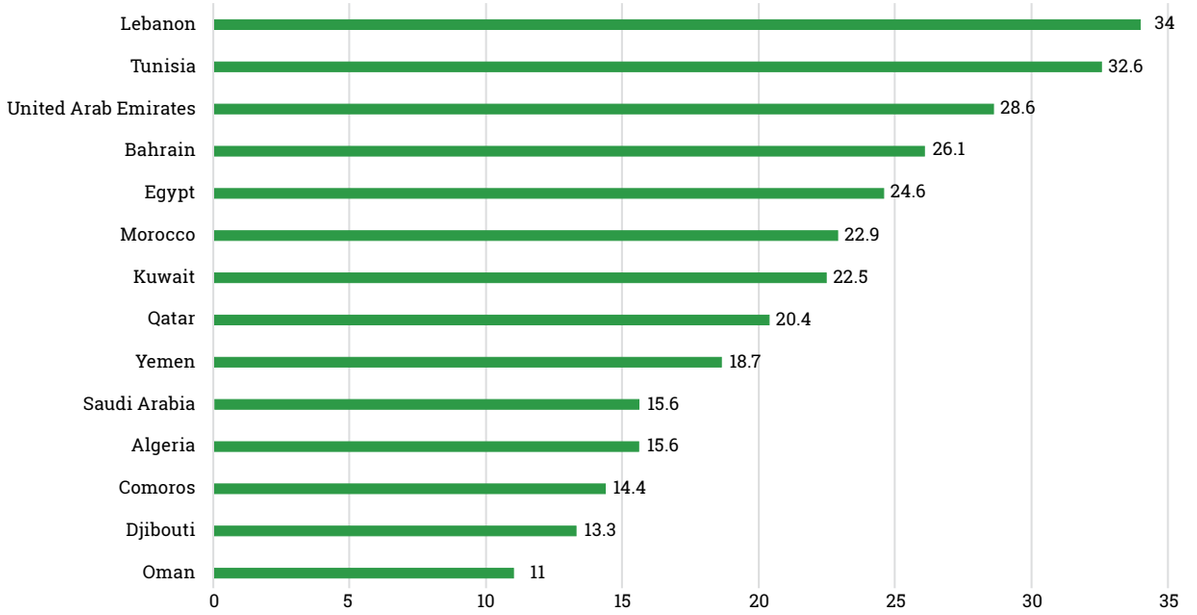
Mortality rate attributed to unintentional poisonings (index, number of deaths per 100,000 population)



Note: All data are from 2016.

Figure 3.20 Indicator 3.a.1 - Age-standardized prevalence of current tobacco use among persons aged 15 years and older

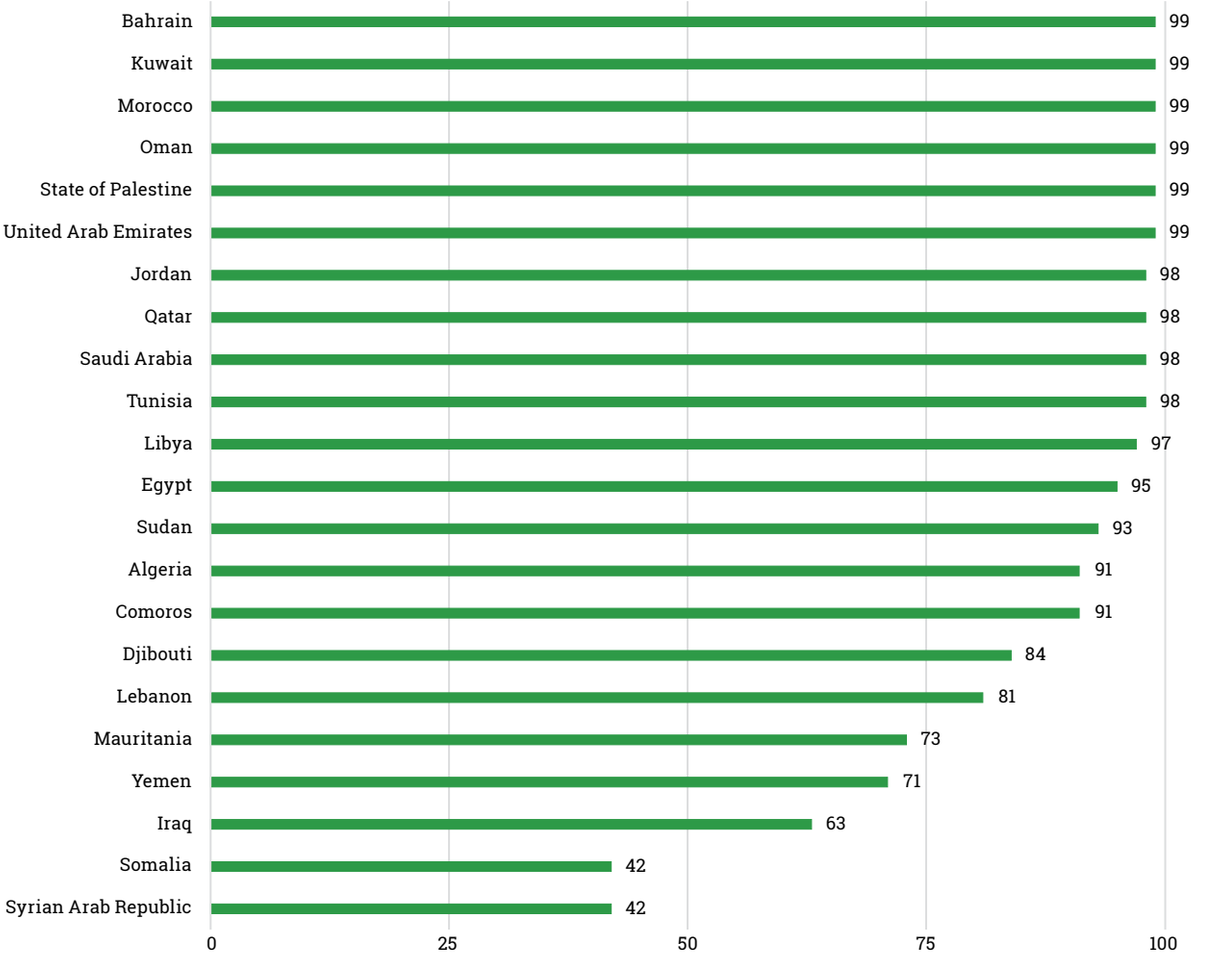
Age-standardized prevalence of current tobacco use among persons aged 15 years and older (percentage)



Note: All data are from 2015.

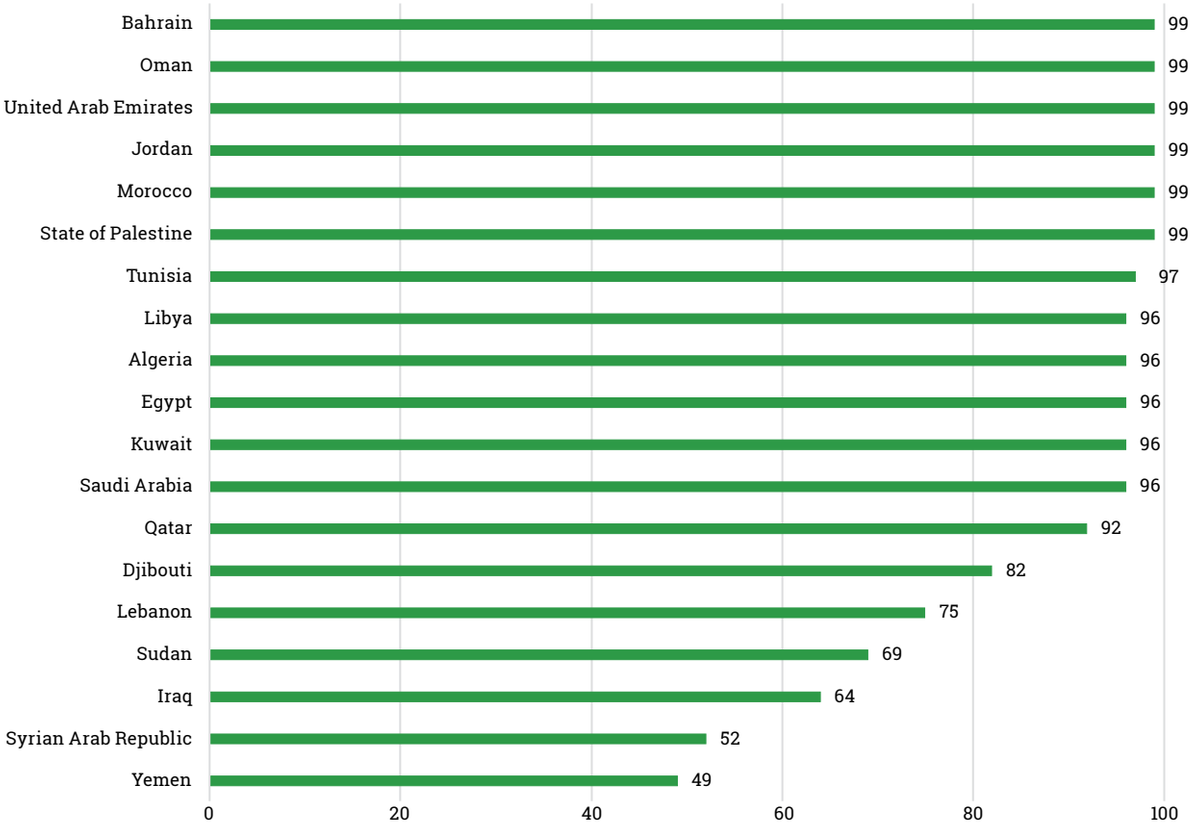
Figure 3.21 Three series of indicator 3.b.1 - Proportion of the target population covered by all vaccines included in their national programme

Proportion of the target population with access to three doses of diphtheria-tetanus-pertussis (DTP3) (percentage)



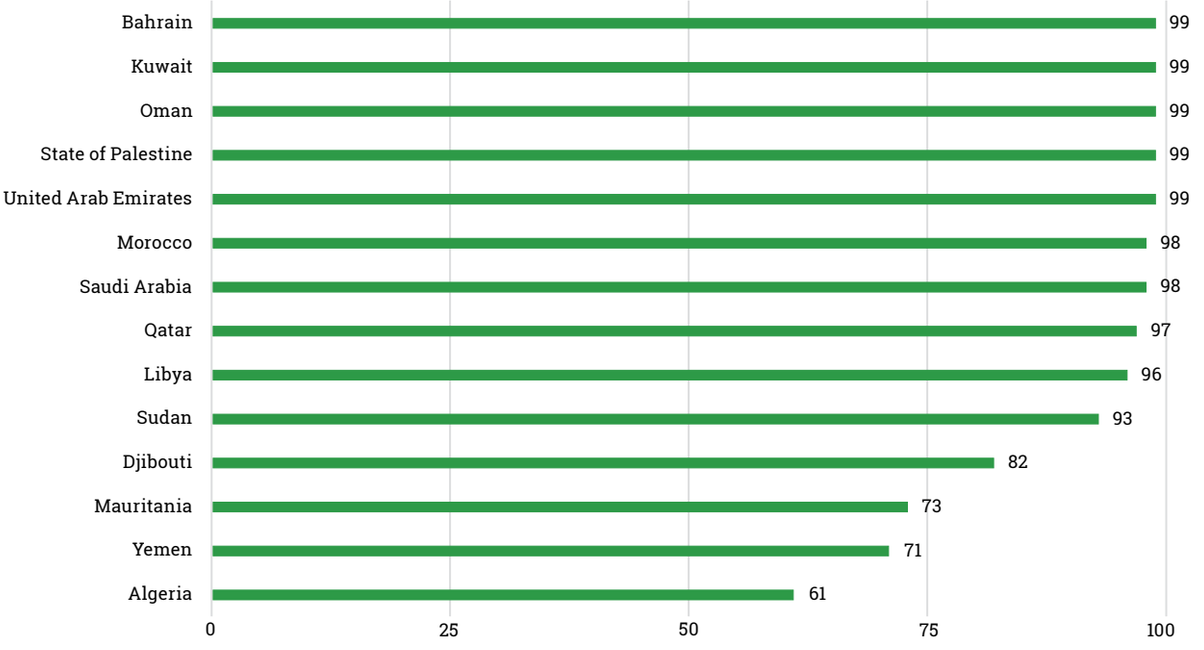
Note: All data are from 2016.

Proportion of the target population with access to measles-containing-vaccine second-dose (MCV2) (percentage)



Note: All data are from 2016.

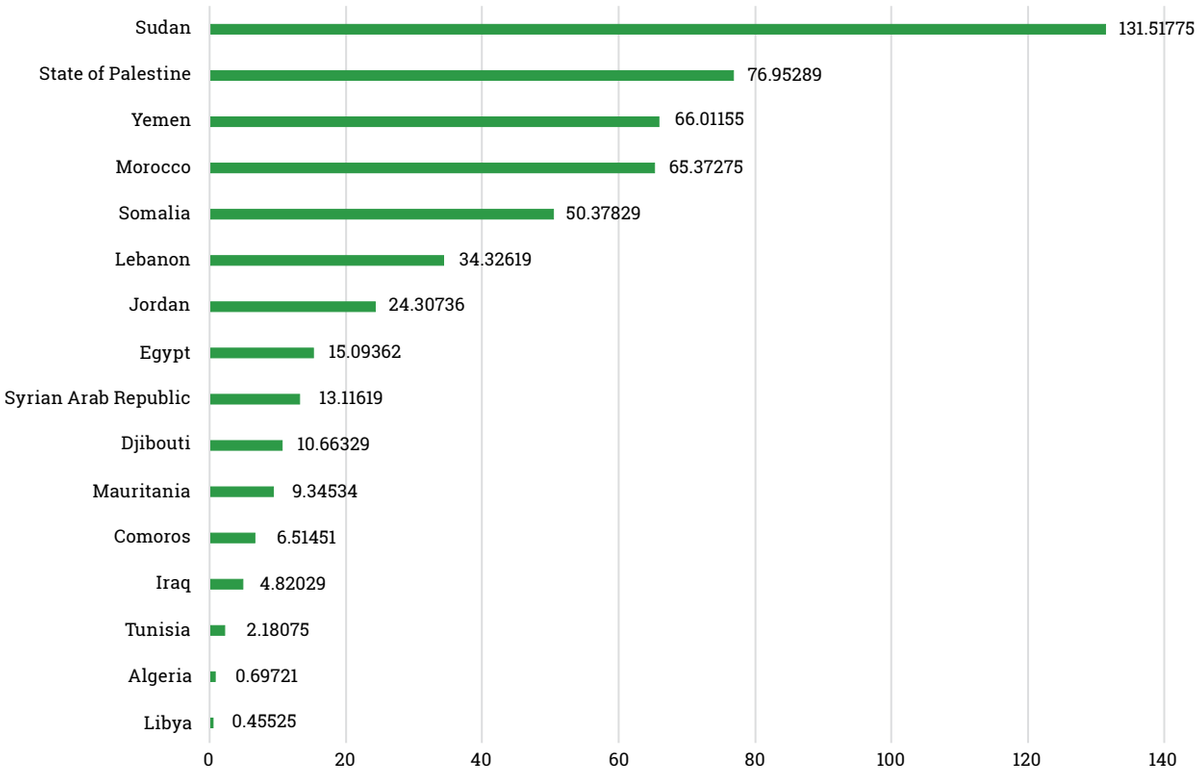
Proportion of the target population with access to pneumococcal conjugate third dose (PCV3) (percentage)



Note: All data are from 2016.

Figure 3.22 Indicator 3.b.2 - Total net official development assistance to medical research and basic health sectors

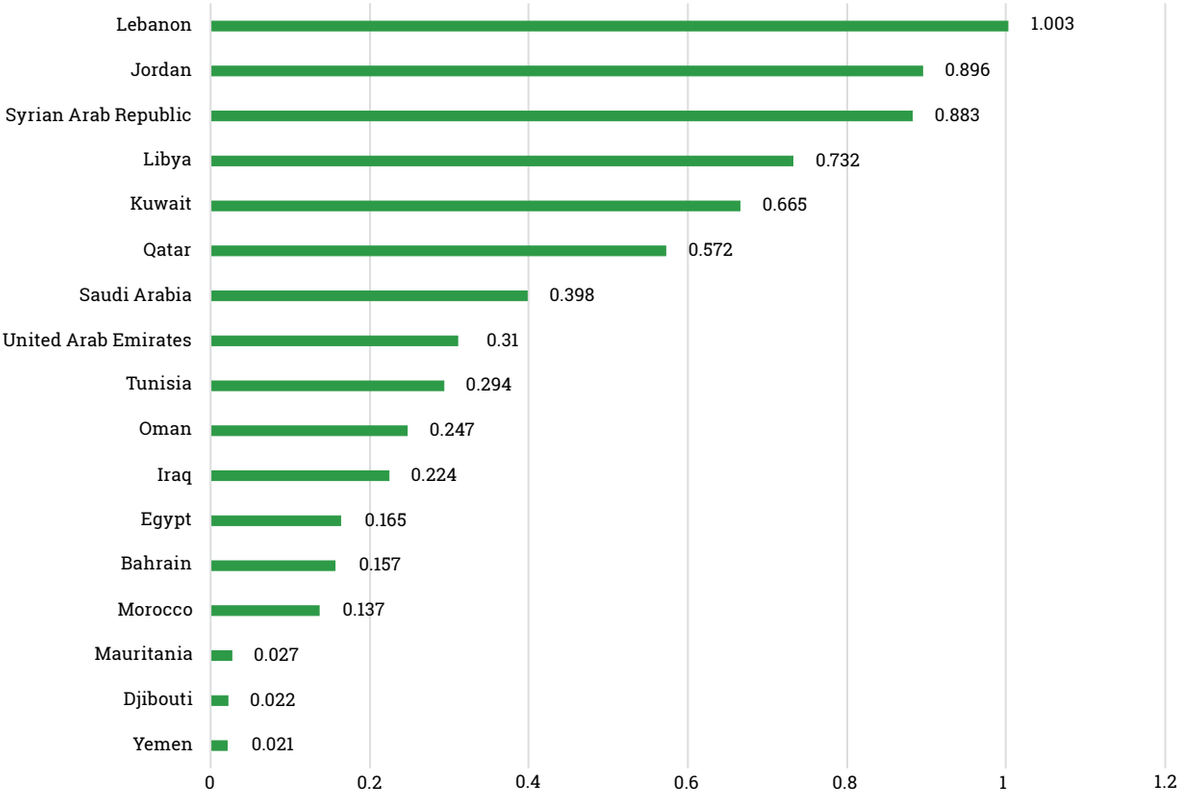
Total official development assistance to medical research and basic health sectors (net disbursements, in millions of constant 2016 United States dollars)



Note: All data are from 2016.

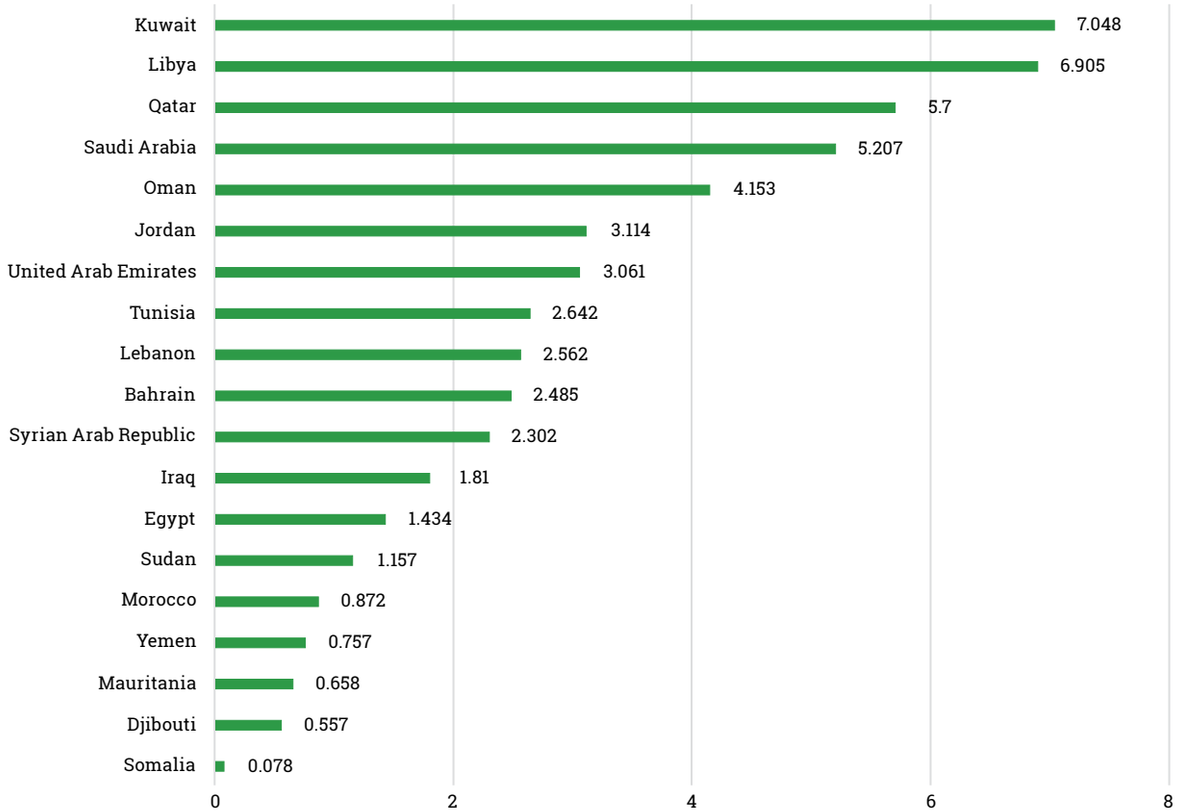
Figure 3.23 Four series of indicator 3.c.1 - Health worker density and distribution

Health worker density of dentists (per 1,000 population)



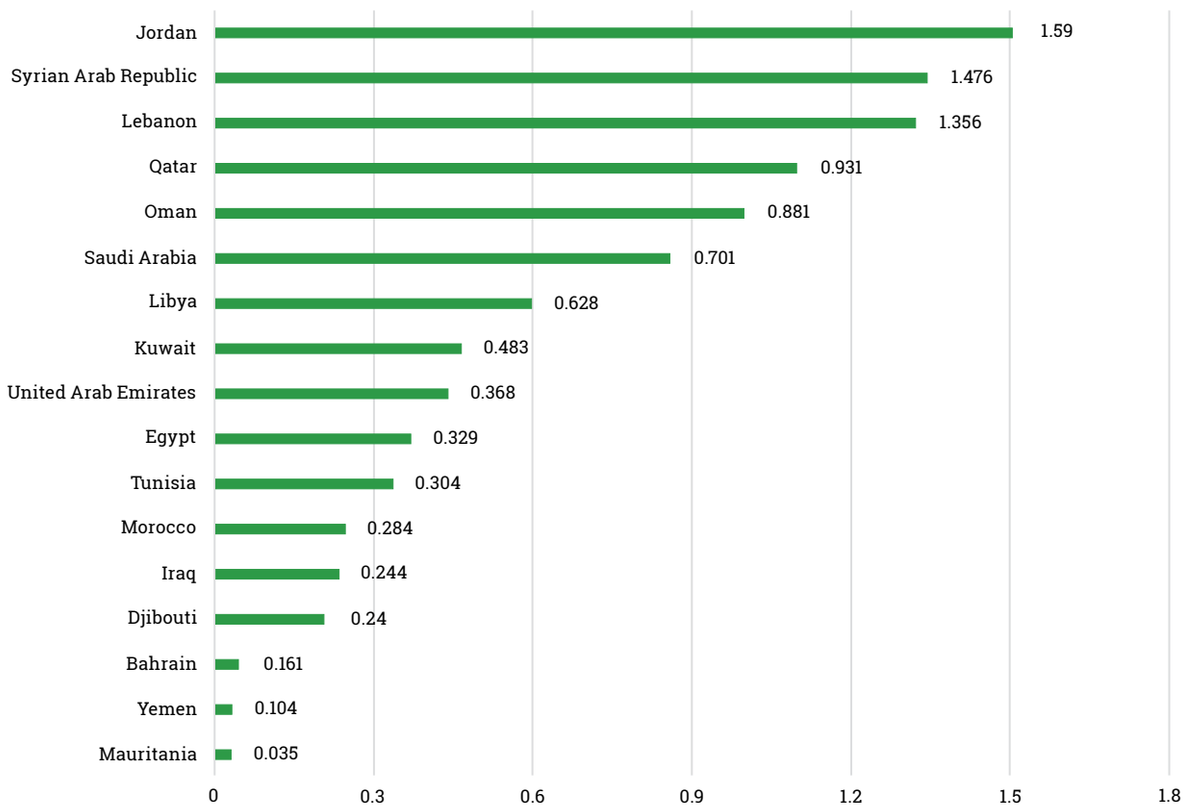
Note: Data are from various years as follows: Mauritania (2009); Tunisia (2010); Djibouti, Egypt, Iraq, Lebanon, Libya, Morocco, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen (2014); Bahrain, Jordan, Kuwait (2015); Oman (2016).

Health worker density of Nurses (per 1,000 population)



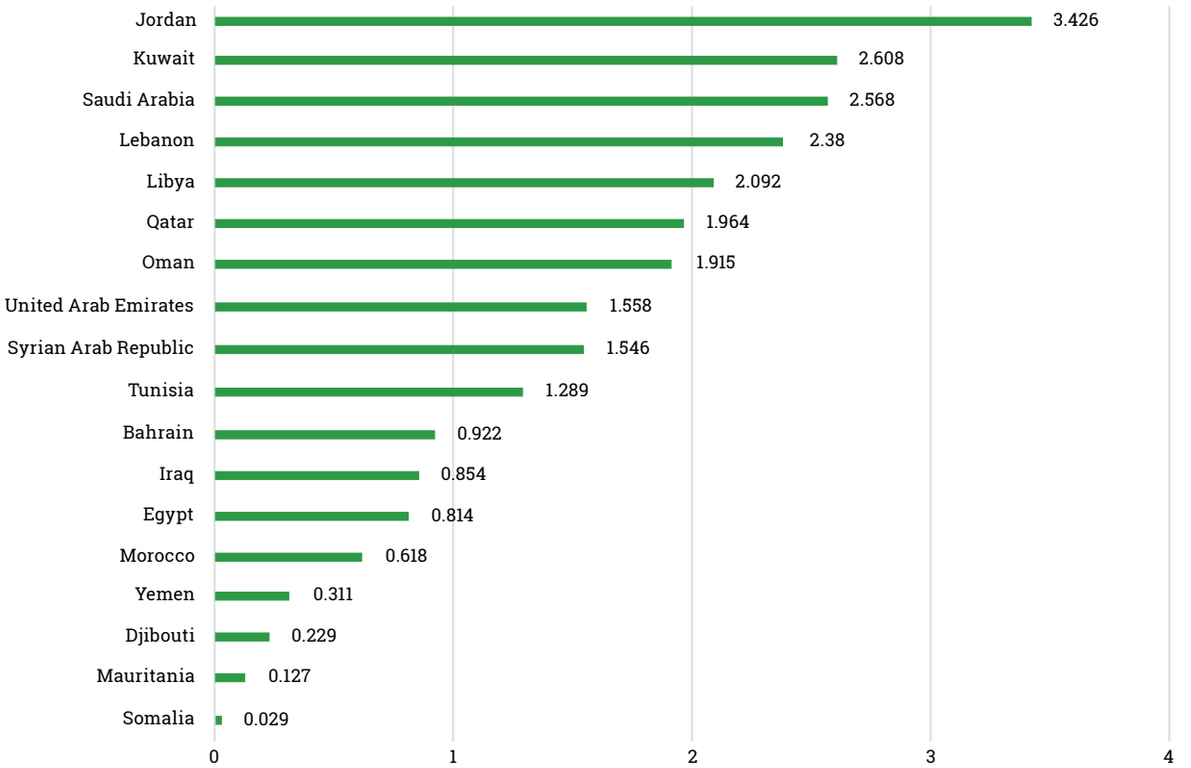
Note: Data are from various years as follows: Mauritania (2009); Djibouti, Egypt, Iraq, Lebanon, Libya, Morocco, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, the United Arab Emirates, Yemen (2014); Bahrain, Jordan, Kuwait (2015); Oman, Tunisia (2016).

Health worker density of Pharmacists (per 1,000 population)



Note: Data are from various years as follows: Mauritania, Morocco (2009); Tunisia (2010); Djibouti, Egypt, Iraq, Kuwait, Lebanon, Libya, Qatar, Saudi Arabia, Syrian Arab Republic, the United Arab Emirates, Yemen (2014); Bahrain, Jordan (2015); Oman (2016).

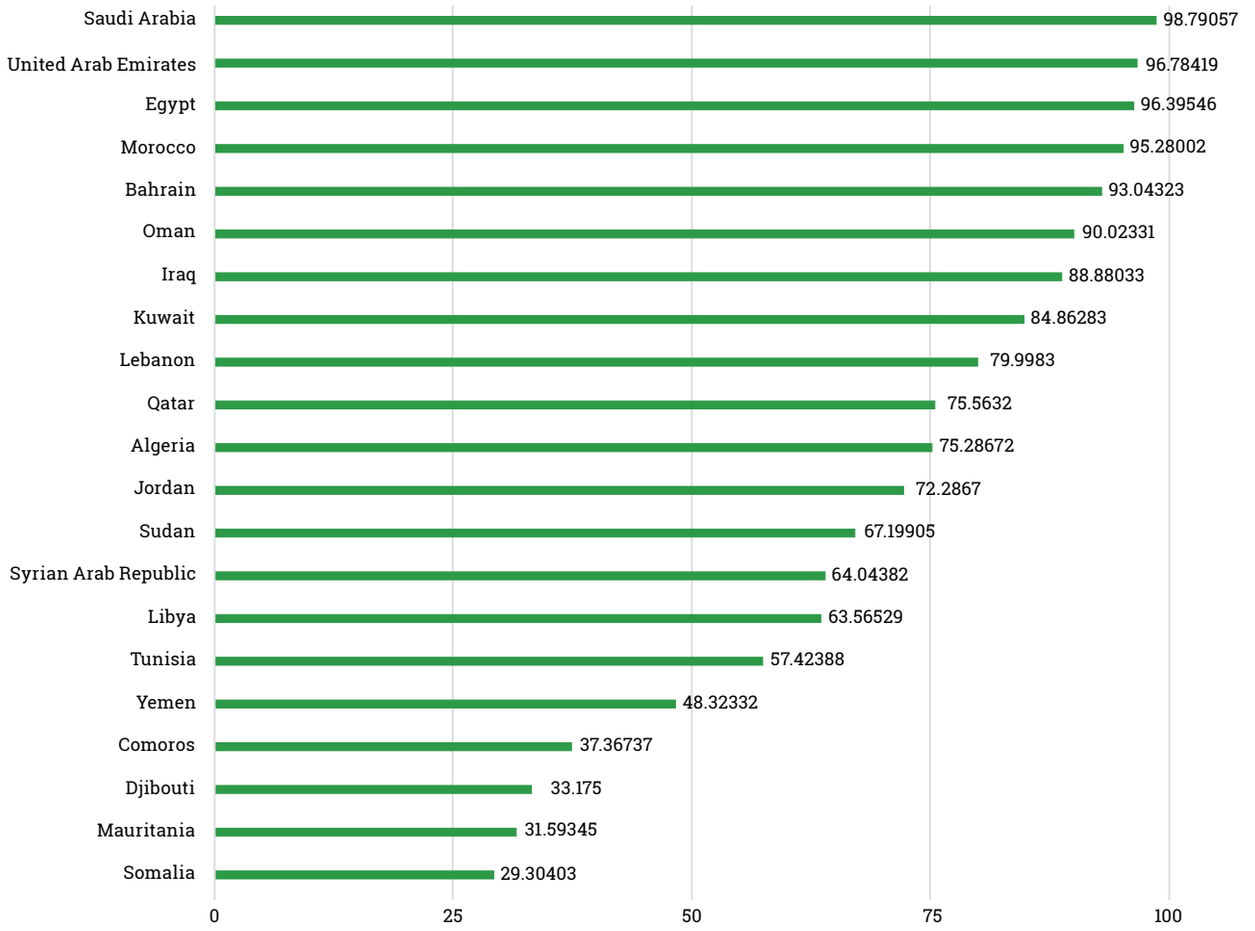
Health worker density of Physicians (per 1,000 population)



Note: Data are from various years as follows: Mauritania (2009); Djibouti, Egypt, Iraq, Lebanon, Libya, Morocco, Qatar, Saudi Arabia, Somalia, Syrian Arab Republic, United Arab Emirates, Yemen (2014); Bahrain, Jordan, Kuwait, Tunisia (2015); Oman (2016).

Figure 3.24 Indicator 3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness

Average of 13 International Health Regulations (IHR) core capacities (percentage)



Note: All data are from 2017.

Annex to chapter 4

1. Data for SDG 4

SDG 4 comprises 10 targets and a total of 11 indicators (six of which contain multiple subindicators). Of these indicators, two are tier I, five are tier II, and two are tier III for which data are not available, as the indicators are still in the process of methodological definition. In addition, one of the indicators (4.1.1) is labeled as "Tier III (a)/Tier II (b,c)" as it measures the "Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex" and indicator (4.5.1) is labeled as "Tier I/II/III depending on indices" given that it includes different types of parity indices for education indicators, including female/male, rural/urban, and bottom/top wealth quintiles, among others, whose classification based on the level of advancement in methodology setting and data availability varies from one to another.

The United Nations Statistics Division provides data sets for a total of 10 indicators: 4.1.1 - Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex; 4.2.1 - Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex; 4.2.2 - Participation rate in organized learning (one year before the official primary entry age), by sex; 4.3.1 - Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex; 4.4.1 - Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill; 4.5.1 - Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated; 4.6.1 - Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex; 4.a.1 - Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions); 4.b.1 - Volume of official development assistance flows for scholarships by sector and type of study; and 4.c.1 - Proportion of teachers in: (a) pre-primary; (b)primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country.

The data used in the analysis of SDG 4 was downloaded on 9 August 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 4.b.1 (Total official flows for scholarships, by recipient countries (millions of constant 2017 United States dollars)) is replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total Arab region's population and at least the third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit five of the six series of 4.1.1, indicators 4.2.1, 4.3.1, 4.4.1 and 4.6.1, 43 of the 50 series of 4.5.1, 20 of the 21 series of 4.a.1, and two of the five series of 4.c.1.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 4.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 4.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
4.1.1 (Proportion of children at the end of lower secondary achieving at least a minimum proficiency level in mathematics (percentage))	79 (12)	2015
	2 (0)	2012
	6 (2)	2011
	6 (0)	2009
4.2.2 (Participation rate in organized learning (one year before the official primary entry age) (percentage))	77 (8)	2016
	44 (1)	2015
	6 (1)	2014
	5 (3)	2013
	7 (0)	2012
	3 (0)	2011
	4 (1)	2010
	1 (0)	2009
4.5.1 (Gender parity index for achievement in mathematics at the end of lower secondary)	79 (12)	2015
	2 (0)	2012
	6 (2)	2011
	6 (0)	2009
4.5.1 (Gender parity index of trained teachers in pre-primary education)	37 (5)	2016
	16 (2)	2015
	4 (0)	2014
	5 (1)	2013
	10 (1)	2012
	7 (0)	2011
	4 (0)	2010
	2 (2)	2009

4.5.1 (Gender parity index of trained teachers in primary education)	60 (9)	2016
	22 (3)	2015
	4 (0)	2014
	6 (1)	2013
	10 (0)	2012
	3 (0)	2011
	4 (0)	2010
	5 (1)	2009
4.5.1 (Language test parity index for students' achievement in mathematics at the end of lower secondary)	77 (12)	2015
	3 (0)	2012
	6 (2)	2011
	6 (0)	2009
4.5.1 (Gender parity index for students' participation rate in organized learning (one year before the official primary entry age))	77 (8)	2016
	41 (1)	2015
	6 (1)	2014
	6 (3)	2013
	7 (0)	2012
	3 (0)	2011
	4 (1)	2010
	1 (0)	2009
4.5.1 (Rural to urban parity index for students' achievement in mathematics at the end of lower secondary)	74 (12)	2015
	2 (0)	2012
	7 (2)	2011
	6 (0)	2009
4.5.1 (Low to high socio-economic parity status index for students' achievement in mathematics at the end of lower secondary)	78 (12)	2015
	1 (0)	2012
	6 (2)	2011

4.a.1 (Proportion of schools with access to electricity in the upper secondary (percentage))	68 (7)	2016
	8 (1)	2015
	2 (0)	2013
	3 (0)	2012
	4 (2)	2011
	18 (0)	2010
	3 (0)	2009
4.b.1 (Total official flows for scholarships, by recipient countries)	1 (0)	2015
	1 (0)	2013
	1 (0)	2012
	4 (1)	2010
4.c.1 (Proportion of teachers in pre-primary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre- service or in-service required for teaching at the relevant level in a given observation (percentage))	49 (8)	2016
	16 (2)	2015
	8 (0)	2014
	6 (1)	2013
	13 (1)	2012
	6 (0)	2011
	3 (0)	2010
	2 (1)	2009
4.c.1 (Proportion of teachers in primary education who have received at least the minimum organized teacher training... (percentage))	60 (9)	2016
	23 (3)	2015
	5 (0)	2014
	7 (1)	2013
	10 (0)	2012
	4 (0)	2011
	4 (0)	2010
	7 (1)	2009

4.c.1 (Proportion of teachers in upper secondary education who have received at least the minimum organized teacher training... (percentage))	26 (5)	2016
	13 (2)	2015
	6 (2)	2014
	4 (2)	2013
	9 (0)	2012
	1 (0)	2011
	4 (0)	2010
	6 (1)	2009

Of the seven remaining series of 4.5.1, five address students and two are related to teachers. Therefore, we visualize this indicator using two bar charts, since each chart allows us to analyse its series separately while representing them together: the first chart includes the five parity indices for students, which are on the same scale, range and unit, while the second includes the two parity indices for teachers which are also on the same scale, range and unit. We note that, one of the parity indices for students, "Language test parity index for students' achievement in mathematics at the end of lower secondary", is not clearly and sufficiently defined in the corresponding data set and metadata. No information is provided about it by the original source of the data (mostly the OECD) or the data compiler (UNESCO). Nevertheless, keeping in mind that the indicator/target that this series belongs to aims to measure inequality in education and referring to major available reports that tackle this issue, we assume that this series measures the ratio of the level of achievement in mathematics for students who study in a foreign language to that for students who study in their native language; as the latter group would be better off compared to the former. Accordingly, given that a parity index represents the ratio of the indicator's value for one group to that of the other, where the more disadvantaged group is placed in the numerator and where 1 indicates parity between the two groups, we therefore assume that this series is also on the same scale, range, and unit as the rest of the parity indices under indicator 4.5.1.

Similarly, we visualize and analyse the three remaining series if 4.c.1 separately but in the same bar chart since they are very similar and only address teachers in different education levels. This is also possible since they are on the same scale, range and unit, as well.

As for indicator 4.b.1 (Total official flows for scholarships, by recipient countries), the main data set provided by the United Nations Statistics Division only includes recipient countries/territories and omits the donor countries/territories that then take missing values which are considered as zeros when the series' regional and global aggregates are calculated using a total sum. Hence, we consider that 22 instead of 17 Arab countries are covered by data for this indicator, knowing that five of the GCC countries are donor countries whose missing data values in the original data set are equivalent to zeros.

This leaves us with 14 integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 4.1.

Box 4.1	Summary list of preserved and examined indicators/subindicators

- Indicator 4.1.1 – 1 series out of 6 - Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex
- Indicator 4.2.2 – Participation rate in organized learning (one year before the official primary entry age), by sex
- Indicator 4.5.1 – 7 series out of 50 - Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated
- Indicator 4.a.1 – 1 series out of 21 - Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) handwashing facilities (as per the WASH indicator definitions) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)
- Indicator 4.b.1 – Volume of official development assistance flows for scholarships by sector and type of study
- Indicator 4.c.1 – 3 series out of 5 - Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country

However, we lose the ability to determine the region's position on the rest of the targets, indicators and subindicators as noted in box 4.2, including those in table 4.3 on targets, indicators, tiers and data availability in Arab countries for SDG 4, but that do not have sufficient data.

Box 4.2	Summary list of omitted targets

- 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
- 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
- 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

Annex 4.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of 4.b.1 are calculated using a total sum. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the indicators/series whose global, regional and subregional aggregates are weighted averages: Total enrolment in lower secondary education in 2014; Total school age population - one year before the official primary entry age in 2016; Total number of teachers in primary education in 2016; Total number of teachers in pre-primary education in 2016; Total GDP (current United States dollars) for the year 2016; and Total number of teachers in secondary general education in 2016. The data of all the weighting variables, except for total GDP, are taken from the database of the UNESCO Institute for Statistics, whereas the data on total GDP (current United States dollars) for the year 2016 is taken from the World Development Indicators DataBank. The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

For the remaining series of 4.1.1 and for four of the five parity indices for students that are remaining under 4.5.1, what we actually need as a weighting variable is the total number of students "at the end of lower secondary education". However, since no data were found on this specific variable, we use the total enrolment "in lower secondary education" as a weighting variable instead. The five series in question actually need data for the used weighting variable in 2015, but the data of this variable in 2015 is poor and has a weak overlap (in terms of data availability) with the data of the series that we need to evaluate, which could reduce our final data coverage significantly when computing the global, regional and subregional aggregates. Therefore, we use the data for total enrolment in lower secondary education in 2014, which is relatively richer, to calculate the weighting averages of each of these five series, as this makes us lose only three Arab countries instead of six. We are also sometimes obliged to make bigger compromises by replacing the weighting variable itself with a proxy one such as in the case of each of the remaining series of 4.a.1 (Proportion of schools with access to electricity in the upper secondary (percentage)) and the third remaining series of 4.c.1 (Proportion of teachers in upper secondary education who have received at least the minimum organized teacher training...(percentage)). For series of 4.a.1, we ideally need to weight by the total number of schools in upper secondary education, but no data were found for this variable, and no data were found for the total number of schools (in general). Therefore, we use "Total government expenditures on upper secondary education" in 2016 or "Total government expenditures on education" (in general) in 2016, as a proxy weighting variable. However, none of them could solve the issue since they both also have poor data availability (only covering 49 countries worldwide) and poor overlap with the data of the series that we need to evaluate. Even trying to use their data for another year or to substitute their data across years is not enough to solve this issue. Hence, we use "Total GDP (current United States dollars) for the year 2016" as a proxy weighting variable, since a country's total GDP is very representative of its government expenditures on education (in all its levels, including the upper secondary one) which – in turn – can considerably affect the proportion of schools with access to electricity in this country. This is also only one of the channels through which total GDP affects our indicator. Using "Total GDP (current United States dollars) for the year 2016" solved the issue as it preserved all the 11 Arab countries in the calculated global, regional and subregional aggregates, despite the weighting. As for the series of 4.c.1, we ideally need to weight by the total number of teachers in upper secondary education in 2016 (from the UNESCO database). Similarly, since the data coverage for this variable is poor and so is its overlap with the data of the series to be evaluated, we use the total number of teachers in secondary general education in 2016, which is richer in data, as a weighting variable instead. This allows us to preserve eight Arab countries (instead of seven Arab countries or fewer) out of 12, amounting to one third of the Arab countries and half the total Arab population.

Finally, we note again that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us, despite some efforts and compromises to mitigate this problem. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies for the remaining series of 4.1.1 and for four of the five parity indices for students that are remaining under 4.5.1, where 11 Arab countries out of 14 are covered after weighting. The same applies for the two remaining parity indices for teachers under 4.5.1, where 10 Arab countries out of 11 are covered after weighting for the one on teachers in pre-primary education and 13 Arab countries out of 14 are covered after weighting for the one on teachers in primary education.

This also applies for the three remaining series of 4.c.1, where 10 Arab countries out of 13 are covered after weighting for the one on teachers in pre-primary education, 13 Arab countries out of 14 are covered after weighting for the one on teachers in primary education, and 8 Arab countries out of 12 are covered after weighting for thwwwwwwcountry-year graphs include all the Arab countries that have data for the evaluated series/indicator, regardless of the data availability of the weighting variable.

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. The aim of target 4.1 is to "ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes, by 2030", so for 4.1.1 we consider the target value as 100 per cent of children at the end of lower secondary achieving at least a minimum proficiency level in mathematics. The aim of target 4.2 is to "ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education, by 2030", so for 4.2.2 we consider the target value as a 100 per cent participation rate in organized learning (one year before the official primary entry age). The aim of target 4.5 is to "eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations, by 2030", so for 4.5.1 we set the target value as 1 for each of the seven parity indices (for students and for teachers). Finally, the aim of target 4.a is to "build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all", and for 4.a.1 the target value is set as 100 per cent of schools with access to electricity in the upper secondary education level. However, for 4.b.1 and 4.c.1, it is not possible to infer the official desired target values from the target definitions, and thus they are not shown.

Of the indicators that we can use, only three have available sex disaggregated data: 4.1.1, 4.2.2 and 4.c.1. We construct a female-to-male ratio for each of 4.2.2 (which comprises one series), the remaining series of 4.1.1, and the three remaining series of 4.c.1, and again we check for data availability. We use the same data substitution process on these ratios to get the optimal data availability in 2017 that is parallel to what we could get for their respective series in their aggregated forms (table 4.2).

Table 4.2 Data substitution scheme for female-to-male ratios of selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
4.1.1 (Proportion of children at the end of lower secondary achieving at least a minimum proficiency level in mathematics (percentage))	79 (12)	2015
	2 (0)	2012
	6 (2)	2011
	6 (0)	2009
4.2.2 (Participation rate in organized learning (one year before the official primary entry age) (percentage))	77 (8)	2016
	41 (1)	2015
	6 (1)	2014
	6 (3)	2013
	7 (0)	2012
	3 (0)	2011
	4 (1)	2010
	1 (0)	2009

4.c.1 (Proportion of teachers in pre-primary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre- service or in-service required for teaching at the relevant level in a given observation (percentage))	37 (5)	2016
	16 (2)	2015
	4 (0)	2014
	5 (1)	2013
	10 (1)	2012
	7 (0)	2011
	4 (0)	2010
	2 (2)	2009
4.c.1 (Proportion of teachers in primary education who have received at least the minimum organized teacher training... (percentage))	60 (9)	2016
	22 (3)	2015
	4 (0)	2014
	6 (1)	2013
	10 (0)	2012
	3 (0)	2011
	4 (0)	2010
	5 (1)	2009
4.c.1 (Proportion of teachers in upper secondary education who have received at least the minimum organized teacher training... (percentage))	24 (5)	2016
	14 (2)	2015
	7 (2)	2014
	4 (2)	2013
	9 (0)	2012
	1 (0)	2011
	3 (0)	2010
	6 (1)	2009

Concerning the first preserved series of 4.c.1 (Proportion of teachers in preprimary education who have received at least the minimum organized teacher training...), we note that the original data set provided by the United Nations Statistics Division assigns a zero for the male values of each of Saudi Arabia and the Syrian Arab Republic over the different years, while the respective female and aggregated values are economically significant, with some being 100 per cent. By referring to the original source of the data (UNESCO), we realize that these zeros should rather be substituted by missing values as they are replaced by the original source with "a" or "n", indicating a "non-applicable category or a negligible or null number". We therefore consider these zeros as missing values and thus lose the Syrian Arab Republic and Saudi Arabia from the observations which have a female-to-male ratio for the series in question.

We also note that the female-to-male ratio corresponding to indicator 4.2.2 has one value that is equal to 431.8 per cent and that pertains to Niue, being the only value which exceeds 200 per cent. As this can bias our results and lead to overestimating the average female-to-male ratios for the World and Oceania, we replace this value with the ceiling of 200. Based on the same rationale, we also cap the ratios of the first two preserved series of 4.c.1 to 200 by replacing values greater than 200 per cent (632.5 per cent for Anguilla and the 221 per cent for Kyrgyzstan) with the ceiling value.

We calculate the global, regional and subregional aggregates for each of the above-mentioned five ratios, following the same calculation methods used for the respective series/indicators in their aggregated forms (i.e. total sum or weighted average). When a weighted average is used and the data availability of the weighting variable undermines the data coverage of the of series/indicator in its aggregated form, the data coverage of sex disaggregated ratio of this series/indicator is undermined in the exact same way by the data availability of the weighting variable.

Table 4.3 Targets, indicators, tiers and data availability for Arab countries – SDG 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all)

Target	Indicator	Number of subindicators	Tier	Data availability*
4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	4.1.1 Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex	1 chosen out of 6	Tier III (a)/ Tier II (b,c)	14
4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex	(Dropped) 1	Tier III	x
	4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex	1 chosen out of 1	Tier I	15
4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	(Dropped) 1	Tier II	x
4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	(Dropped) 9	Tier II	x

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated	7 chosen out of 50	Tier I/II/III depending on indices	14, 14, 15, 14, 14, 11, 14
4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex	(Dropped) 2	Tier II	x
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment	(No data)	Tier III	x
4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	4.a.1 Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)	1 chosen out of 21	Tier II	11
4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries	4.b.1 Volume of official development assistance flows for scholarships by sector and type of study	1 chosen out of 1	Tier I	22

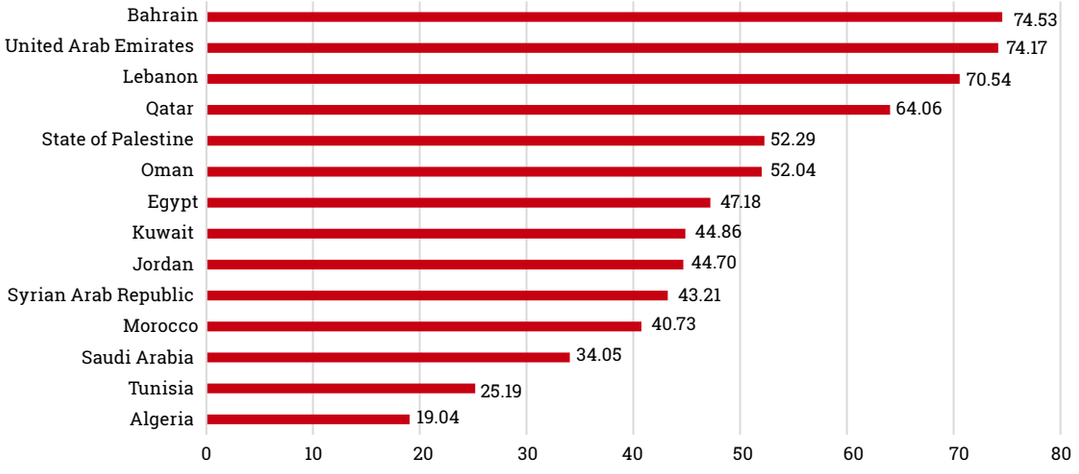
4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4.c.1 Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country	3 chosen out of 5	Tier II	13, 14, 12

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
We note that the weighting variables sometimes prevent us from evaluating the series/indicator using its full data that is available/provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the weighting variable's data availability.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 4.1 Indicator 4.1.1 - Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex.

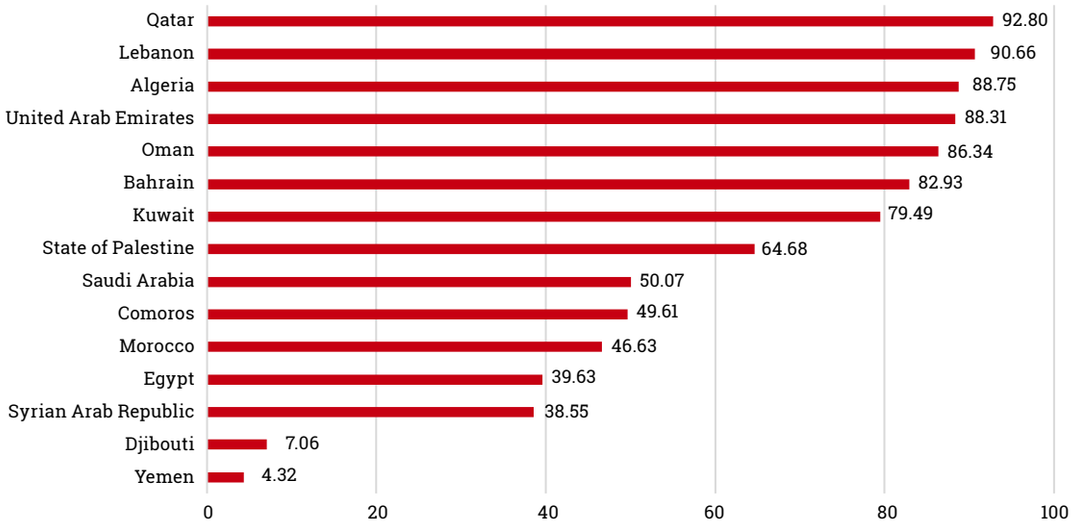
Proportion of children at the end of lower secondary education achieving at least a minimum proficiency level in mathematics (percentage)



Note: All data are from 2015 apart from the State of Palestine and Syrian Arab Republic (2011).

Figure 4.2 Indicator 4.2.2 - Participation rate in organized learning (one year before the official primary entry age), by sex

Participation rate in organized learning (one year before the official primary entry age) (percentage)



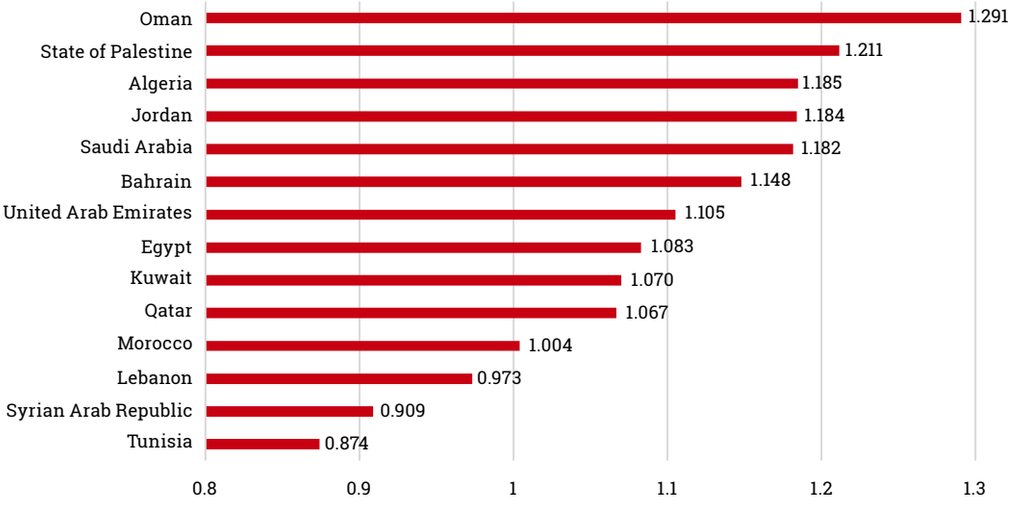
Note: Data are from various years as follows: Algeria (2010), Syrian Arab Republic, United Arab Emirates, Yemen (2013), Comoros (2014), State of Palestine (2015), Bahrain, Egypt, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia (2016), Djibouti (2017).

Figure 4.3 Seven series of indicator 4.5.1 - Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated

Parity indices for education indicators that can be disaggregated for students and for teachers

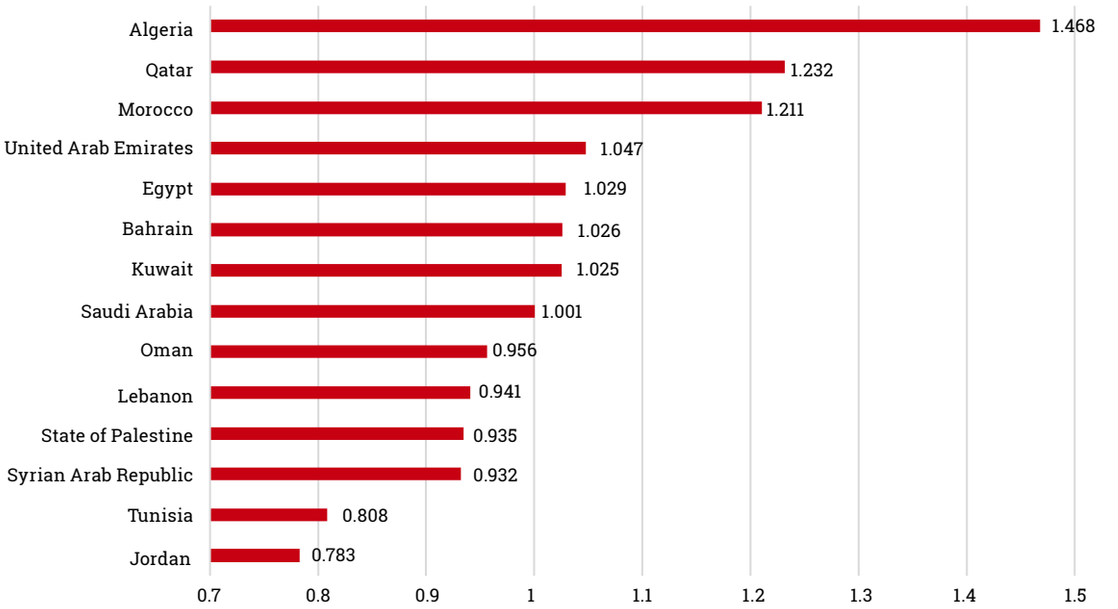
Students

Gender parity index for achievement in mathematics at the end of lower secondary



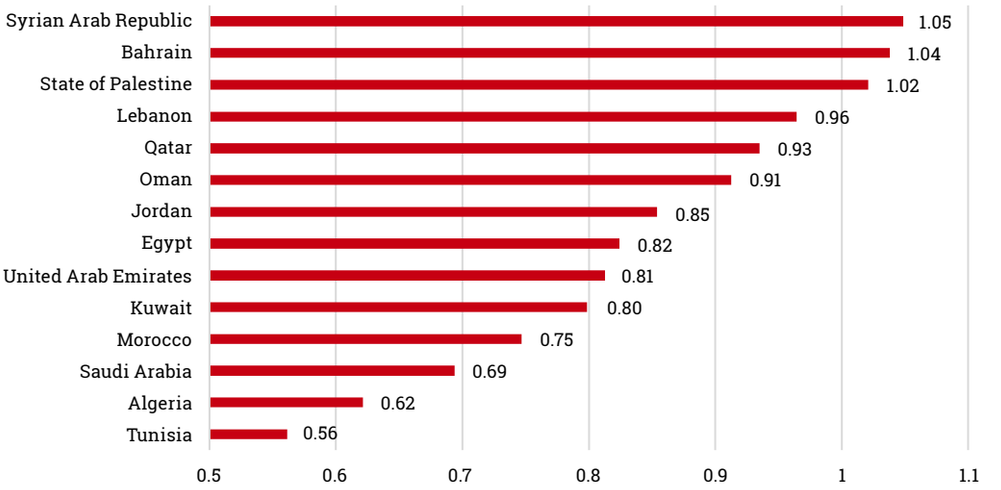
Note: Data are for 2015 apart from State of Palestine and Syrian Arab Republic (2011).

Language test parity index for achievement in mathematics at the end of lower secondary



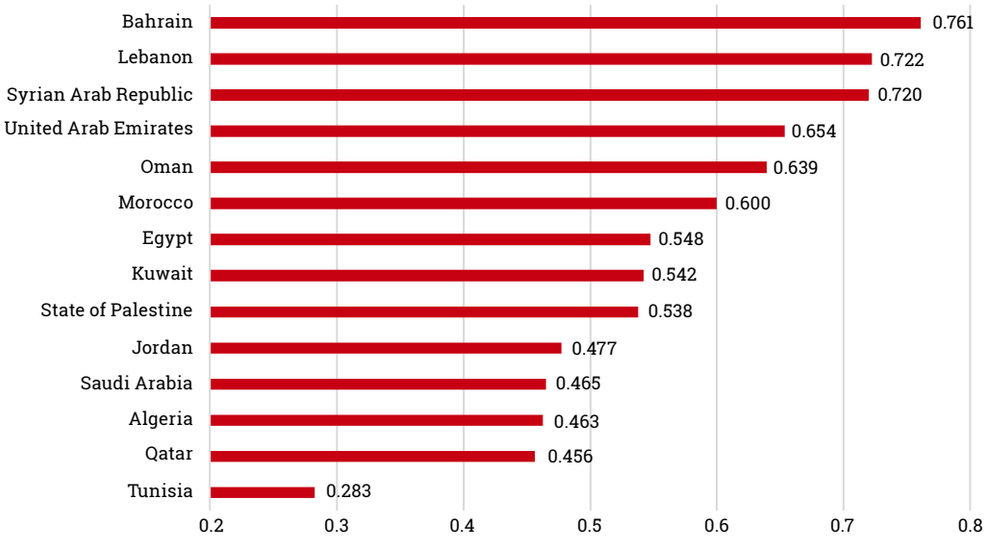
Note: Data are for 2015 apart from State of Palestine and Syrian Arab Republic (2011).

Rural-to-urban parity index for achievement in mathematics at the end of lower secondary



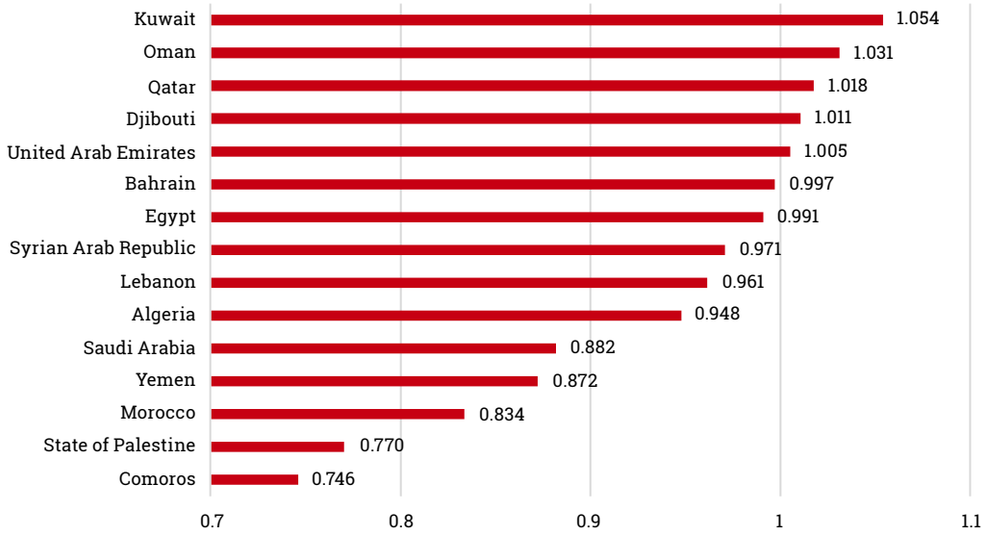
Note: Data are for 2015 apart from State of Palestine and Syrian Arab Republic (2011).

Low to high socioeconomic parity status index for achievement in mathematics at the end of lower secondary



Note: Data are for 2015 apart from State of Palestine and Syrian Arab Republic (2011).

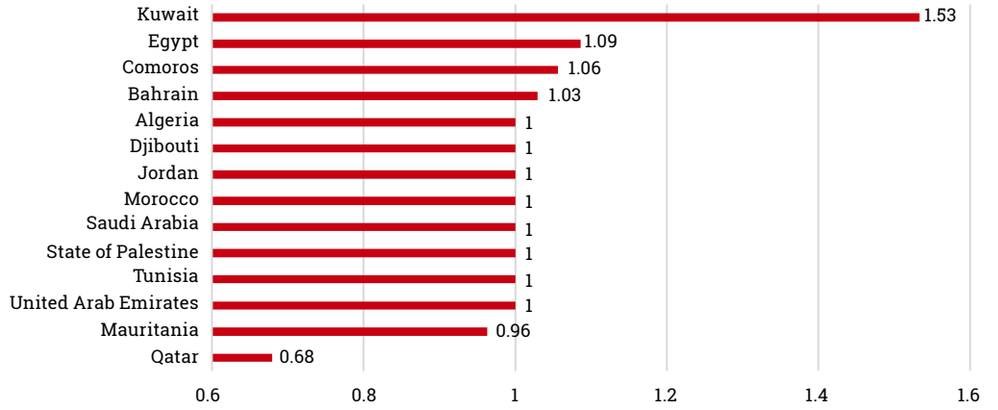
Gender parity index for participation rate in organized learning one year before the official primary entry age



Note: Data are from various years as follows: Algeria (2010), Syrian Arab Republic, United Arab Emirates, Yemen (2013), Comoros (2014), State of Palestine (2015), Bahrain, Egypt, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia (2016), Djibouti (2017).

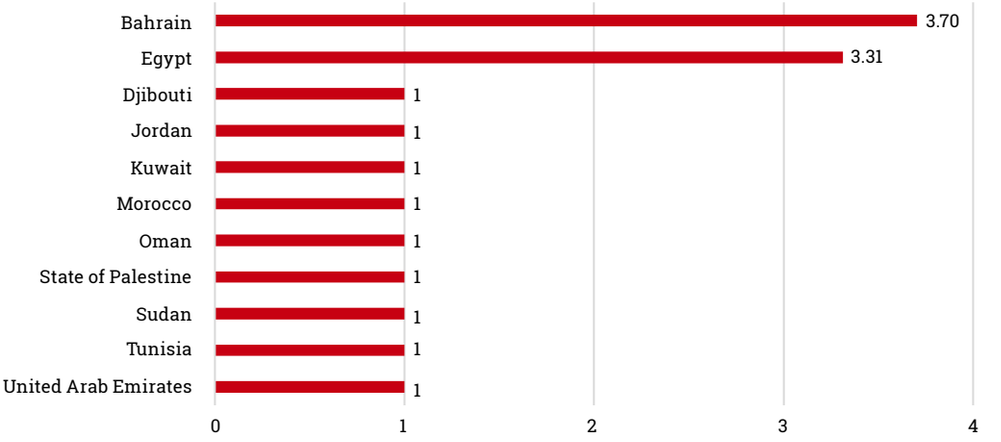
Teachers

Gender parity index of trained teachers in primary education



Note: Data are from various years as follows: Qatar (2009), Comoros (2013), Algeria, Djibouti, Kuwait (2015), Bahrain, Egypt, Jordan, Mauritania, Morocco, Saudi Arabia, State of Palestine, Tunisia, United Arab Emirates (2016).

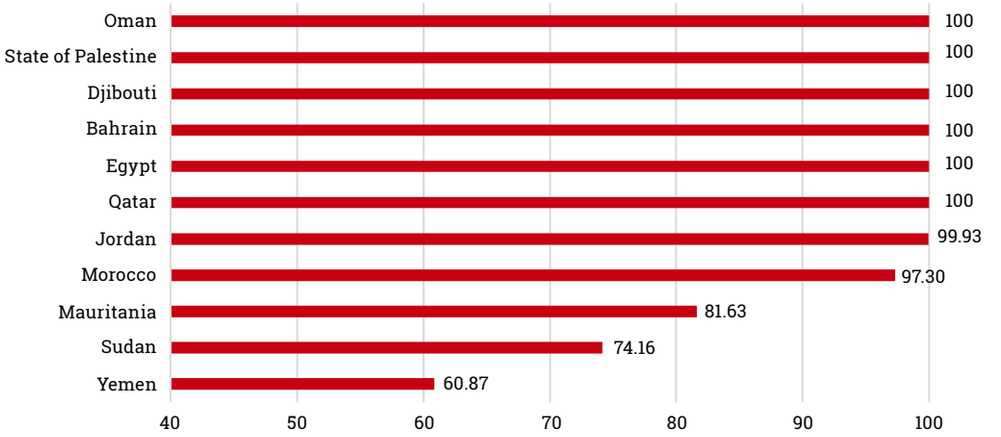
Gender parity index of trained teachers in pre-primary education



Note: Data are from various years as follows: Djibouti, Kuwait (2009), Morocco (2012), Jordan (2013), State of Palestine, Sudan (2015), Bahrain, Egypt, Oman, Tunisia, United Arab Emirates (2016).

Figure 4.4 Indicator 4.a.1 - Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)

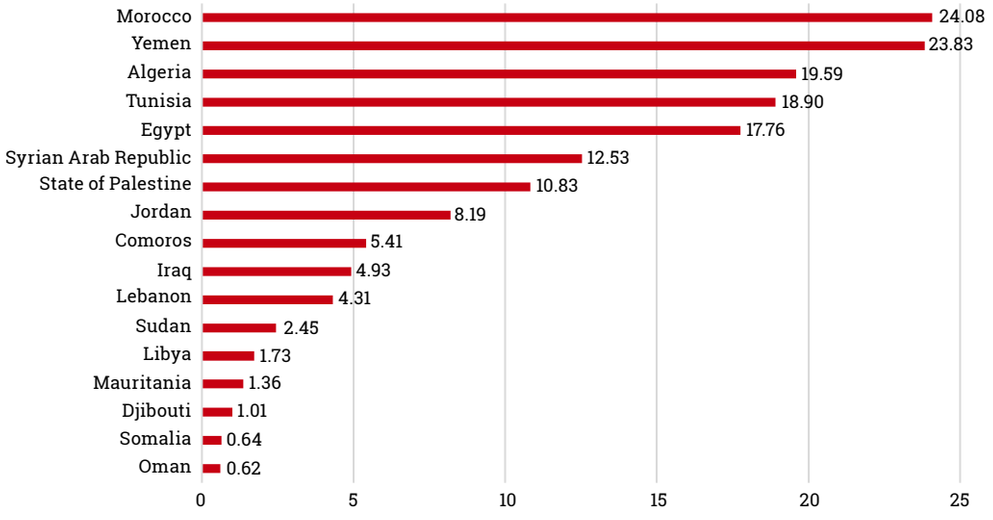
Proportion of schools with access to electricity in the upper secondary (percentage)



Note: Data are from various years as follows: Jordan, Oman (2011), Sudan (2015), Bahrain, Egypt, Mauritania, Morocco, Qatar, State of Palestine, Yemen (2016) Djibouti (2017).

Figure 4.5 Indicator 4.b.1 - Volume of official development assistance flows for scholarships by sector and type of study

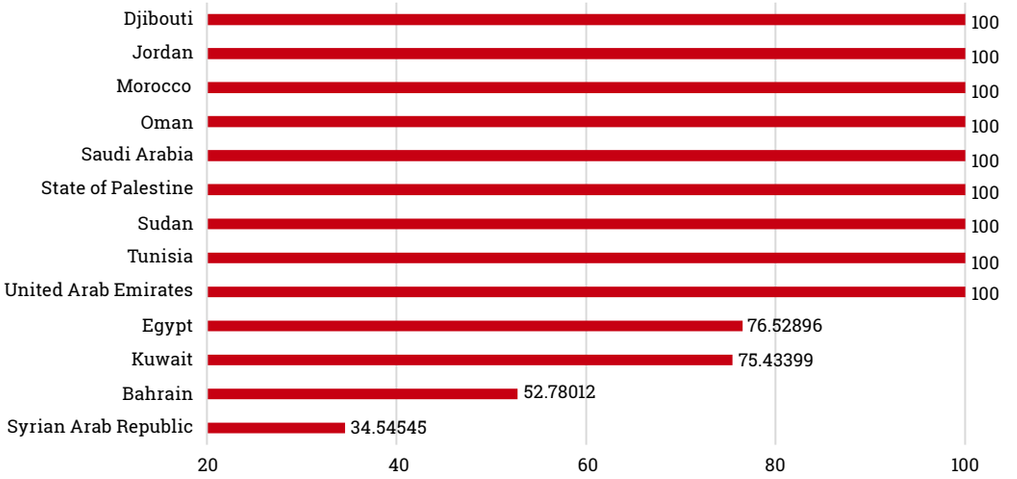
Total official flows for scholarships, by recipient countries (millions of constant 2017 United States dollars)



Note: All data are from 2017 apart from Oman (2010).

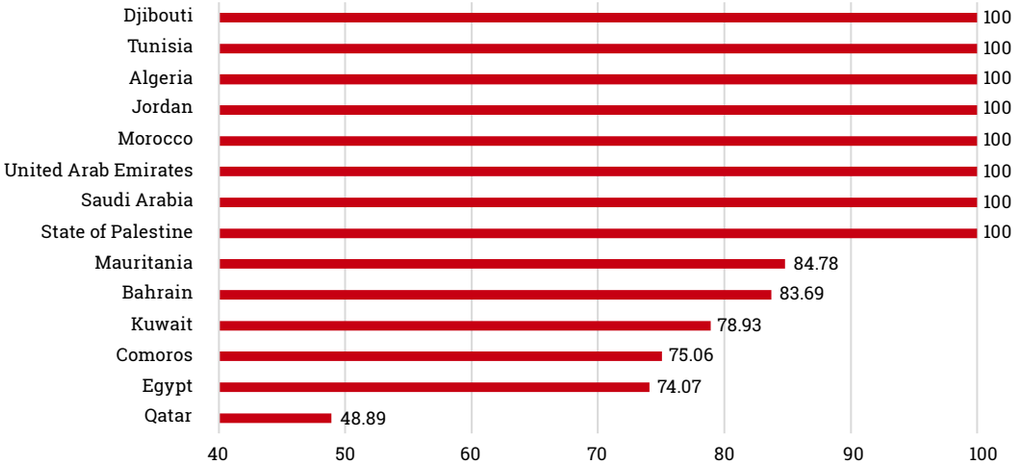
Figure 4.6 Indicator 4.c.1 - Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country

Pre-primary teachers (percentage)



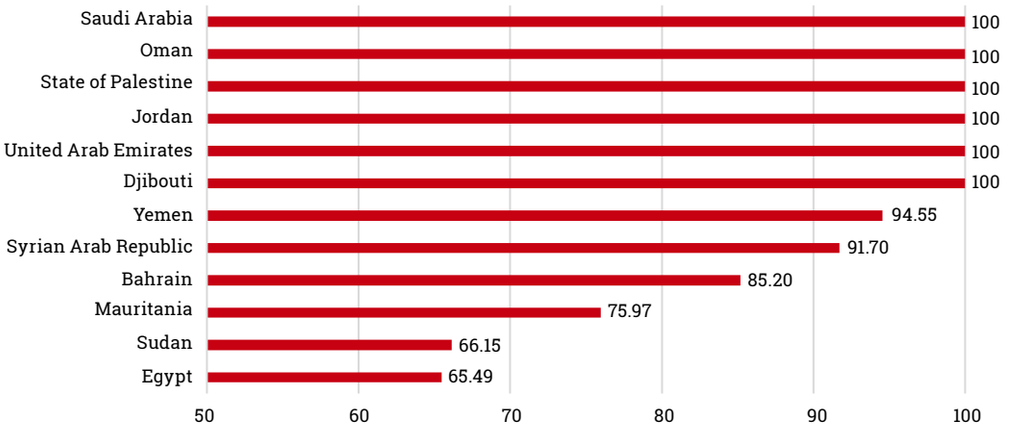
Note: Data are from 2016 apart from Djibouti (2009), Morocco (2012) Syrian Arab Republic (2013), Kuwait and Sudan (2015).

Primary teachers (percentage)



Note: Data are from 2016 apart from Qatar (2009), Comoros (2013), Algeria, Djibouti and Kuwait (2015).

Upper secondary teachers (percentage)



Note: Data are from various years as follows: Oman (2009) Syrian Arab Republic, Yemen (2013), Jordan, Saudi Arabia (2014), Djibouti, Sudan (2015), Bahrain, Egypt, Mauritania, State of Palestine, United Arab Emirates (2016).

Annex to chapter 5

1. Data for SDG 5

SDG 5 comprises nine targets and a total of 14 indicators (four of which contain multiple subindicators). Of these indicators, two are tier I, 10 are tier II, and one is tier III for which data are not available, as the indicator is still in the process of methodological definition. In addition to these, indicator 5.5.1 is labeled as "tier I (a)/tier II (b)" given that it measures the "Proportion of seats held by women in (a) national parliaments and (b) local governments".

The United Nations Statistics Division provides data sets for a total of eight indicators: 5.2.1 - Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age; 5.3.1 - Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18; 5.3.2 - Proportion of girls and women aged 15–49 years who have undergone female genital mutilation/cutting, by age; 5.4.1 - Proportion of time spent on unpaid domestic and care work, by sex, age and location; 5.5.1- Proportion of seats held by women in (a) national parliaments and (b) local governments; 5.5.2- Proportion of women in managerial positions; 5.6.1 - Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care; and 5.b.1 - Proportion of individuals who own a mobile telephone, by sex.

Data used in SDG 5 analysis was downloaded on 31 July 2018. After the country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, no large differences were found, and none of the data series needed to be replaced.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 5.2.1, 5.3.2, 5.4.1 and 5.6.1, as well as the second series of 5.5.2 (Proportion of women in senior and middle management positions).

Indicator 5.5.1, in particular, comprises three subindicators: Proportion of seats held by women in national parliaments (percentage); Number of seats held by women in national parliaments; and Number of seats in national parliaments. The first subindicator is actually the ratio of the second subindicator to the third, multiplied by 100. Therefore, we only keep the first subindicator which is also the most significative and representative, and we omit the other two.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 5.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 5.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
5.3.1 (Proportion of women aged 20–24 years who were married or in a union before age 15) and (Proportion of women aged 20–24 years who were married or in a union before age 18)	10 (0)	2016
	18 (1)	2015
	24 (3)	2014
	16 (2)	2013
	18 (4)	2012
	10 (1)	2011

	10 (0)	2010
	4 (1)	2009
5.5.2 (Proportion of women in managerial positions)	71 (3)	2016
	18 (2)	2015
	14 (2)	2014
	8 (0)	2013
	6 (1)	2012
	2 (0)	2011
	7 (1)	2010
	5 (0)	2009
5.b.1 (Proportion of individuals who own a mobile telephone, by sex)	26 (6)	2016
	13 (1)	2015
	5 (1)	2014
	1 (1)	2013

No substitution was made for the preserved series of 5.5.1 (Proportion of seats held by women in national parliaments) over the considered time interval since the corresponding data are complete for our base year (2017).

This leaves us with four integral indicators/subindicators with which we can assess the position of the region, as noted in box 5.1.

Box 5.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 5.3.1 – Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18
- Indicator 5.5.1 – 1 series out of 3 – Proportion of seats held by women in (a) national parliaments and (b) local governments
- Indicator 5.5.2 – 1 series out of 2 – Proportion of women in managerial positions
- Indicator 5.b.1 – Proportion of individuals who own a mobile telephone, by sex

However, we lose the ability to determine the region's position on the rest of the targets, indicators and subindicators as noted in box 5.2, including those shown in table 5.3 on targets, indicators, tiers and data availability for SDG 5, but that do not have sufficient data.

Box 5.2	**Summary list of omitted targets**

- 5.1 End all forms of discrimination against all women and girls everywhere
- 5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- 5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
- 5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
- 5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
- 5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

Furthermore, we visualize and analyse the two subindicators of 5.3.1 (Proportion of women aged 20–24 years who were married by age 15 and Proportion of women aged 20–24 years who were married by age 18) using a stacked bar chart since they measure different intensities of the child marriage problem which are worth evaluating separately, knowing that the subindicators are also on the same scale, range and unit. Moreover, we note that the subindicator on marriage by age 18 includes the subindicator on marriage by age 15 and the stacked bar chart is constructed accordingly, where the full bars correspond to the averages of "marriage by age 18" while the averages of "marriage by age 15" are only shown as part of these full bars/ total averages.

Concerning 5.b.1, we note that it covers only 46 countries including, however, nine Arab countries which satisfy our criteria for data availability. Consequently, the averages of many regions are derived from the data of very few countries (e.g. two countries for Central and Southern Asia and four countries for sub-Saharan Africa), Oceania has no available data, and the averages of each of the conventional subregional groupings - the Maghreb, Mashreq and Arab LDCs - are derived solely from the data of a single country.

Annex 5.2 for a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates are calculated as weighted means. The method of aggregation, in general, is chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The following weights were actually used for the series/indicators whose global, regional and subregional aggregates are weighted averages: Total Population in 2015 (World Population Prospects 2017), Total population of women aged 20–24 years in 2015 (World Population Prospects 2017), Total number of parliament seats in 2015 (United Nations Statistics Division), and Total number of managers, using 2015 values (ILO, United Nations Statistics Division). All the gender ratio aggregates are weighted with their respective weights as well. The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We calculate the world, regional and subregional aggregate for each indicator and include the target value – when available – to facilitate comparability. For target 5.3, whose aim is to "Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation", we consider the target value as 0 per cent of women aged 20–24 years who were married by age 15 and 0 per cent who were married by age 18. However, for targets 5.5 and 5.b, it is not possible to infer the official desired target values and thus they are not shown.

Indicators 5.3.1, 5.5.1 and 5.5.2, as well as most of the indicators that were omitted on account of poor data availability, only address females since females are the most vulnerable and marginalized gender group around which this chapter revolves. Of the omitted indicators, some have sex disaggregated data, but the data are insufficient for the indicator to be kept and evaluated.

Nonetheless, 5.b.1 has sex disaggregated data with sufficient availability, especially for Arab countries. Thus, we construct the female-to-male ratio for this indicator, and again check for the satisfaction of our criteria for data availability. There are only 39 countries globally, including nine Arab countries, that satisfy our criteria for data availability. We then undertake the same data substitution process on this ratio in order to get the optimal data availability in 2017 that is parallel/almost parallel to what we could get for the respective indicator in its aggregated form (table 5.2).

Table 5.2 Data substitution scheme for female-to-male ratios of selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
5.b.1 (Proportion of individuals who own a mobile telephone, by sex)	23 (6)	2016
	12 (1)	2015
	2 (1)	2014
	1 (1)	2013

We calculate the regional and subregional averages for this ratio and we reiterate our note regarding this indicator's relatively poor data availability.

Table 5.3 Targets, indicators, tiers and data availability for Arab countries – SDG 5 (Achieve gender equality and empower all women and girls)

Target	Indicator	Number of subindicators	Tier	Data availability*
5.1 End all forms of discrimination against all women and girls everywhere	5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex	(No data)	Tier II	x

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	5.2.1 Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age	(Dropped) 1	Tier II	x
	5.2.2 Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence	(No data)	Tier II	x
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation	5.3.1 Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18	2 chosen out of 2	Tier II	12
	5.3.2 Proportion of girls and women aged 15–49 years who have undergone female genital mutilation/cutting, by age	(Dropped) 1	Tier II	x
5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location	(Dropped) 3	Tier II	x
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	5.5.1 Proportion of seats held by women in (a) national parliaments and (b) local governments	1 chosen out of 3	Tier I (a)/ Tier II (b)	21
	5.5.2 Proportion of women in managerial positions	1 chosen out of 2	Tier I	9
5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	5.6.1 Proportion of women aged 15–49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care	(Dropped) 1	Tier II	x
	5.6.2 Number of countries with laws and regulations that guarantee full and equal access to women and men aged 15 years and older to sexual and reproductive health care, information and education	(No data)	Tier III	x

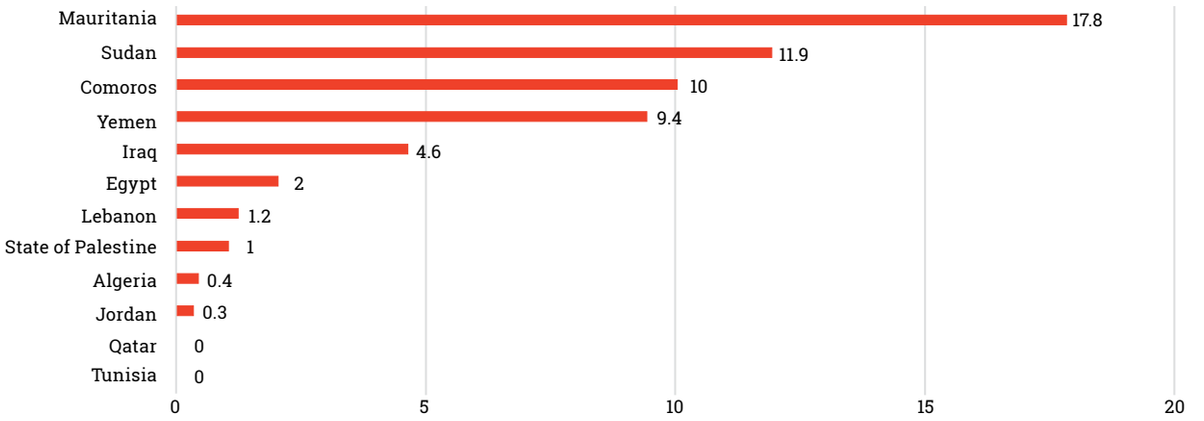
5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	5.a.1 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure	(No data)	Tier II	x
	5.a.2 Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control	(No data)	Tier II	x
5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	5.b.1 Proportion of individuals who own a mobile telephone, by sex	1 chosen out of 1	Tier I	9
5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1 Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment	(No data)	Tier II	x

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

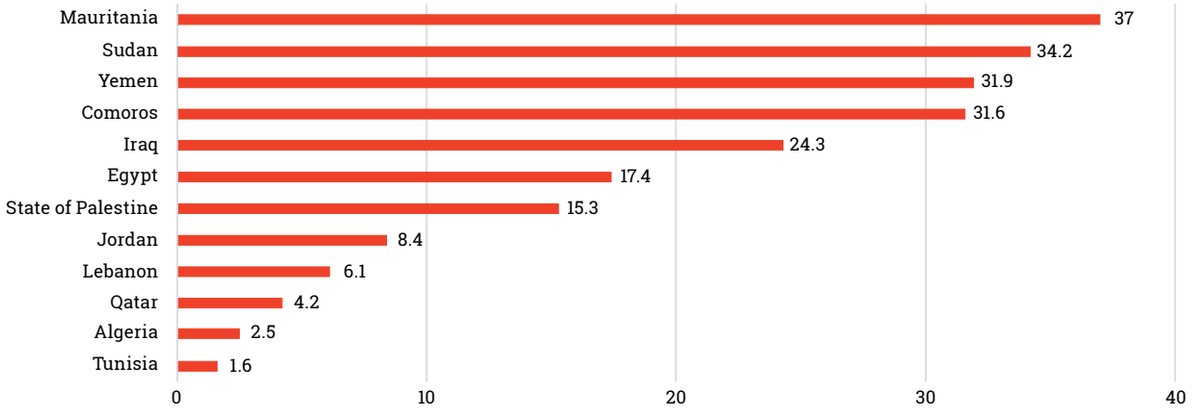
2. Country graphs

Figure 5.1 Two series of indicator 5.3.1 - Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18

Proportion of women aged 20–24 years who were married or in a union before age 15 (percentage)



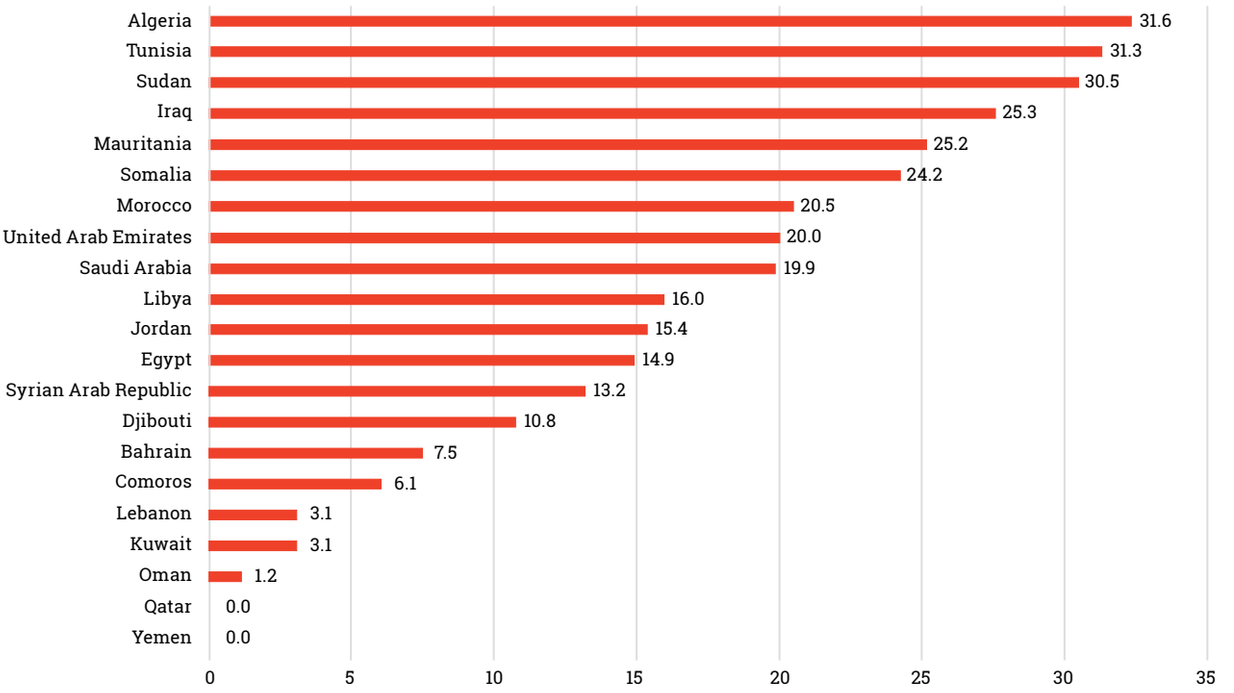
Proportion of women aged 20–24 years who were married or in a union before age 18 (percentage)



Note: Data for indicator 5.3.1 are from various years as follows: Lebanon (2009); Iraq (2011); Comoros, Jordan, Qatar and Tunisia (2012); Algeria and Yemen (2013); Egypt, State of Palestine and Sudan (2014); Mauritania (2015).

Figure 5.2 Indicator 5.5.1 - Proportion of seats held by women in (a) national parliaments and (b) local governments

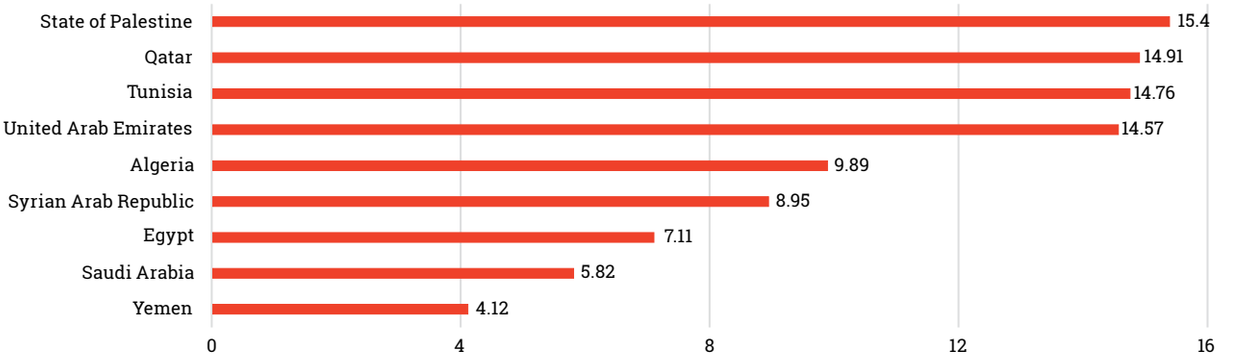
Proportion of seats held by women in national parliaments (percentage of total number of seats)



Note: All data are from 2017.

Figure 5.3 Indicator 5.5.2 - Proportion of women in managerial positions

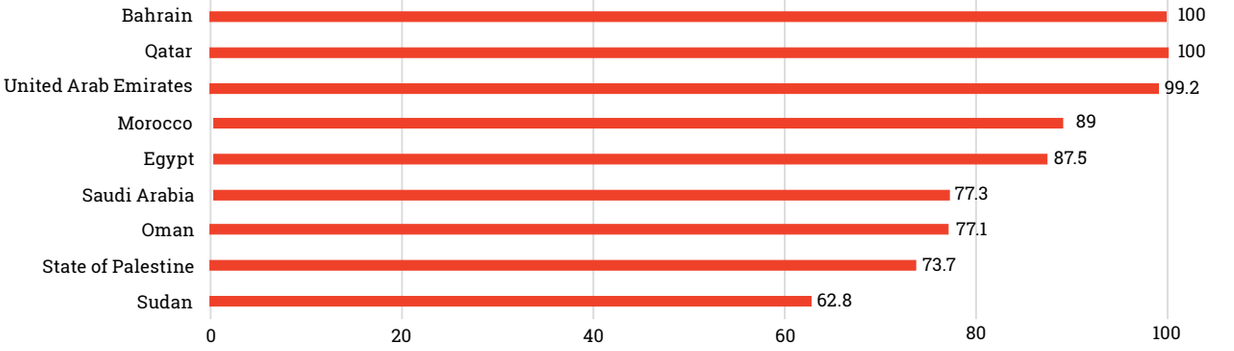
Proportion of women in managerial positions (percentage)



Note: Data are from various years as follows: Syrian Arab Republic (2010); Tunisia (2012); Algeria and Yemen (2014); Saudi Arabia and State of Palestine (2015); Egypt, Qatar and United Arab Emirates (2016).

Figure 5.4 Indicator 5.b.1 - Proportion of individuals who own a mobile telephone, by sex

Proportion of individuals who own a mobile telephone, by sex (percentage)



Note: All data are from 2016 apart from Oman (2013); State of Palestine (2014); and Qatar (2015).

Annex to chapter 6

1. Data for SDG 6

SDG 6 comprises 8 targets and a total of 11 indicators (six of which contain multiple subindicators). Four of the 11 indicators are tier I and seven are tier II. There are no tier III indicators for SDG 6.

The United Nations Statistics Division provides data sets for a total of nine indicators: 6.1.1 - Proportion of population using safely managed drinking water services; 6.2.1 - Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water; 6.3.2 - Proportion of bodies of water with good ambient water quality; 6.4.2 - Level of water stress: freshwater withdrawal as a proportion of available freshwater resources; 6.5.1 - Degree of integrated water resources management implementation (0–100); 6.5.2 - Proportion of transboundary basin area with an operational arrangement for water cooperation; 6.6.1 - Change in the extent of water-related ecosystems over time; 6.a.1 - Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan; and 6.b.1 - Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.

None of the provided data sets include sex disaggregated data.

The data used in the analysis of SDG 6 was downloaded on 20 September 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 6.4.2 (Level of water stress: freshwater withdrawal as a proportion of available freshwater resources), 6.a.1 (Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan) and each of the three subindicators of 6.2.1 (Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water) are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to drop 6.1.1, 6.3.2 and 6.5.2, one of the two series of indicator 6.5.1, 12 of the 16 series of indicator 6.6.1 and seven of the eight series of indicator 6.b.1. Additionally, when there are many subindicators that mean the same (or are similar) but are expressed differently (as in the case of the four remaining subindicators under 6.6.1), we choose the subindicator that is more representative and easier to interpret, and has more data availability. Therefore, we drop three of the remaining four subindicators of 6.6.1 and we only keep "Water body extent (permanent and maybe permanent) (percentage of total land area)".

Indicator 6.5.1 has two series: "Degree of integrated water resources management implementation (0–100)", and "Proportion of countries by IWRM implementation category (percentage)", where the second series is only calculated for predetermined geographical groups and not on the country or territory level. Therefore, we only keep the first series, and we drop the second one. We note again that 6.6.1 has four series with sufficiently available data for Arab countries: "Water body extent (permanent) (square kilometres)", "Water body extent (permanent and maybe permanent) (square kilometres)", "Water body extent (permanent and maybe permanent) (percentage of total land area)", and "Water body extent (permanent) (percentage of total land area)", where the latter two mean the same as the former two but are expressed differently, in percentage. Since the values of the "permanent and maybe permanent" category are slightly higher than those of the "permanent" category, the broader category (i.e. the former) and, particularly, the version of it that is expressed as a proportion of total land area is selected for comparison purposes. In other terms, we only keep the third series, which is also the most meaningful and representative of the indicator, and we drop the other three series.

Concerning the remaining series of 6.5.1 "Degree of integrated water resources management implementation (0–100)" and the third series of 6.4.2 (Proportion of population using safely managed sanitation services, by urban/rural (percentage)), since data availability is nearly complete for our base year (2017) and thus no substitution was possible within the considered time interval (2009–2017).

The rest of the indicators or subindicators are subject to our data substitution scheme for the year 2017, considering data spanning 2009–2017. Table 6.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 6.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
6.2.1 (Proportion of population practicing open defecation, by urban/rural (percentage))	10 (1)	2016
	3 (0)	2015
	2 (0)	2014
	1 (0)	2013
	1 (0)	2012
6.2.1 (Proportion of population with basic handwashing facilities on premises, by urban/rural (percentage))	6 (1)	2016
	6 (0)	2015
	4 (0)	2014
	1 (0)	2010
6.4.2 (Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (percentage))	57 (8)	2015
	40 (3)	2010
6.6.1 (Water body extent (permanent and maybe permanent) (percentage of total land area))	230 (21)	2016
6.a.1 (Total official development assistance (gross disbursement) for water supply and sanitation, by recipient countries (millions of constant 2017 United States dollars))	1 (0)	2014
	1 (0)	2013
	2 (0)	2011
	5 (1)	2010
6.b.1 (Countries with procedures in law or policy for participation by service users/communities in planning programme in rural drinking-water supply, by level of definition in procedures (10 = Clearly defined; 5 = Not clearly defined; 0 = NA))	28 (8)	2014
	4 (1)	2012

For 6.a.1 (Total official development assistance (gross disbursement) for water supply and sanitation, by recipient countries), the data set provided by the United Nations Statistics Division only includes recipient countries/territories and omits the donor countries/territories, which are considered as zeros when the series' regional and global aggregates are calculated using a total sum. Hence, we consider that 22 instead of 17 Arab countries are covered by data for this indicator, knowing that the six members of the Gulf Cooperation Council are donor countries whose missing data values in the original data set are equivalent to zeros.

As for 6.b.1, we note that we replace all the "NA" values (i.e. the zeros) in the corresponding original data set provided by the United Nations Statistics Division with missing points. We do this before data substitution which leads to only keeping one series (Countries with procedures in law or policy for participation by service users/communities in planning programme in rural drinking-water supply, by level of definition in procedures (10 = Clearly defined; 5 = Not clearly defined; 0 = NA)), as mentioned above. The preserved series addresses rural areas only.

This leaves us with eight integral indicators/subindicators with which we can assess the position of the region, as noted in box 6.1.

Box 6.1	Summary list of preserved and examined indicators/subindicators

- Indicator 6.2.1 – 3 series out of 3 – Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water
- Indicator 6.4.2 – Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
- Indicator 6.5.1 – 1 series out of 2 – Degree of integrated water resources management implementation (0–100)
- Indicator 6.6.1 – 1 series out of 16 – Change in the extent of water-related ecosystems over time
- Indicator 6.a.1 – Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan
- Indicator 6.b.1 – 1 series out of 8 – Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

Accordingly, six targets are evaluated, however, we lose the ability to determine the region's position on the rest of the targets and indicators as noted in box 6.2.

Box 6.2	Summary list of omitted targets

- 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

The non-featured indicators, which were not included in the global SDG database, are also shown in table 6.2 on targets, indicators, tiers and data availability in Arab countries for SDG 6.

Annex 6.2 for a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of 6.a.1 and the preserved series of 6.6.1 are calculated using a total sum, whereas the aggregates of the preserved series of 6.5.1 are calculated using a simple arithmetic mean. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the properties of the weighting variables are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the series/indicator whose global, regional, and subregional aggregates are weighted averages: Total population in 2015 (from the World Population Prospects), and the difference between the total renewable freshwater resources and the environmental water requirements (Env.) which consists the denominator of the corresponding indicator (from the United Nations Statistics Division-Aquastat, using data from the latest available year). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We note that, when a certain series or indicator (namely 6.2.1 and 6.b.1) needs a population-related weighting variable in 2016 or 2017, we use the latest available data for the variable, i.e. data for 2015 from the World Population Prospects. The data for 6.4.2 covers the years 2010 and 2015 only, and since the Aquastat database provides data for the two variables used to create the weight inconsistently in terms of the year

coverage, we use the latest data provided by Aquastat for these two variables, noting that the years to which this latest data belong fall within the 2010–2015 period.

Finally, we note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. A such, our final data coverage is sometimes undermined by the data availability of the weighting variable. This applies for 6.4.2 where 8 out of 11 Arab countries are covered after weighting. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries that have data for the evaluated series/indicator, regardless of the data availability of the weighting variable.

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For target 2, which is to "achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations" by 2030, we consider the target value as 0 per cent of the series on the proportion of population practicing open defecation (percentage) and as 100 per cent for each of the two other series on the proportion of population with basic hand-washing facilities on premises (percentage) and the proportion of population using safely managed sanitation services (percentage). As for the selected series of 6.5.1 on "degree of integrated water resources management implementation (0–100)", we set the target value as 100 since this number represents the full implementation stage on the adopted scale. However, for the other targets/indicators, it is not possible to infer the official desired target values from the official target definitions and thus they are not shown.

Table 6.2 Targets, indicators, tiers and data availability for Arab countries – SDG 6 (Ensure availability and sustainable management of water and sanitation for all)

Target	Indicator	Number of subindicators	Tier	Data availability*
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services	(Dropped) 1	Tier II	x
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water	3 chosen out of 3	Tier II	22, 11, 15
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated	(No data)	Tier II	x
	6.3.2 Proportion of bodies of water with good ambient water quality	(Dropped) 4	Tier II	x
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time	(No data)	Tier II	x
	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	1 chosen out of 1	Tier I	11

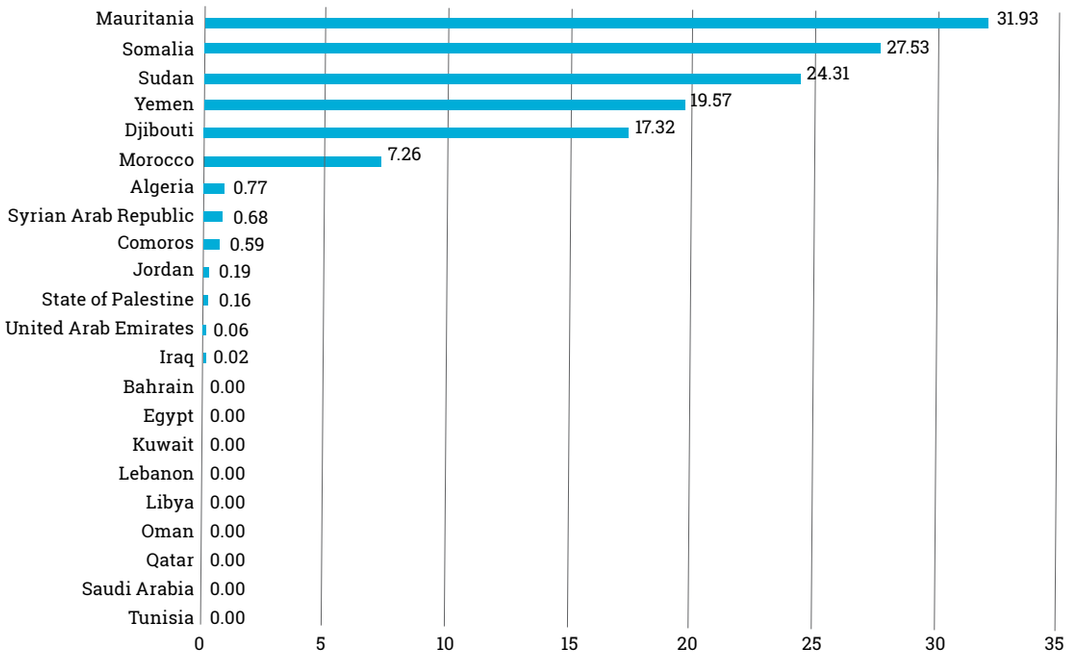
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management implementation (0–100)	1 chosen out of 2	Tier I	18
	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation	(Dropped) 3	Tier II	x
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time	1 chosen out of 16	Tier II	21
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan	1 chosen out of 1	Tier I	22
6.b Support and strengthen the participation of local communities in improving water and sanitation management	6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	1 chosen out of 8	Tier I	10

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
We note that the weighting variables sometimes prevents us from evaluating the series/indicator using the full data that are available or provided to us. As such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the data availability of the weighting variable.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

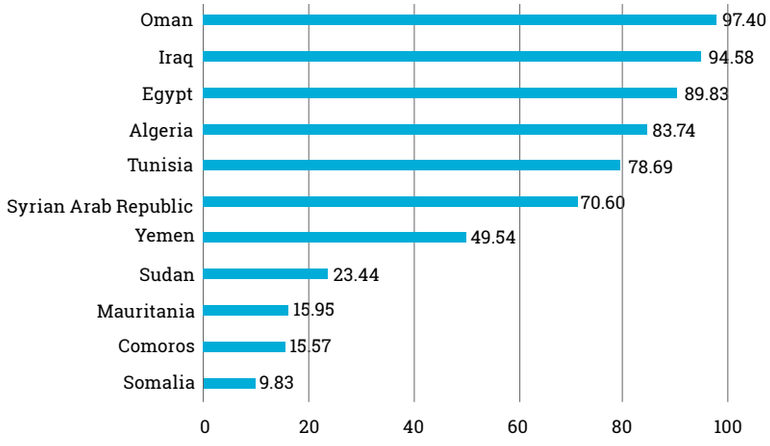
Figure 6.1 Three series of indicator 6.2.1 - Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water

Proportion of population practicing open defecation(percentage)



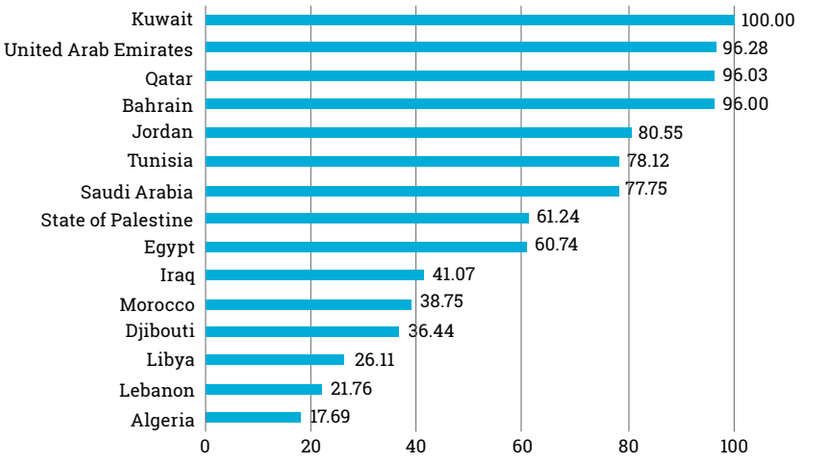
Note: All data are from 2017 apart from Syrian Arab Republic (2016).

Proportion of population with basic hand-washing facilities on premises (percentage)



Note: All data are from 2017 apart from Comoros (2016).

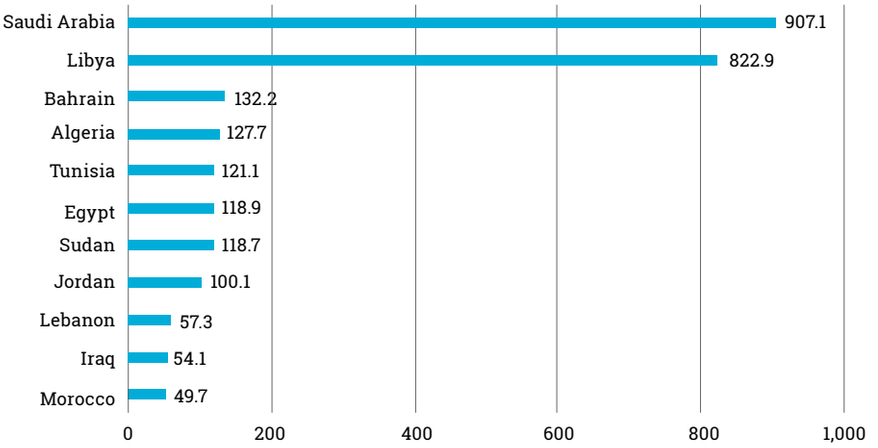
Proportion of population using safely managed sanitation services (percentage)



Note: All data are from 2017.

Figure 6.2 Indicator 6.4.2 - Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (percentage)

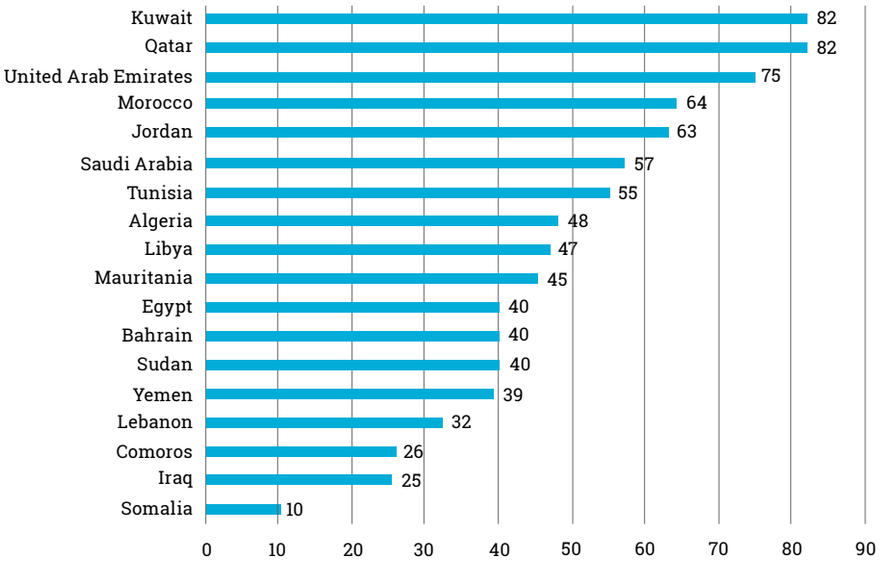
Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (percentage)



Note: All data are from 2015 apart from Libya, Morocco and the Sudan (2010).

Figure 6.3 Indicator 6.5.1 - Degree of integrated water resources management implementation (0-100)

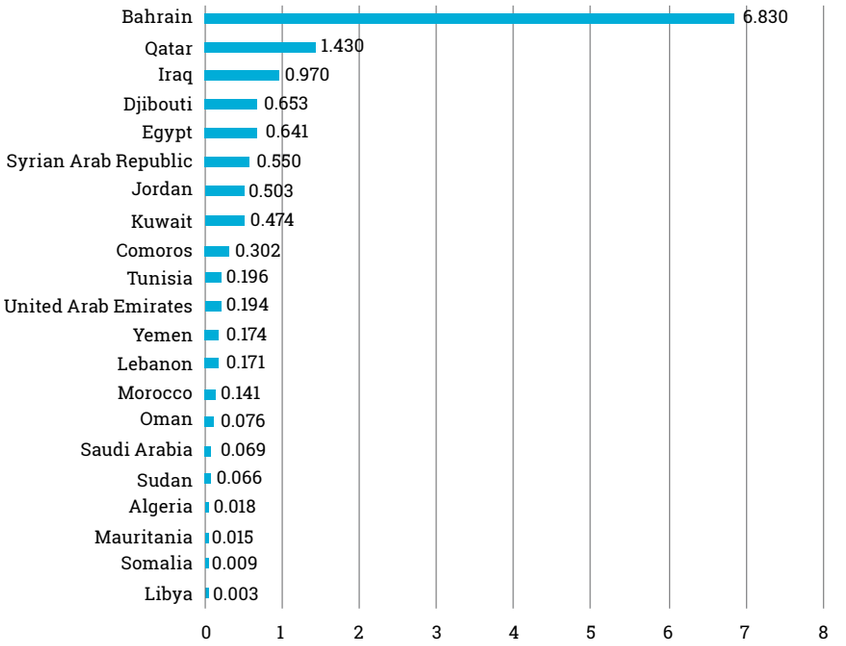
Degree of integrated water resources management implementation (0-100)



Note: All data are from 2017.

Figure 6.4 One series of indicator 6.6.1 - Change in the extent of water-related ecosystems over time

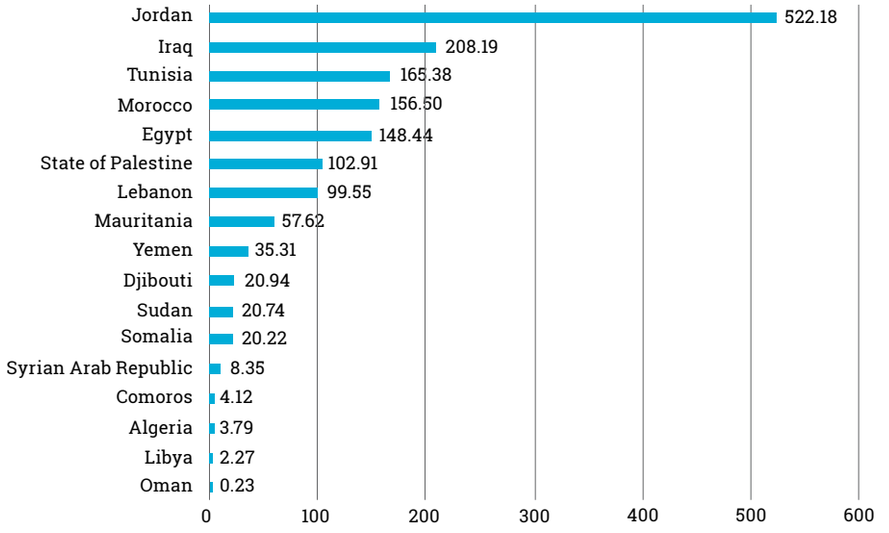
Water body extent (permanent and maybe permanent), (percentage of total land area)



Note: All data are from 2016.

Figure 6.5 One series of indicator 6.a.1 - Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan

Total official development assistance (gross disbursement) for water supply and sanitation, by recipient countries (millions of constant 2017 United States dollars)



Note: All data are from 2017 apart from Oman (2010).

Figure 6.6 One series of indicator 6.b.1 - Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management

Countries with procedures in law or policy for participation by service users/communities in planning programme in rural drinking-water supply, by level of definition in procedures

Note: 10 = Clearly defined; 5 = Not clearly defined; 0 = NA
Data are for 2014 apart from Egypt (2012) and State of Palestine (2017).

Annex to chapter 7

1. Data for SDG 7

SDG 7 comprises five targets and a total of six indicators (none of which contain multiple subindicators). Of these indicators, four are tier I, one is tier II and one is tier III, for which data are not available as the indicator is still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of four indicators: 7.1.1 - Proportion of population with access to electricity; 7.1.2 - Proportion of population with primary reliance on clean fuels and technology; 7.2.1 - Renewable energy share in the total final energy consumption; and 7.3.1 - Energy intensity measured in terms of primary energy and gross domestic product (GDP).

None of the provided data sets include sex disaggregated data.

The data used in the analysis of SDG 7 was downloaded on 3 September 2018. After a country-level data check following a major global SDG data update of the United Nations Statistics Division on 8 July 2019, no large differences were found, and thus none of the data series needed to be replaced or amended.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total population of the Arab region and at least the third of the Arab countries for an indicator/subindicator to be kept in the analysis.

All of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009-2017. Table 7.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 7.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
7.1.1 (Proportion of population with access to electricity, by urban/rural (percentage))	214 (22)	2016
7.1.2 (Renewable energy share in the total final energy consumption (percentage))	191 (19)	2015
7.2.1 (Renewable energy share in the total final energy consumption (percentage))	221 (22)	2015
7.3.1 (Energy intensity level of primary energy (megajoules per constant 2011 purchasing power parity GDP))	188 (20)	2015

For 7.1.2, the data set provided by the United Nations Statistics Division contains data points such as “>95.0”, indicating a value higher than 95, and “<5.0”, indicating a value lower than 5. We replace the former by 95 as a ceiling and the latter by 5 as a floor, making 5 and 95 the minimum and maximum values of this indicator.

This leaves us with four integral indicators/subindicators with which we can assess the position of the region, as noted in box 7.1.

Box 7.1 Summary list of preserved and examined indicators/subindicators

- Indicator 7.1.1 – Proportion of population with access to electricity, by urban/rural (percentage)
- Indicator 7.1.2 – Proportion of population with primary reliance on clean fuels and technology (percentage)
- Indicator 7.2.1 – Renewable energy share in the total final energy consumption (percentage)
- Indicator 7.3.1 – Energy intensity level of primary energy (megajoules per constant 2011 purchasing power parity GDP)

Accordingly, three targets are evaluated in this chapter. However, we lose the ability to determine the region's position on the rest of the targets and indicators as noted in box 7.2.

Box 7.2	**Summary list of omitted targets**

- 7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
- 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support

The non-featured indicators, due to not being included in the global SDG database, can also be determined from table 7.2 on targets, indicators, tiers and data availability in Arab countries for SDG 7.

Annex 7.2 comprises a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional, and subregional aggregates of all the evaluated indicators of SDG 7 (i.e., 7.1.1, 7.1.2, 7.2.1 and 7.3.1) are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the properties of the weighting variables are all chosen based on what is advised by the corresponding United Nations Statistics Division Metadata or by the original source of the corresponding data that is referred to by this Metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the series/indicators evaluated under this Goal: Total population in 2015 (from the World Population Prospects), Total final energy consumption (TJ) in 2015 (from the World Development Indicators Database, which gathers this data from the original sources, namely the national statistical offices, just as the International Energy Agency does), and constant 2011 purchasing power parity GDP in international United States dollars for the year 2015 (from the World Development Indicators Database). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We note that when a certain series or indicator (namely indicators 7.1.1 and 7.1.2) need a population- related weighting variable in 2016 or 2017, we use the latest available data for this variable, i.e. data for 2015 provided by the World Population Prospects.

Finally, we note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. As such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies for indicator 7.3.1 where 18 Arab countries out of a potential of 20 are covered after weighting. While this affects the global, regional, and/or subregional aggregates, the country-year graphs include all the Arab countries that have data for the evaluated series/indicator, regardless of the data availability of the weighting variable.

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For indicators 7.1.1 and 7.1.2, we consider the target values as 100 per cent of the population with access to electricity and 100 per cent of the population with primary reliance on clean fuels and technology, respectively, since target 1 aims to "ensure universal access to affordable, reliable and modern energy services, by 2030". However, we remain unable to determine the desired target values for the rest of the evaluated indicators (7.a.1 and 7.b.1) since it is not possible to infer them from the official titles of the corresponding targets, nor are they explicitly mentioned in the official title of each target. Thus they are not shown.

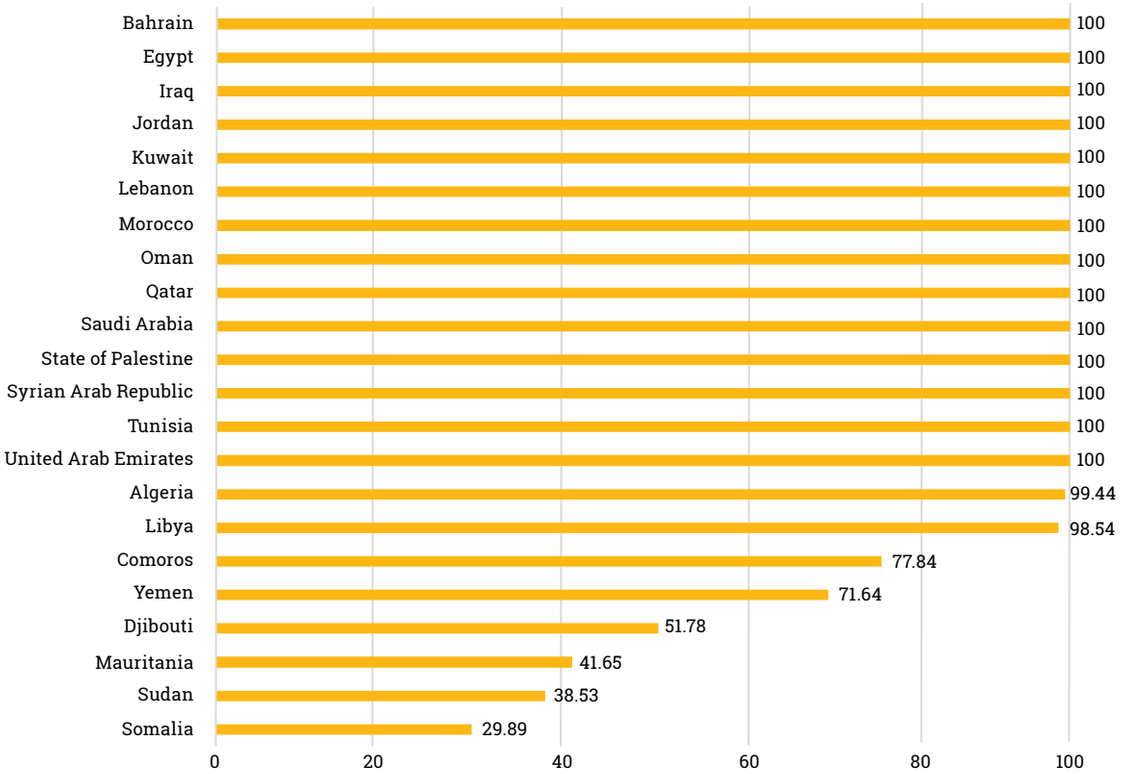
Table 7.2 Targets, indicators, tiers and data availability for Arab countries – SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all)

Target	Indicator	Number of subindicators	Tier	Data availability*
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity	1 chosen out of 1	Tier I	22
	7.1.2 Proportion of population with primary reliance on clean fuels and technology	1 chosen out of 1	Tier I	19
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption	1 chosen out of 1	Tier I	22
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and GDP	1 chosen out of 1	Tier I	20
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems	(No data)	Tier II	x
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services	(No data)	Tier III	x

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available/provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional, and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the weighting variable's data availability.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

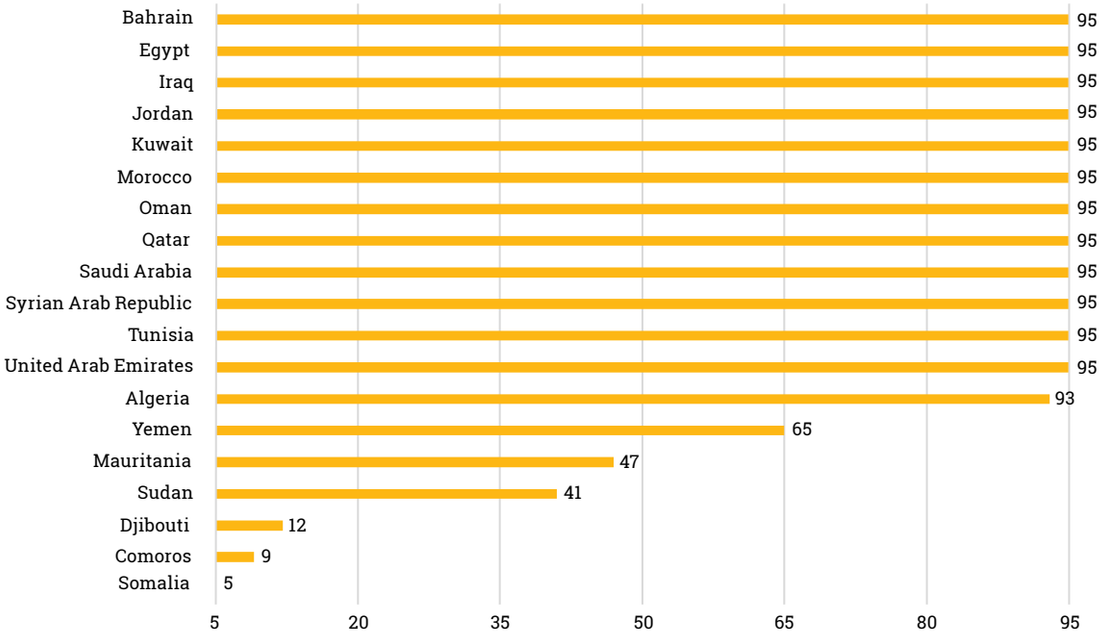
2. Country graphs

Figure 7.1 Indicator 7.1.1 - Proportion of population with access to electricity, by urban/rural (percentage)
Proportion of population with access to electricity (percentage)



Note: All data are for 2016.

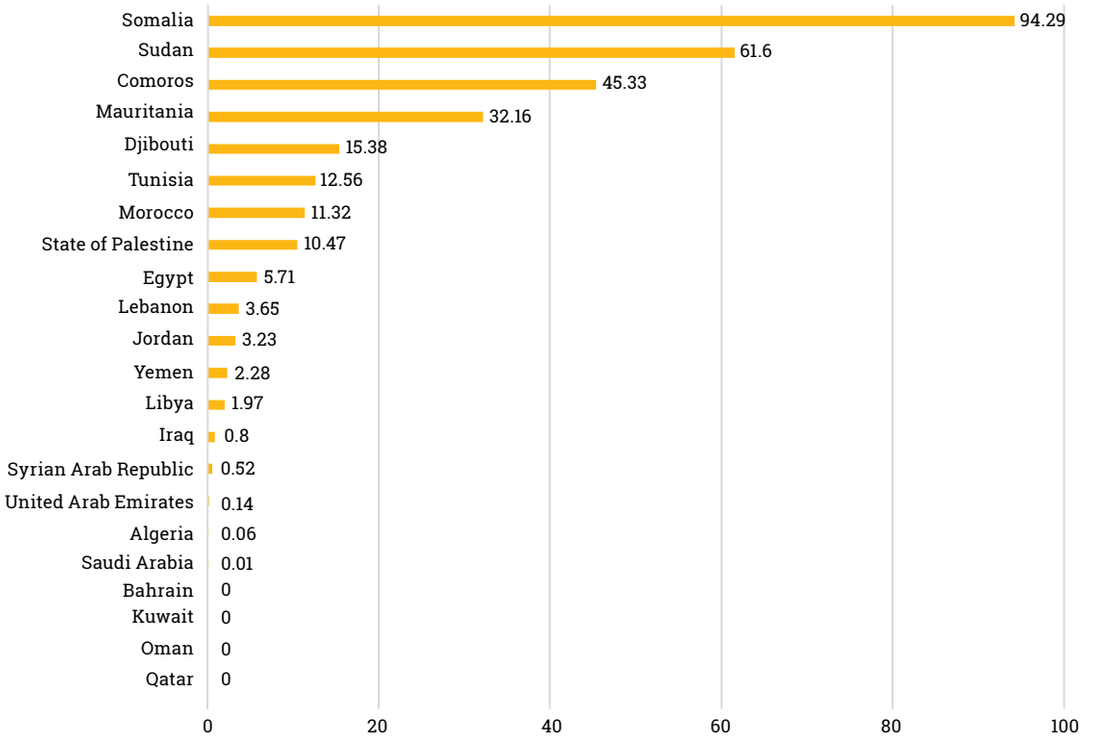
Figure 7.2 Indicator 7.1.2 - Proportion of population with primary reliance on clean fuels and technology (percentage)
Proportion of population with primary reliance on clean fuels and technology (percentage)



Note: All data are for 2016.

Figure 7.3 Indicator 7.2.1 - Renewable energy share in the total final energy consumption (percentage)

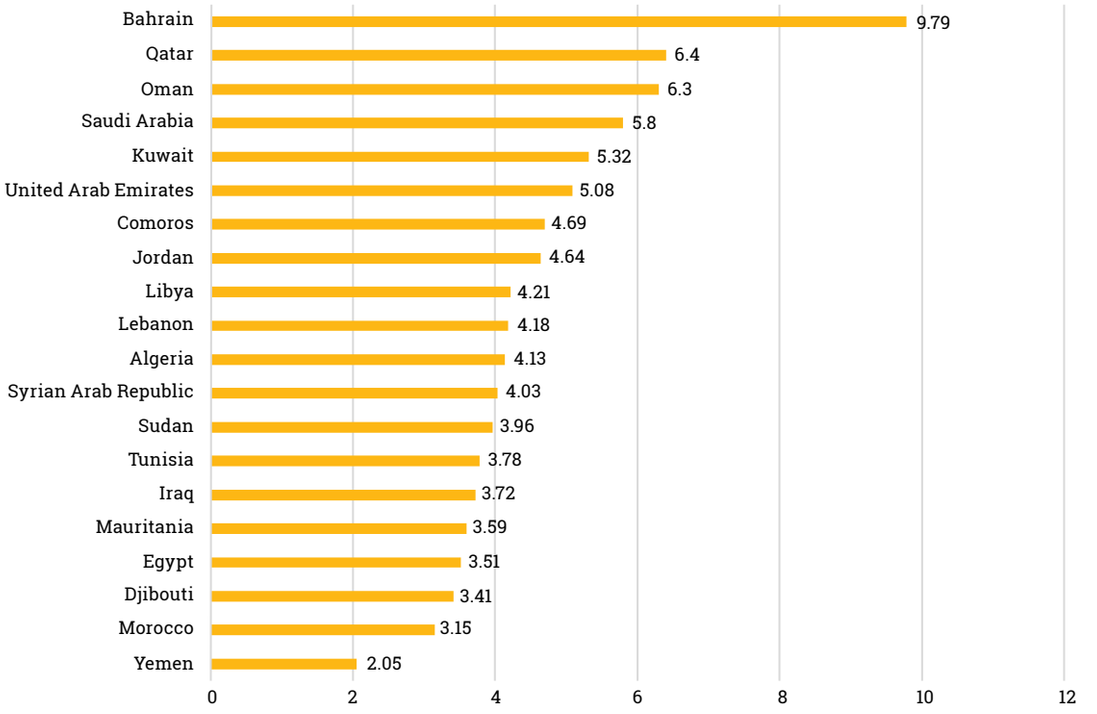
Renewable energy share in the total final energy consumption (percentage)



Note: All data are from 2015.

Figure 7.4 Indicator 7.3.1 - Energy intensity level of primary energy (megajoules per constant 2011 purchasing power parity GDP)

Energy intensity measured in terms of primary energy and GDP (megajoules per GDP - constant 2011 purchasing power parity GDP in United States dollars)



Note: All data are from 2015.

Annex to chapter 8

1. Data for SDG 8

SDG 8 comprises 12 targets and a total of 17 indicators (six of which contain multiple subindicators). Of these indicators, eight are tier I, five are tier II, and four are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of 13 indicators: 8.1.1 - Annual growth rate of real gross domestic product (GDP) per capita; 8.2.1 - Annual growth rate of real GDP per employed person; 8.3.1 - Proportion of informal employment in non-agriculture employment, by sex; 8.4.1 - Material footprint, material footprint per capita, and material footprint per GDP; 8.4.2 - Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP; 8.5.1 - Average hourly earnings of female and male employees, by occupation, age and persons with disabilities; 8.5.2 - Unemployment rate, by sex, age and persons with disabilities; 8.6.1 - Proportion of youth (aged 15–24 years) not in education, employment or training; 8.7.1 - Proportion and number of children aged 5–17 years engaged in child labour, by sex and age; 8.8.1 - Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status; 8.10.1 - (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults; 8.10.2 - Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider; and 8.a.1 - Aid for Trade commitments and disbursements.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total Arab region's population and at least the third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 8.3.1, 8.5.1, 8.6.1 and 8.8.1.

Indicators 8.4.1 and 8.4.2 are the exact repetitions of 12.2.1 (Material footprint, material footprint per capita, and material footprint per GDP) and 12.2.2 (Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP), respectively, and are, evaluated in both chapters.

The data used in the analysis of SDG 8 was downloaded on 2 July 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, we realize that the data for 8.4.1 (Material footprint, material footprint per capita, and material footprint per GDP) had been totally removed from the database. When the United Nations Statistics Division updated its data again on 6 August 2019, the data for this indicator were added/provided again but only covering the world aggregates and not the countries, regions or subregions. Therefore, 8.4.1 is omitted from our analysis.

However, we do not attempt to substitute any data for indicators 8.1.1 and 8.2.1 throughout years because they measure the annual growth rates of real GDP per capita and per employed person, respectively, which technically cannot be substituted as growth rates depict changes across years.

Data availability in 2017 for indicators 8.1.1 and 8.2.1 is complete for the world, including for the Arab region (the values for members of the Gulf Cooperation Council are missing for the Arab region for all time periods), which implies that there is no need for data substitution in the first place. Similarly, data is complete for the two series of indicator 8.a.1. For indicator 8.4.2 (Domestic material consumption per capita, by type of raw material), no data substitution was actually made for 2017 since data availability is complete or nearly complete for this year, especially as compared to previous years. This subindicator covers 184 countries and territories, including 21 Arab countries.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 8.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 8.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
8.5.2 (Unemployment rate, by sex, age and persons with disabilities)	89 (8)	2016
	17 (0)	2015
	15 (2)	2014
	6 (0)	2013
	9 (2)	2012
	10 (3)	2011
	9 (0)	2010
	5 (2)	2009
8.7.1 (Proportion of children engaged in economic activity, by sex and age)	5 (1)	2016
	12 (0)	2015
	16 (2)	2014
	11 (0)	2013
	16 (2)	2012
	11 (3)	2011
	9 (1)	2010
8.7.1 (Proportion of children engaged in economic activity and household chores, by sex and age)	4 (1)	2016
	11 (0)	2015
	15 (2)	2014
	9 (0)	2013
	14 (2)	2012
	9 (3)	2011
	9 (1)	2010

8.10.1 (Number of automated teller machines (ATMs) per 100,000 adults)	153 (14)	2016
	19 (4)	2015
	2 (0)	2014
	5 (0)	2013
	4 (2)	2012
	1 (0)	2009
8.10.1 (Number of commercial bank branches per 100,000 adults)	157 (15)	2016
	16 (3)	2015
	2 (0)	2014
	6 (1)	2013
	3 (1)	2012
8.10.2 (Proportion of adults (15 years and older) with an account at a financial institution or mobile-money-service provider)	9 (3)	2014
	5 (5)	2011

We note that the data of 8.5.2 are disaggregated by age group, including three categories: 15–24 years old, 25 years old and older, and 15 years old and older. We omit the first two series and keep the last one (15 years old and older) since it is more inclusive of the population and it has slightly better data availability than the other two.

Indicator 8.7.1 consists of two subindicators: "Proportion of children engaged in economic activity" and "Proportion of children engaged in economic activity and household chores"; where the second is a broader measure of the child labour problem than the first and includes the first. Thus, we visualize and analyse both subindicators separately in a stacked bar chart where the latter includes the former, as this is more informative and interesting than choosing to evaluate one of them and omitting the other. The data of these two series is not disaggregated by age group but we note that, for some observations, children aged 5–14 years are covered, whereas, for other observations, children aged 5–17 years are covered. Furthermore, these two series together cover only 71 low- and middle-income countries globally, including nine Arab countries. As such, the data cover merely one country from Oceania and zero members of the Gulf Cooperation Council.

Target 8.10 includes two indicators: 8.10.1, which has two subindicators (Number of automated teller machines (ATMs) per 100,000 adults and Number of commercial bank branches per 100,000 adults), and 8.10.2 (Proportion of adults with an account at a bank or other financial institution or with a mobile-money-service provider, in percent). Both indicators only address people aged 15 years and older.

As for indicator 8.a.1 (Aid for Trade commitments and disbursements), we drop the two series which represent the "Total official flows committed for Aid for Trade, by donor" and the "Total official flows disbursed for Aid for Trade, by donor" (where data is provided for only 29 donor countries) and we only keep the series which measure the committed official flows and disbursements by recipient. The two preserved series reflect the patterns of the donor countries' contributions and assistance, knowing that donor countries are in the driving seat in development financing. Therefore, the results derived from the two series by recipient can help with the formulation of policy recommendations as they indicate if there is need for donor countries to alter the amount of development assistance that they commit and pledge or to reconsider the countries/regions that they target. For each of the two preserved subindicators, the main data sets provided by the United Nations Statistics Division only include recipient countries and omit the donor countries, and given the nature of construction of a full matrix consisting of all countries in the world, take missing values. We then visualized and analyse the two preserved subindicators separately but in the same chart since this allows us to compare the aggregate of total committed official flows to the aggregate of total disbursed official

flows for every region/subregion, noting that both subindicators are on the same scale, range and unit. This comparison provides a more accurate image of the reality as it informs on the extent to which international financial institutions meet their commitments and on the actual amounts of official flows that the regions/subregions receive compared to what they expect.

This leaves us with nine integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 8.1.

Box 8.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 8.1.1 – Annual growth rate of real GDP per capita
- Indicator 8.2.1 – Annual growth rate of real GDP per employed person
- Indicator 8.4.2 – 1 series out of 54 – Domestic material consumption per capita, by type of raw material
- Indicator 8.5.2 – Unemployment rate, by sex, age and persons with disabilities
- Indicator 8.7.1 – Proportion and number of children aged 5–17 years engaged in child labour, by sex and age
- Indicator 8.10.1 – (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults
- Indicator 8.10.2 – Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider
- Indicator 8.a.1 – 2 series out of 4 – Aid for Trade commitments and disbursements

However, we lose the ability to determine the region's position on the rest of the targets, indicators, and subindicators as noted in box 8.2, including those listed in table 8.2 on targets, indicators, tiers and data availability in Arab countries for SDG 8, but that do not have sufficient data.

Box 8.2	**Summary list of omitted targets**

- 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
- 8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training
- 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
- 8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
- 8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

Annex 8.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of 8.a are calculated using a total sum. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The weight that was used for 8.1.1 and 8.4.2 is Total Population in 2015 (World Population Prospects). The weight used for 8.2.1 is the latest (2016) total employed people (ILO http://data.un.org/Explorer.aspx?d=SNAAMA, SDG Indicators Metadata Repository), for 8.5.2 it is 2016 total labour force modeled estimates – because 117 observations are covered by the ILO labour force survey, from which the labour force weight that we would more ideally use comes, thus we use the alternative weight (ILO http://data.un.org/Explorer.aspx?d=SNAAMA, SDG Indicators Metadata Repository), for 8.7.1 it is the latest (2015) estimates of the population aged 5–17 years (World Population Prospects, SDG Indicators Metadata Repository), and for 8.10.1 it is the latest (2015) estimates of the population aged 15 years and older (World Population Prospects, SDG Indicators Metadata Repository). All the gender ratio aggregates are weighted with their respective weights as well.

The chapter includes more details about the weighting variable and method.

We calculate the world, regional and subregional averages for each indicator and include the target value – when available – to facilitate comparability. Target 8.5 aims to "achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value, by 2030", thus we consider the target value as the average natural rate of unemployment (the minimum unemployment rate possible) in the world over history. Since recent research by the Federal Reserve Bank of San Francisco suggests "the natural unemployment rate has been remarkably stable over the past 100 years, hovering between 4.5 and 5.5% for long periods", we set the target value as the mid-point of this range, i.e. at 5 per cent. Target 8.7 aims to "end child labour in all its forms, by 2025", thus we set the target value as 0 per cent of children aged 5–17 years that are engaged in child labour (i.e. 0 per cent for each of the two series, the one only measuring children's engagement in economic activity and the one additionally measuring their engagement in domestic chores). However, for the rest of the evaluated targets, it is not possible to infer the official desired target values, and thus they are not shown.

Of the indicators that we can use, three have sex disaggregated data with sufficient availability: 8.5.2, 8.7.1 (both series), and 8.10.2. We calculate the regional, subregional and cluster averages for each of these ratios. For 8.7.1, we only explore sex disaggregation for the series that forms a broader measure of child labour (Proportion of children engaged in economic activity and household chores).

We construct the female-to-male ratios for indicator 8.5.2, indicator 8.10.2 and the broader series of indicator 8.7.1, and again check for data availability. We then undertake the same data substitution process on these ratios for optimal data availability in 2017 that is parallel or almost parallel to the aggregated forms of the respective indicators.

Table 8.2 Data substitution scheme for female-to-male ratios of selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
8.5.2 (Unemployment rate, by sex, age and persons with disabilities)	87 (8)	2016
	15 (0)	2015
	14 (2)	2014
	6 (0)	2013
	9 (2)	2012
	7 (0)	2011
	10 (2)	2010
	6 (2)	2009
8.7.1 (Proportion of children engaged in economic activity, by sex and age) and (Proportion of children engaged in economic activity and household chores, by sex and age)	4 (1)	2016
	11 (0)	2015
	15 (2)	2014
	9 (0)	2013
	14 (2)	2012
	9 (3)	2011
	9 (1)	2010
8.10.2 (Proportion of adults (15 years and older) with an account at a financial institution or mobile-money-service provider)	9 (3)	2014
	5 (5)	2011

The female-to-male ratio of 8.5.2 has 21 observations from different regions (including many Arab observations) with values that significantly exceed 200 per cent. Nevertheless, we do not cap this ratio to 200 since these values are numerous and a high female-to-male ratio for the unemployment rate is very significant and representative of many observations.

Table 8.3 Targets, indicators, tiers and data availability for Arab countries – SDG 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all)

Target	Indicator	Number of subindicators	Tier	Data availability*
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	8.1.1 Annual growth rate of real GDP per capita	1 chosen out of 1	Tier I	22

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	8.2.1 Annual growth rate of real GDP per employed person	1 chosen out of 1	Tier I	21
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	8.3.1 Proportion of informal employment in non-agriculture employment, by sex	(Dropped) 1	Tier II	x
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead	8.4.1 Material footprint, material footprint per capita, and material footprint per GDP	(No data)	Tier II	x
	8.4.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	1 chosen out of 54	Tier I	21
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	(Dropped) 1	Tier II	x
	8.5.2 Unemployment rate, by sex, age and persons with disabilities	1 chosen out of 1	Tier I	17
8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training	8.6.1 Proportion of youth (aged 15–24 years) not in education, employment or training	(Dropped) 1	Tier I	x
8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	8.7.1 Proportion and number of children aged 5–17 years engaged in child labour, by sex and age	2 chosen out of 2	Tier II	9

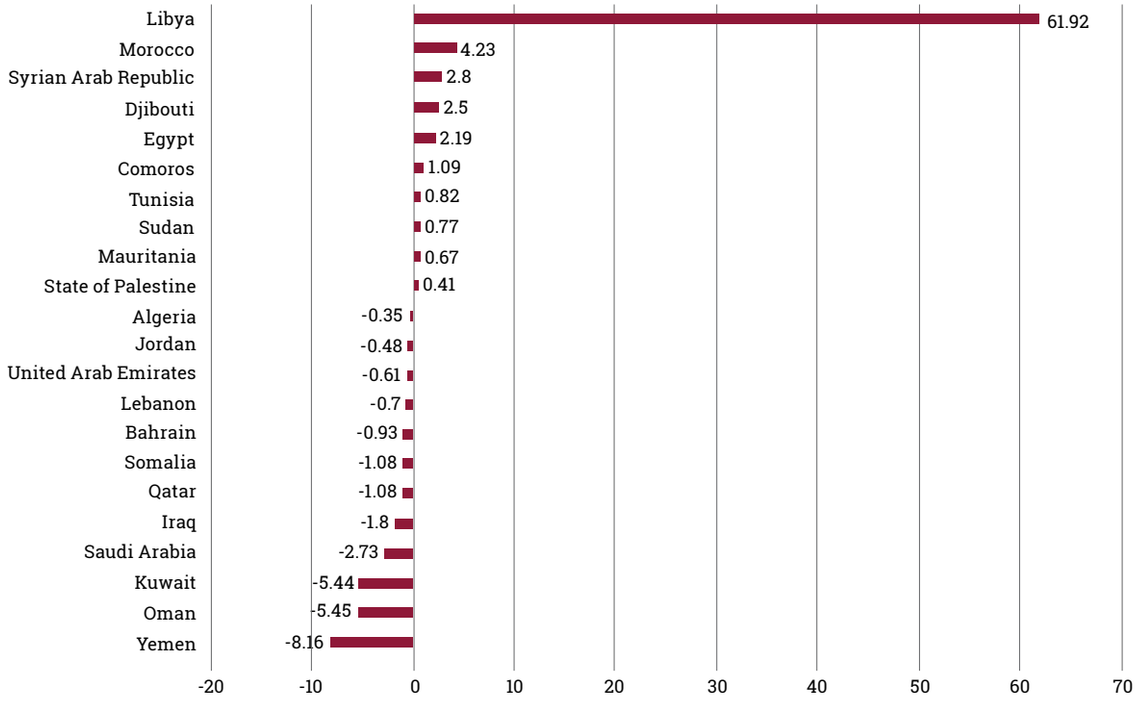
8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status	(Dropped) 2	Tier II	x
	8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status	(No data)	Tier III	x
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate	(No data)	Tier II	x
	8.9.2 Proportion of jobs in sustainable tourism industries out of total tourism jobs	(No data)	Tier III	x
8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	8.10.1 (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults	2 chosen out of 2	Tier I	20
	8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider	1 chosen out of 1	Tier I	22
8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries	8.a.1 Aid for Trade commitments and disbursements	2 chosen out of 4	Tier I	22
8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization	8.b.1 Existence of a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy	(No data)	Tier III	x

* Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 8.1 Indicator 8.1.1 - Annual growth rate of real GDP per capita

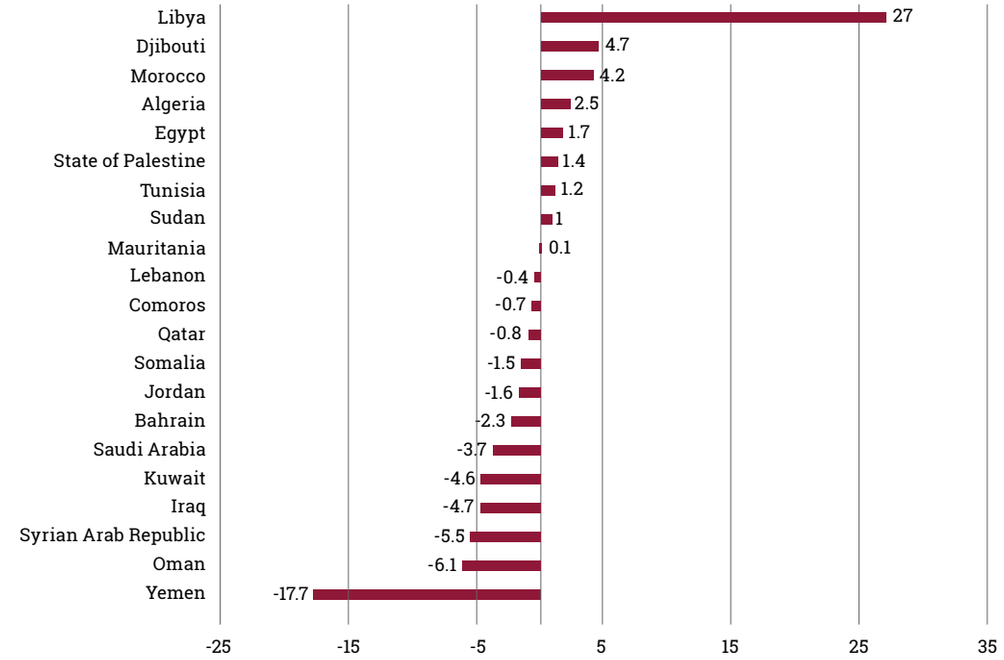
Annual growth rate of real GDP per capita (percent)



Note: All data are for 2017.

Figure 8.2 Indicator 8.2.1 - Annual growth rate of real GDP per employed person

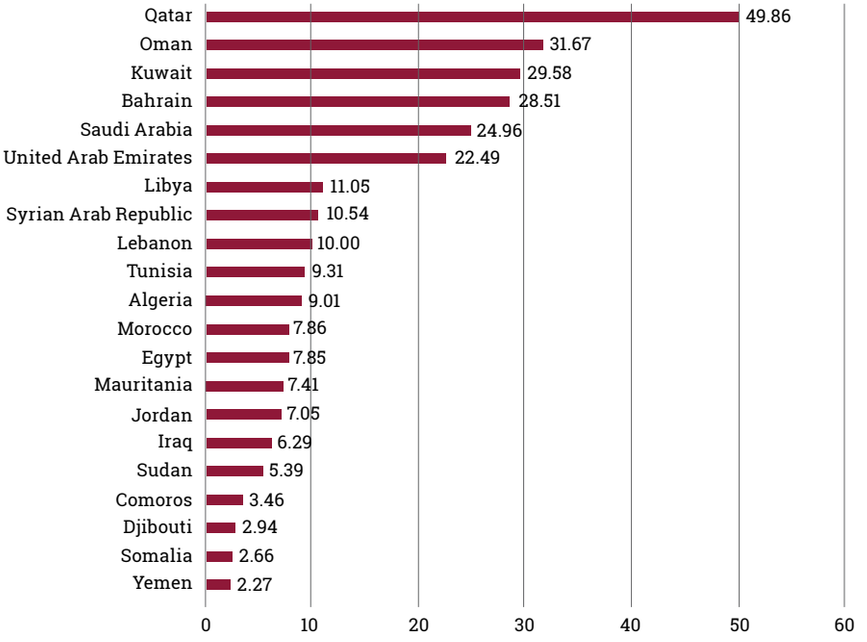
Annual growth rate of real GDP per employed person (percentage)



Note: All data are for 2017.

Figure 8.3 Indicator 8.4.2 - Domestic material consumption per capita, by type of raw material

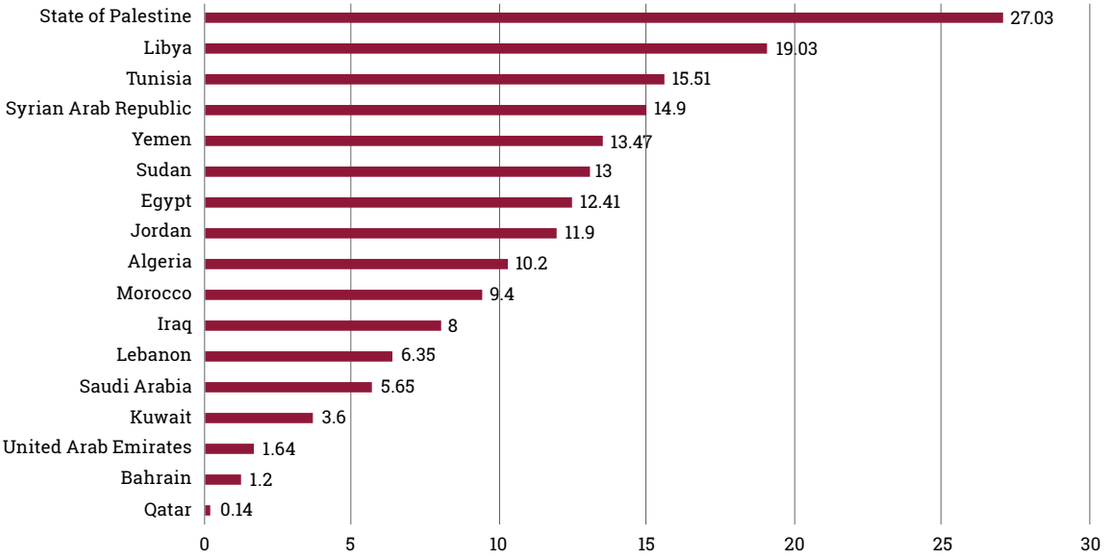
Domestic material consumption per capita (metric tons)



Note: All data are for 2017.

Figure 8.4 Indicator 8.5.2 - Unemployment rate, by sex, age and persons with disabilities

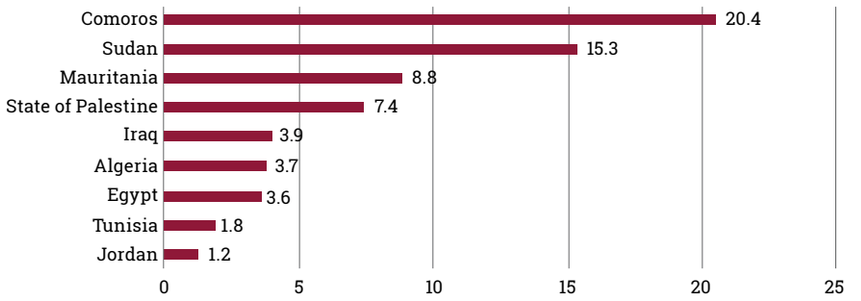
Unemployment rate (percentage)



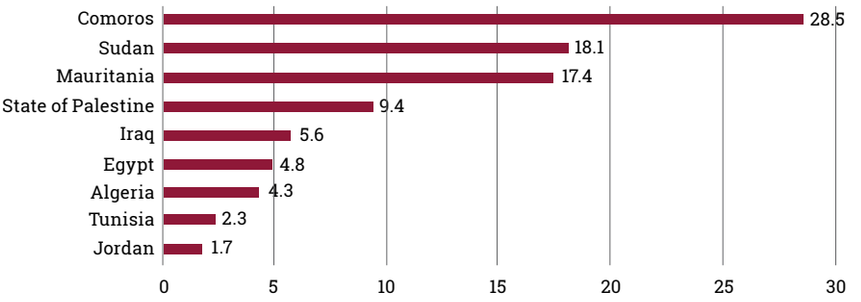
Note: All data are for 2016 apart from Lebanon and Sudan (2009), Iraq, Kuwait and Syrian Arab Republic (2011), Bahrain and Libya (2012) and Jordan and Yemen (2014).

Figure 8.5 Two series of indicator 8.7.1 - Proportion and number of children aged 5–17 years engaged in child labour, by sex and age

Proportion of children engaged in economic activity (percentage)



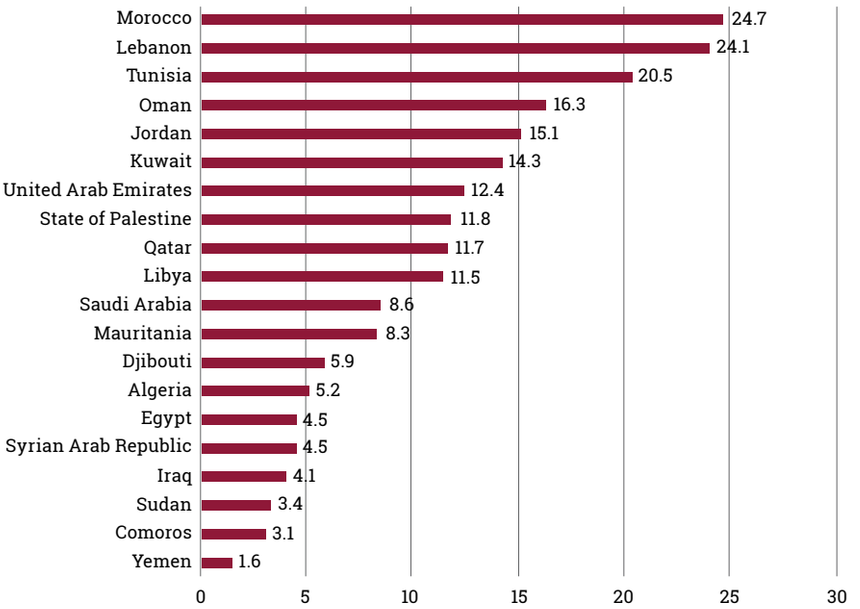
Proportion of children engaged in economic activity and household chores (percentage)



Note: Data for 8.7.1 are from the following years: State of Palestine (2010), Iraq, Mauritania and Tunisia (2011), Algeria and Comoros (2012), Egypt and Sudan (2014) and Jordan (2016).

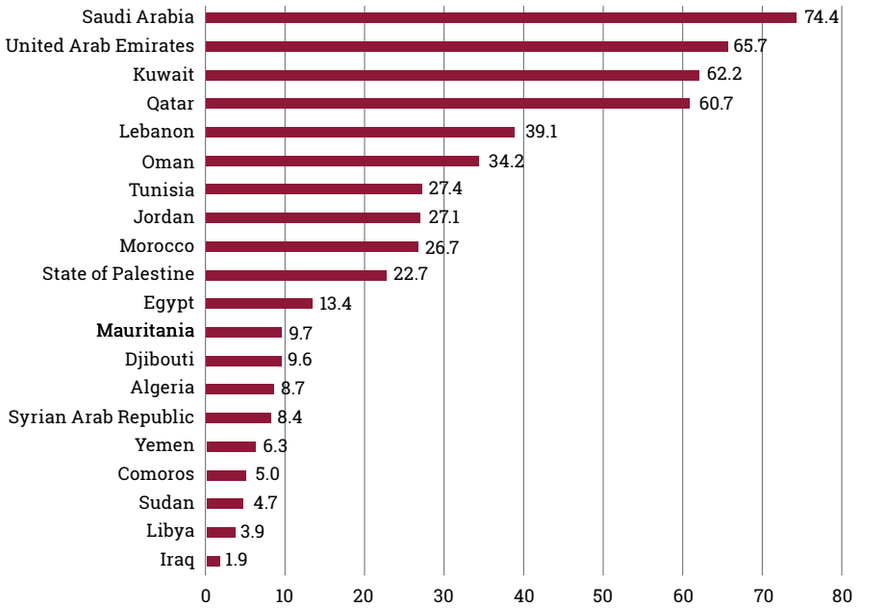
Figure 8.6 Indicator 8.10.1 - (a) Number of commercial bank branches per 100,000 adults and (b) Number of automated teller machines (ATMs) per 100,000 adults

(a) Number of commercial bank branches per 100,000 adults



Note: Data are from 2016 apart from Libya (2012), Syrian Arab Republic (2013) and Egypt, Sudan and Yemen (2015).

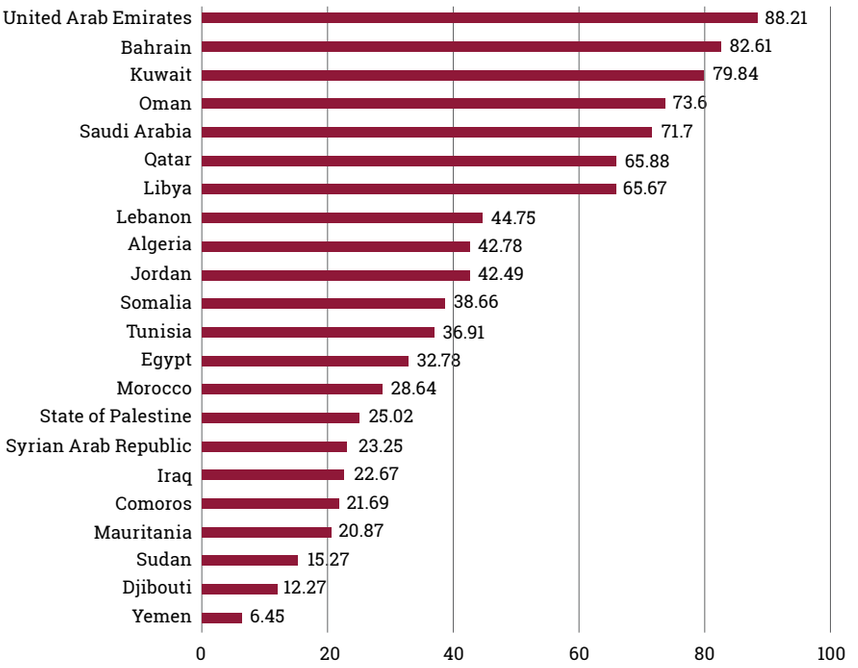
(b) Number of automated teller machines (ATMs) per 100,000 adults



Note: Data are from 2016 apart from Libya and Syrian Arab Republic (2012) and Egypt, Iraq, Sudan and Yemen (2015).

Figure 8.7 Indicator 8.10.2 - Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider

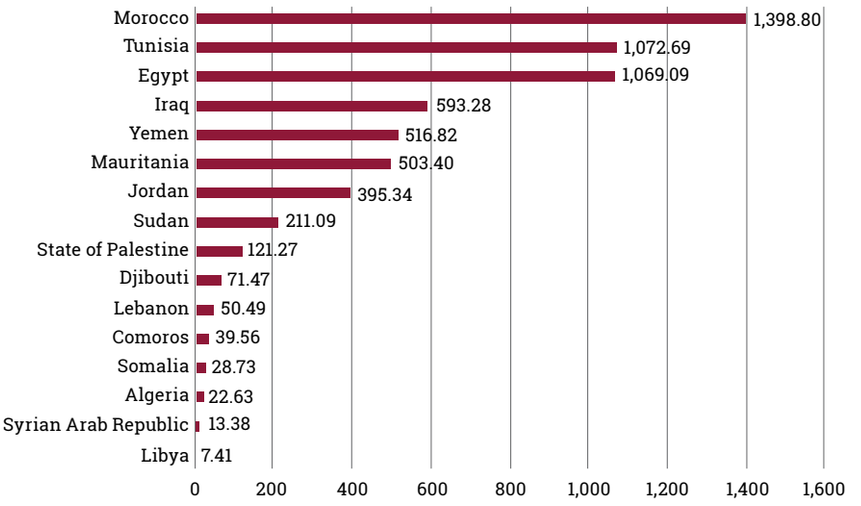
Proportion of adults with an account at a bank or other financial institution or with a mobile-money-service provider (percentage)



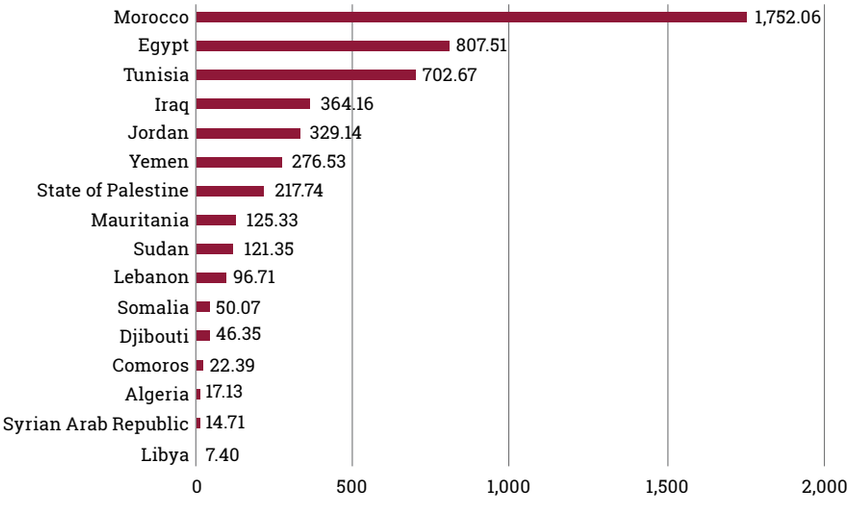
Note: Data are from 2017 apart from Comoros, Djibouti, Oman, Qatar and Syrian Arab Republic (2011) and Somalia, Sudan and Yemen (2014).

Figure 8.8 Two series of indicator 8.a.1 - Aid for Trade commitments and disbursements

Total official flows committed for Aid for Trade (millions of constant 2017 United States dollars)



Total official flows disbursed for Aid for Trade, by recipient (millions of constant 2017 United States dollars)



Note: Data for 8.a.1 are from 2017.

Annex to chapter 9

1. Data for SDG 9

SDG 9 comprises eight targets and a total of 12 indicators (four of which contain multiple subindicators). Of these indicators, nine are tier I, two are tier II and one is tier III for which data are not available, as the indicator is still in the process of methodological definition.

The United Nations Statistic Division provides data sets for a total of 11 indicators: 9.1.2 - Passenger and freight volumes, by mode of transport; 9.2.1 - Manufacturing value added as a proportion of GDP and per capita; 9.2.2 - Manufacturing employment as a proportion of total employment; 9.3.1 - Proportion of small-scale industries in total industry value added; 9.3.2 - Proportion of small-scale industries with a loan or line of credit; 9.4.1 – Carbon dioxide emission per unit of value added; 9.5.1 - Research and development expenditure as a proportion of GDP; 9.5.2 - Researchers (in full-time equivalent) per million inhabitants; 9.a.1 - Total official international support (official development assistance plus other official flows) to infrastructure; 9.b.1 - Proportion of medium and high-tech industry value added in total value added; and 9.c.1 - Proportion of population covered by a mobile network, by technology. None of the provided data sets includes sex disaggregated data.

The data used in the analysis of SDG 9 was downloaded on 2 August 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 9.1.2 (Passenger and freight volumes, by mode of transport), 9.2.1 (Manufacturing value added as a proportion of GDP and per capita), 9.a.1 (Total official international support (Official development assistance plus other official flows) to infrastructure), and 9.b.1 (Proportion of medium and high-tech industry value added in total value added), as well as the third data series of 9.c.1 (Proportion of population covered by at least a 4G mobile network (percentage)) are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. When there are many subindicators that mean the same but are expressed differently (as in the case of the two series under indicator 9.2.1 and the three series under indicator 9.4.1), we choose the one among these subindicators that is more representative, is easier to interpret and has more data availability. This leads us to omit one of the two series of 9.2.1, keeping the manufacturing value added as a proportion of GDP (percentage); and one of the three series of 9.4.1, keeping the carbon dioxide emissions per unit of manufacturing value added (kilograms of carbon dioxide per constant 2010 United States dollars). On account of insufficient data availability, especially for Arab countries, we also omit two series of 9.1.2 [passenger volume by air transport (in passenger kilometres) and freight volume by air transport (in tonne-kilometres)], which only cover regions, subregions or groups of countries but not individual countries, and indicator 9.3.1 (Proportion of small-scale industries in total industry value added).

The rest of the indicators or subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 9.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 9.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
9.2.2 (Manufacturing employment as a proportion of total employment)	32 (5)	2016
	12 (1)	2015
	15 (2)	2014
	5 (0)	2013
	6 (1)	2012
	7 (1)	2011

	7 (2)	2010
	2 (0)	2009
9.3.2 (Proportion of small-scale industries with a loan or line of credit)	18 (1)	2016
	8 (0)	2015
	10 (1)	2014
	45 (6)	2013
	2 (0)	2012
	4 (1)	2011
	24 (0)	2010
	11 (0)	2009
9.4.1 (Carbon dioxide emissions per unit of manufacturing value added (kilograms of carbon dioxide per constant 2010 United States dollars))	137 (17)	2015
9.5.1 (Research and development expenditure as a proportion of GDP)	25 (4)	2016
	65 (3)	2015
	11 (1)	2014
	13 (3)	2013
	2 (0)	2012
	3 (0)	2011
	5 (1)	2010
	2 (0)	2009
9.5.2 (Researchers (in full-time equivalent) per million inhabitants)	18 (5)	2016
	57 (3)	2015
	12 (1)	2014
	11 (1)	2013
	5 (1)	2012
	3 (0)	2011
	7 (0)	2010
	2 (0)	2009

9.a.1 (Total official flows for infrastructure, by recipient countries)	2 (0)	2013
	5 (1)	2010
9.b.1 (Proportion of medium and high-tech industry value added in total value added)	147 (16)	2016
9.c.1 (Proportion of population covered by at least a 2G mobile network)	163 (16)	2016
	24 (2)	2015
	5 (1)	2014
	4 (1)	2013
	3 (1)	2012
	1 (0)	2011
9.c.1 (Proportion of population covered by at least a 3G mobile network)	204 (21)	2016
	9 (0)	2015
9.c.1 (Proportion of population covered by at least a 4G mobile network)	14 (1)	2016
	3 (0)	2015
	1 (0)	2014

No substitution was made for the chosen series of 9.2.1 (Manufacturing value added as a proportion of GDP) over the considered time interval since the corresponding data are complete for our base year (2017). As for the four remaining series of 9.1.2, data are only provided for 2017 and are complete or nearly complete for this year. Therefore, no substitution was possible or needed.

For indicator 9.a.1 (Total official flows for infrastructure, by recipient country), the main data set provided by the United Nations Statistics Division only includes recipient countries/territories and omits the donor countries/territories that then take missing values which are considered as zeros when the series' regional and global aggregates are calculated using a total sum. Hence, we consider that 22 instead of 17 Arab countries are covered by data for this indicator, knowing that the members of the Gulf Cooperation Council are donor countries whose missing data values in the original data set are equivalent to zeros (apart from Oman, the only member of the Gulf Cooperation Council that originally has a value in the data set and whose value is kept).

We visualize and analyse the Arab, regional and subregional aggregates of two of the remaining series of 9.1.2, which are related to freight volume (by road and rail transport (tonne-kilometres)), separately but in the same chart; knowing that they are on the same range, scale and unit. We use another graph to also visualize and analyse the aggregates of the two other remaining series of 9.1.2, which are related to passenger volume (by road and rail transport (passenger kilometres)), separately but in the same chart; knowing that they are on the same range, scale and unit as well. Similarly, we visualize and analyse the three series of 9.c.1 separately but in the same bar chart since they are on the same scale, range and unit, and since they measure different levels of the mobile network coverage dimension.

This leaves us with 13 integral indicators/subindicators with which we can assess the position of the region, as noted in box 9.1.

Box 9.1	Summary list of preserved and examined indicators/subindicators

- Indicator 9.1.2 – 4 series out of 6 – Passenger and freight volumes, by mode of transport
- Indicator 9.2.1 – 1 series out of 2 – Manufacturing value added as a proportion of GDP and per capita
- Indicator 9.2.2 – Manufacturing employment as a proportion of total employment
- Indicator 9.3.2 – Proportion of small-scale industries with a loan or line of credit
- Indicator 9.4.1 – 1 series out of 3 – Carbon dioxide emission per unit of value added
- Indicator 9.5.1 – Research and development expenditure as a proportion of GDP
- Indicator 9.5.2 – Researchers (in full-time equivalent) per million inhabitants
- Indicator 9.a.1 – Total official international support (official development assistance plus other official flows) to infrastructure
- Indicator 9.b.1 – Proportion of medium and high-tech industry value added in total value added
- Indicator 9.c.1 – Proportion of population covered by a mobile network, by technology

All targets are evaluated, if not fully then partially.

Accordingly, all targets are evaluated; if not fully, then partially through some of their indicators/subindicators. The non-featured indicators/subindicators, whether due to insufficient data or to other reasons, can be determined from table 9.2 on targets, indicators, tiers and data availability for Arab countries for SDG 9.

Annex 9.2 for a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of 9.a.1 and the preserved series of 9.1.2 are calculated using a total sum. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the series/indicators whose global, regional and subregional aggregates are weighted averages: Total population in 2015 (from the World Population Prospects); Total GDP (constant 2010 United States dollars) for the year 2017 (from the World Development Indicators Database); Total GDP (constant 2011 PPP) for the year 2015 (from the World Development Indicators Database); Total employment (in thousands) in 2016 (from the International Labor Organization); Total GDP (constant 2010 United States dollars) for the year 2013 (from the World Development Indicators Database); Total manufacturing value added (constant 2010 United States dollars) in 2015 (from the World Development Indicators Database); and Total manufacturing value added (constant 2010 United States dollars) in 2016 (from the World Development Indicators Database). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We note that, when a certain series or indicator (namely SDGs 9.5.2 and 9.c.1) need a population-related weighting variable in 2016 or 2017, we use the latest available data for this variable, i.e. data for 2015, provided by the World Population Prospects. For 9.3.2, we are obliged to compromise the weighting variable itself with a proxy one because we ideally need to weight by the "total number of small-scale industries" (according to the metadata and the official definition of the indicator) in 2013 but the data that we found for this variable (including data from the IFC and the World Bank Enterprise Survey) is of insufficient coverage for the world's countries, in general, and especially the Arab countries, for all the available years that we can consider. Therefore, we decide to weight by total GDP for the year 2013 (the most commonly used year for the data of the indicator in question) instead, since a country's GDP has a considerable impact on the number of small-scale industries in it and thus can serve as a proxy for the latter.

Finally, we note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies for the preserved series of 9.2.1 where 19 Arab countries out of a potential of 22 are covered after weighting, for 9.3.2 where eight Arab countries out of a potential of nine are covered after weighting, for the preserved series of 9.4.1 where 14 Arab countries out of a potential of 17 are covered after weighting, and for 9.b.1 where 15 Arab countries out of a potential of 16 are covered after weighting. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries that have data for the evaluated series/indicator, regardless of the data availability of the weighting variable.

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For indicator 9.c.1, to "Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020", we consider the target values for each of the three series as 100 per cent of the population covered by at least a 2G mobile network, 100 per cent of the population covered by at least a 3G mobile network, and 100 per cent of the population covered by at least a 4G mobile network, respectively; noting that a country, region, or subregion would be considered to have achieved the target if at least one of these three target values are met (i.e. if it provides, for 100 per cent of its population, 2G or 3G or 4G mobile network) and ultimately the last one which is related to the 4G mobile network coverage. However, it is not possible to infer the official desired target values for any of the other evaluated indicators and thus they are not shown.

Table 9.2 Targets, indicators, tiers and data availability for Arab countries – SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation)

Target	Indicator	Number of subindicators	Tier	Data availability*
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.1 Proportion of the rural population who live within 2 km of an all-season road	(No data)	Tier III	x
	9.1.2 Passenger and freight volumes, by mode of transport	4 chosen out of 6	Tier I	22
9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	9.2.1 Manufacturing value added as a proportion of GDP and per capita	1 chosen out of 2	Tier I	22
	9.2.2 Manufacturing employment as a proportion of total employment	1 chosen out of 1	Tier I	12
9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	9.3.1 Proportion of small-scale industries in total industry value added	(Dropped) 1	Tier II	x
	9.3.2 Proportion of small-scale industries with a loan or line of credit	1 chosen out of 1	Tier II	9

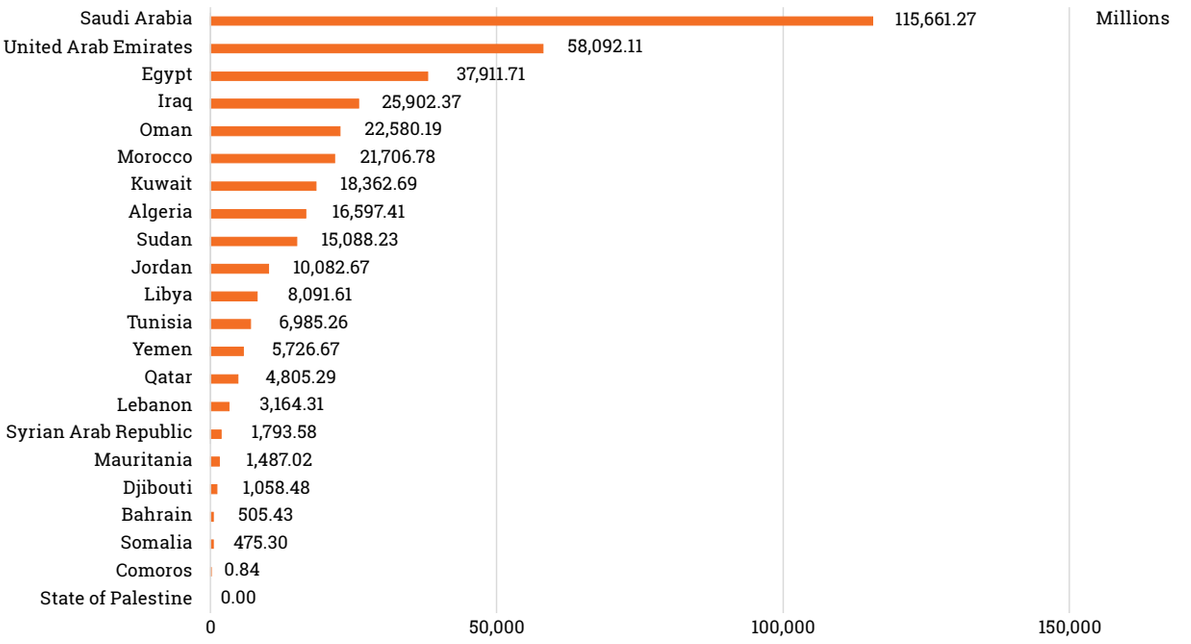
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	9.4.1 Carbon dioxide emission per unit of value added	1 chosen out of 3	Tier I	17
9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	9.5.1 Research and development expenditure as a proportion of GDP	1 chosen out of 1	Tier I	12
	9.5.2 Researchers (in full-time equivalent) per million inhabitants	1 chosen out of 1	Tier I	11
9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure	1 chosen out of 1	Tier I	22
9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	9.b.1 Proportion of medium and high-tech industry value added in total value added	1 chosen out of 1	Tier I	16
9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020	9.c.1 Proportion of population covered by a mobile network, by technology	3 chosen out of 3	Tier I	21, 21, 22

Note: We note that the weighting variables sometimes prevent us from evaluating the series/indicator using its full data that is available/provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the weighting variable's data availability.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

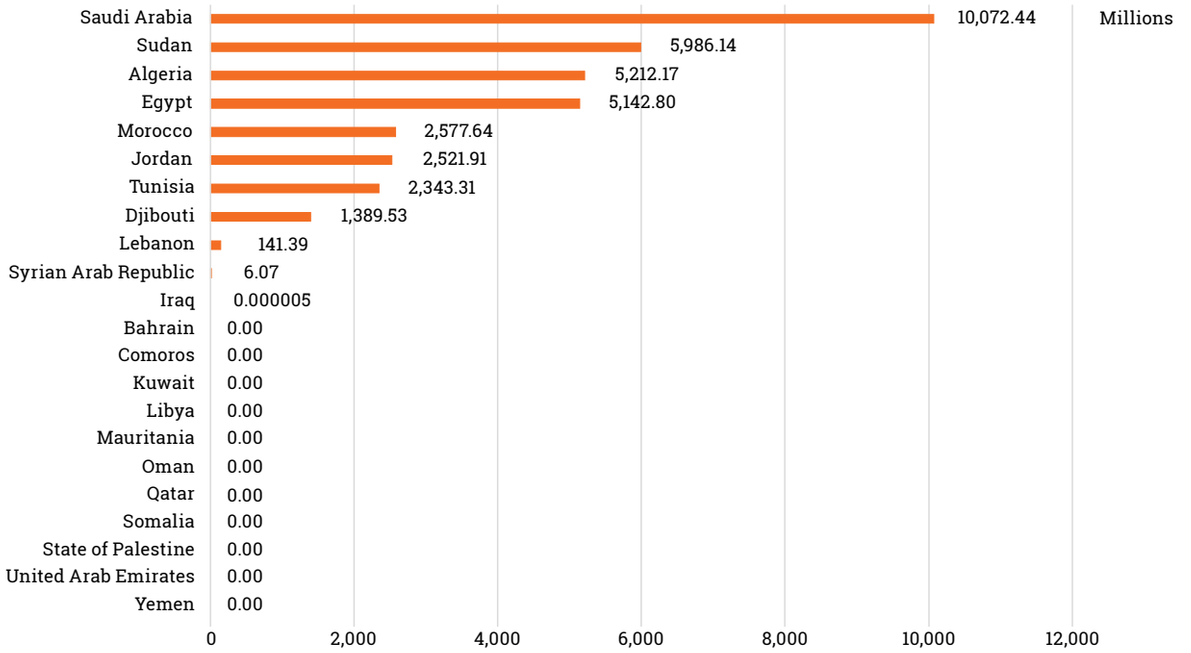
2. Country graphs

Figure 9.1 Four series of indicator 9.1.2 - Passenger and freight volumes, by mode of transport

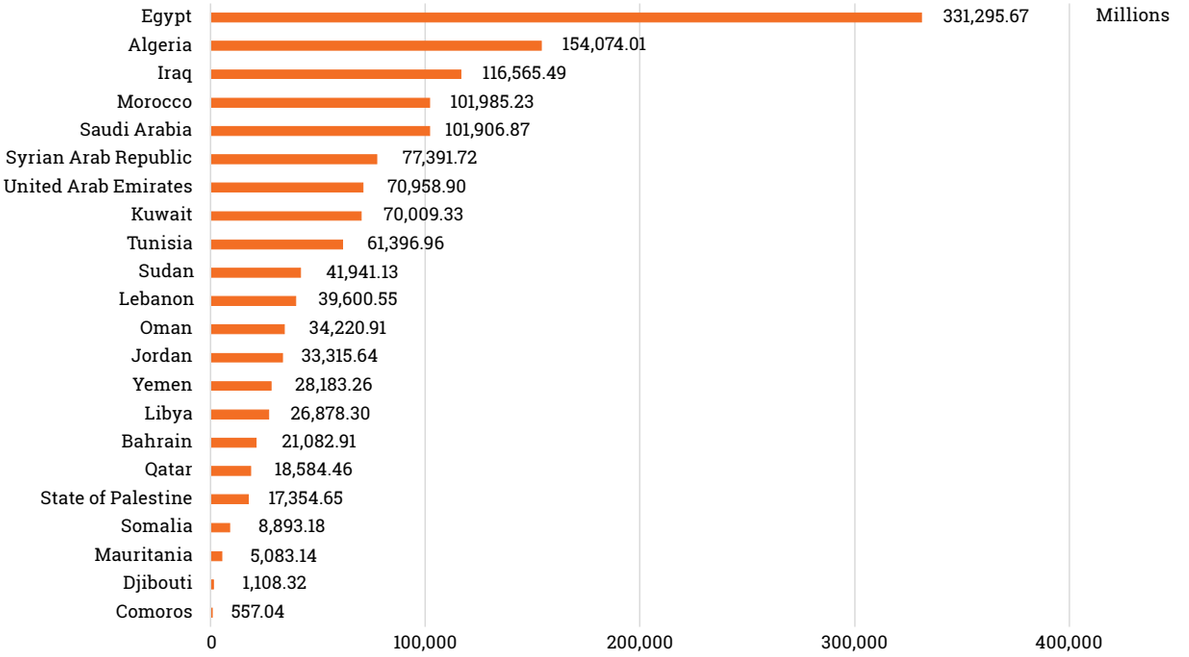
Freight volume by road transport (tonne-kilometres)



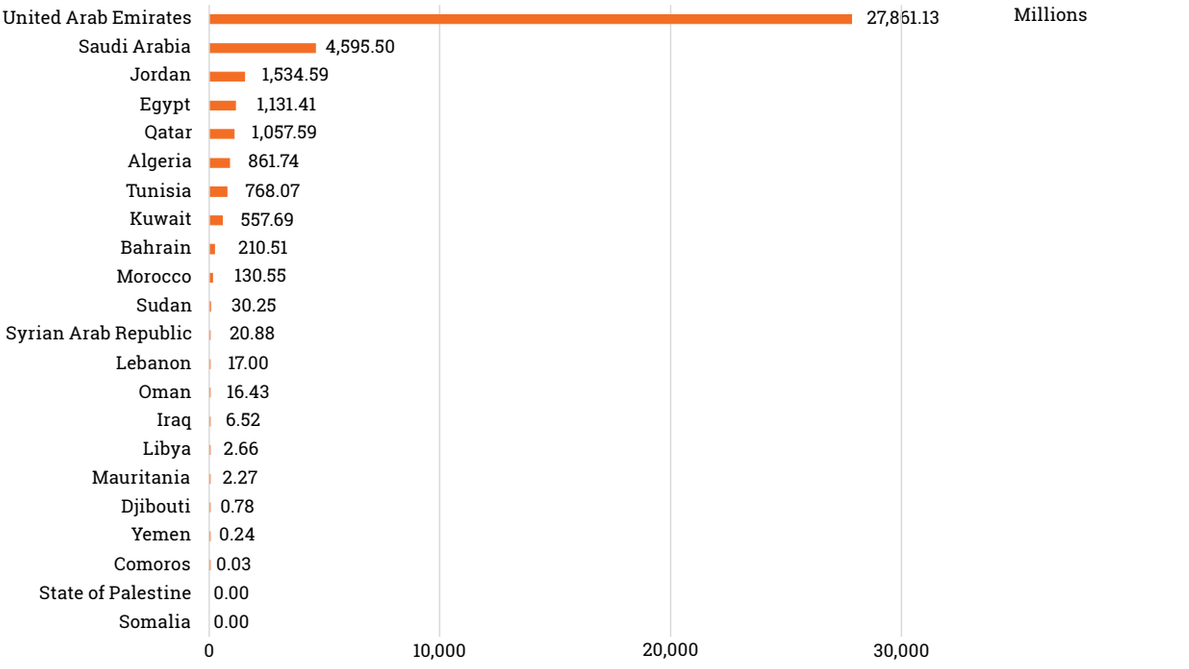
Freight volume by rail transport (tonne-kilometres)



Passenger volume by road transport (passenger kilometres)



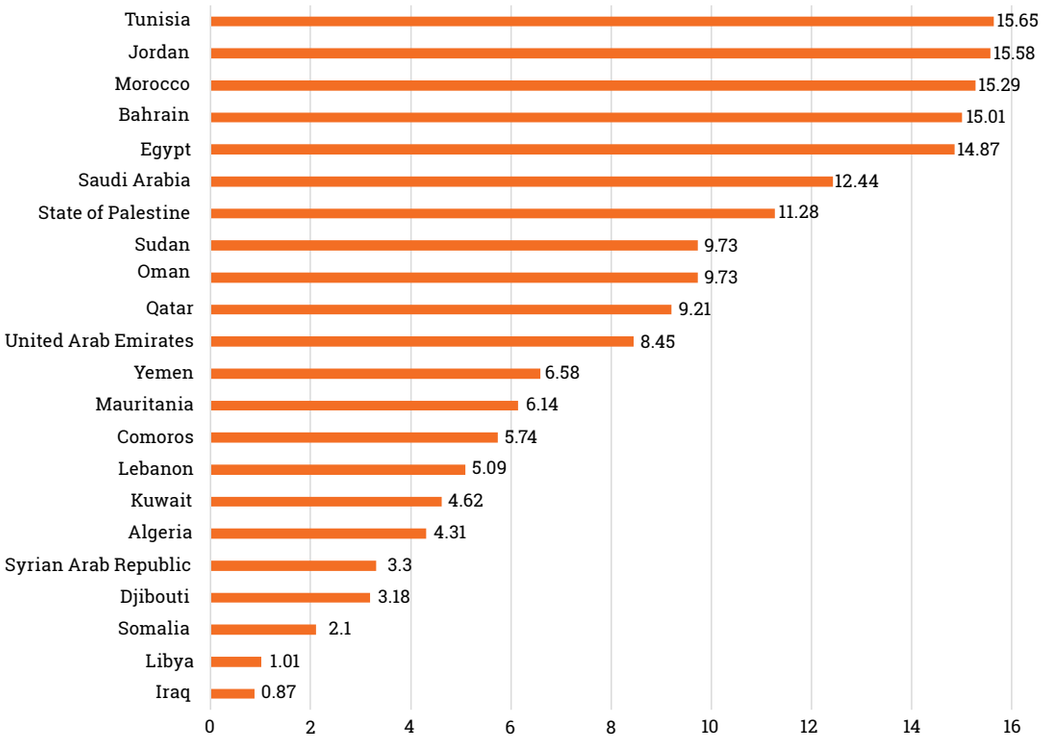
Passenger volume by rail transport (passenger kilometres)



Note: All data for indicator 9.1.2 are from 2017.

Figure 9.2 Indicator 9.2.1 - Manufacturing value added as a proportion of GDP and per capita

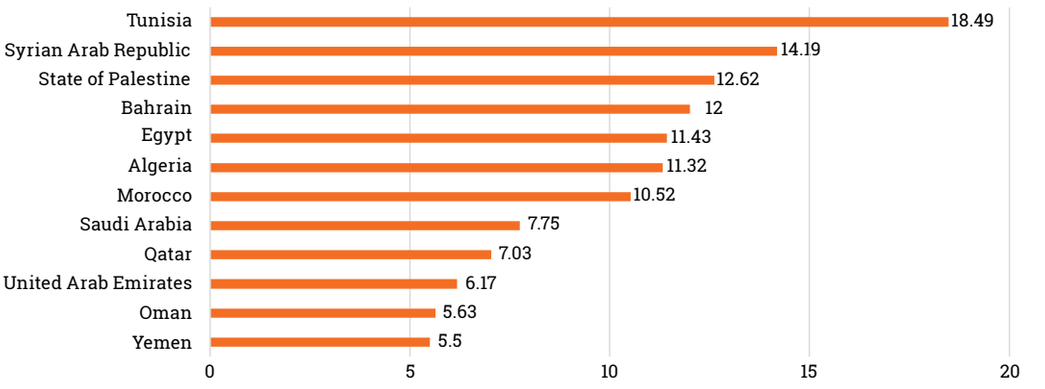
Manufacturing value added as a proportion of GDP (percentage)



Note: All data are from 2017.

Figure 9.3 Indicator 9.2.2 - Manufacturing employment as a proportion of total employment

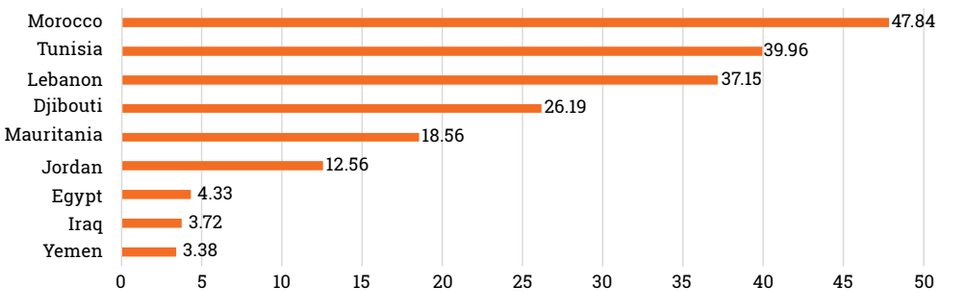
Manufacturing employment as a proportion of total employment (percentage)



Note: Data are from various years as follows: Bahrain, Oman (2010), Syrian Arab Republic (2011), Morocco (2012), Algeria, Yemen (2014), Tunisia (2015), Egypt, Saudi Arabia, State of Palestine, Qatar, United Arab Emirates (2016).

Figure 9.4 Indicator 9.3.2 - Proportion of small-scale industries with a loan or line of credit

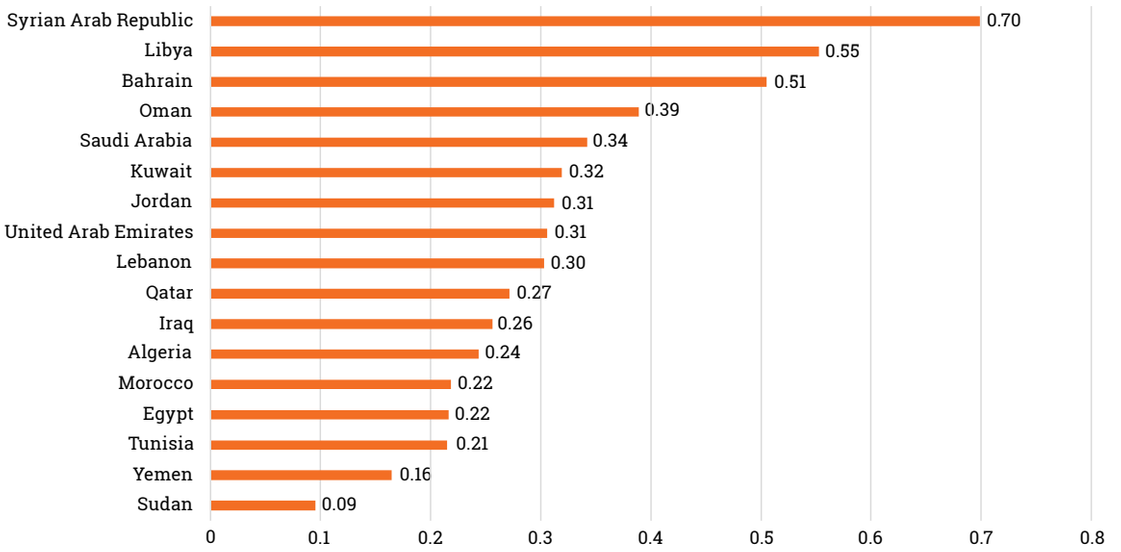
Proportion of small-scale industries with a loan or line of credit (percentage)



Note: All data are from 2013 apart from Iraq (2011), Mauritania (2014) and Egypt (2016).

Figure 9.5 Indicator 9.4.1 - Carbon dioxide emission per unit of value added

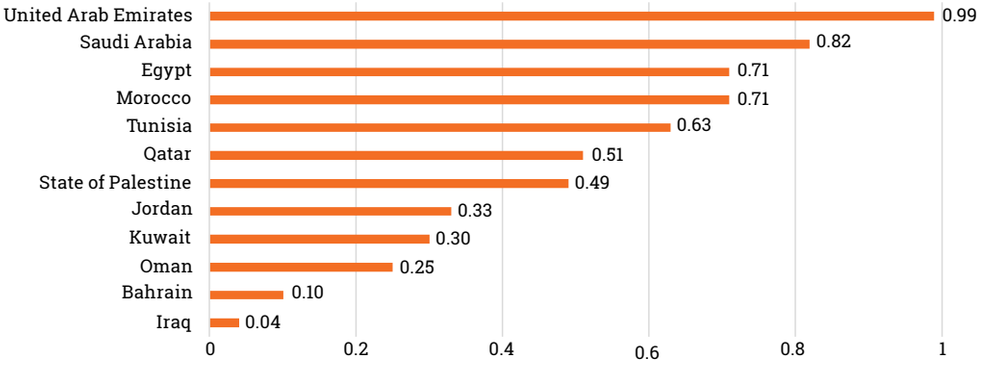
Carbon dioxide emissions per unit of manufacturing value added (kilograms of carbon dioxide per constant 2010 United States dollars)



Note: All data are from 2015.

Figure 9.6 Indicator 9.5.1 - Research and development expenditure as a proportion of GDP

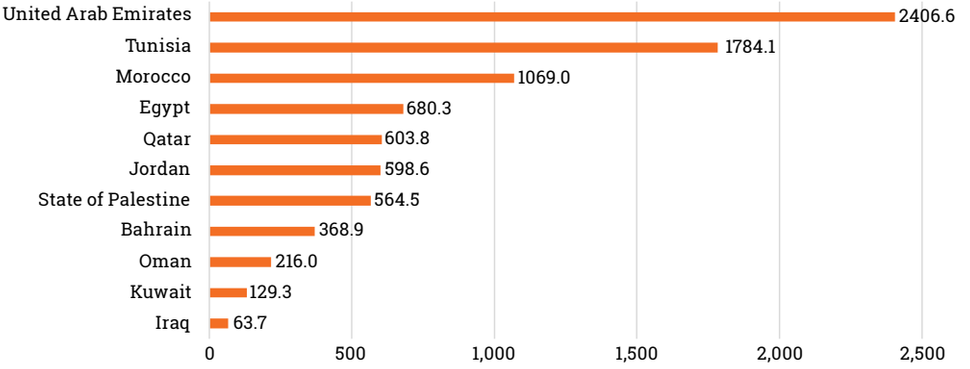
Research and development expenditures as a proportion of GDP (percentage)



Note: Data are from various years as follows: Morocco (2010), Kuwait, Saudi Arabia, State of Palestine (2013), Bahrain (2014), Oman, Qatar, Tunisia (2015), Egypt, Iraq, Jordan, United Arab Emirates (2016).

Figure 9.7. Indicator 9.5.2 - Researchers (in full-time equivalent) per million inhabitants

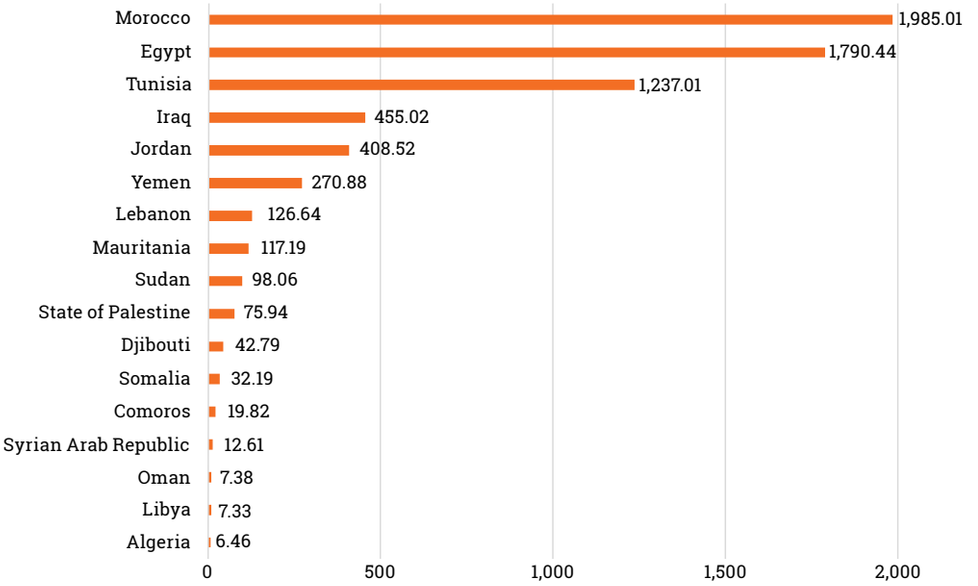
Number of researchers in full-time equivalent (per million inhabitants)



Note: Data are from various years as follows: Kuwait (2012), State of Palestine (2013), Bahrain (2014), Oman, Qatar, Tunisia (2015), Egypt, Iraq, Jordan, Morocco, United Arab Emirates (2016).

Figure 9.8 Indicator 9.a.1 - Total official international support (official development assistance plus other official flows) to infrastructure

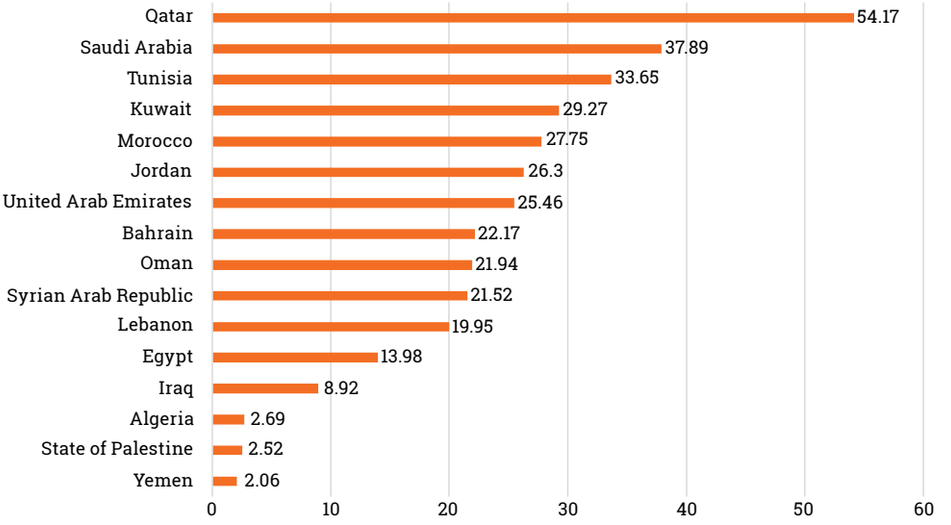
Total official flows for infrastructure, by recipient countries (millions of constant 2017 United States dollars)



Note: All data are from 2017 apart from Oman (2010).

Figure 9.9 Indicator 9.b.1 - Proportion of medium and high-tech industry value added in total value added

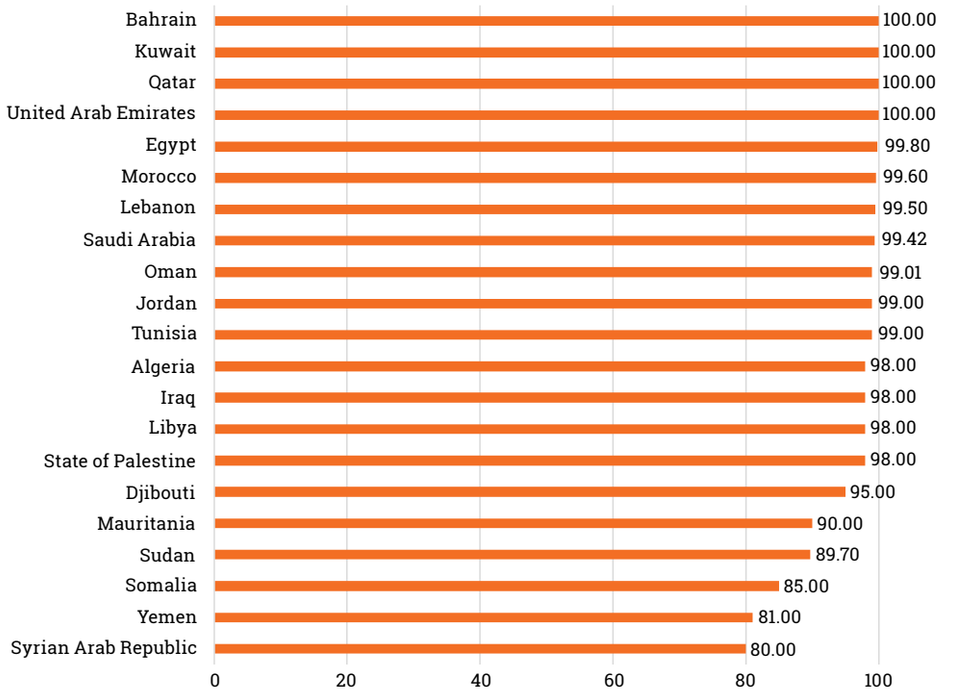
Proportion of medium and high-tech industry value added in total value added (percentage)



Note: All data are from 2016.

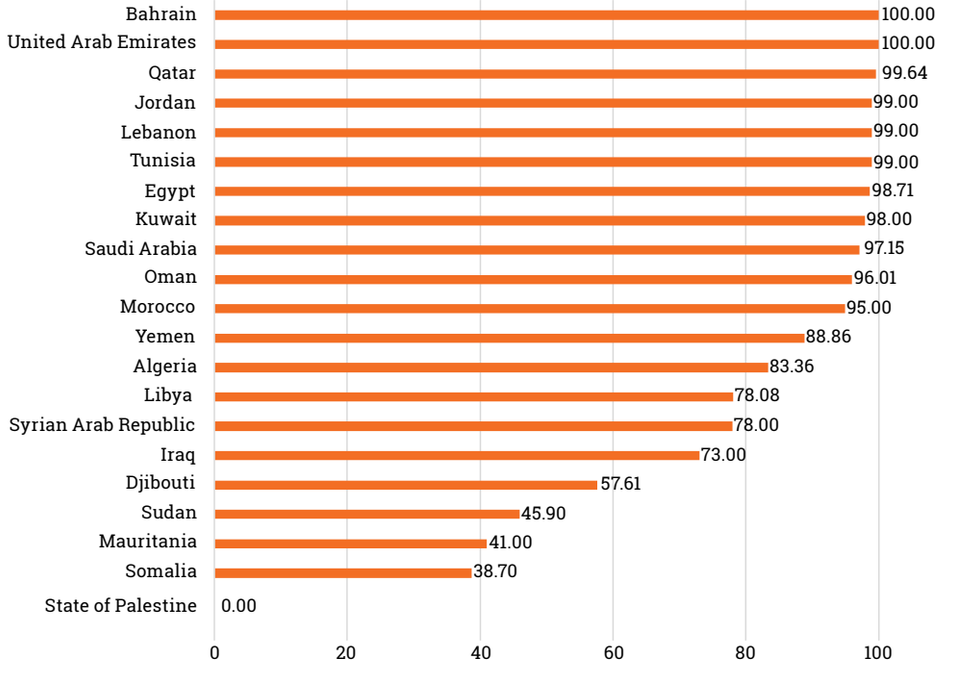
Figure 9.10 Indicator 9.c.1 - Proportion of population covered by a mobile network, by technology

2G mobile network (percentage)



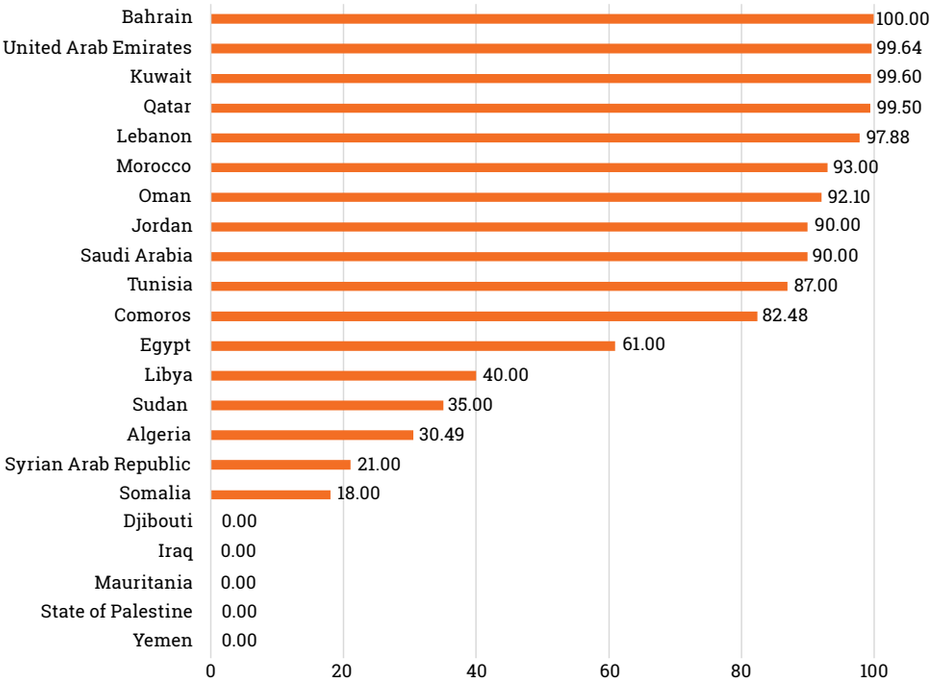
Note: All data are from 2016 apart from Djibouti (2012), Libya (2013), Somalia (2014), and Lebanon, Iraq (2015).

3G mobile network (percentage)



Note: All data are from 2016.

4G mobile network (percentage)



Note: All data are from 2017.

Annex to chapter 10

1. Data for SDG 10

SDG 10 comprises 10 targets and a total of 11 indicators (four of which contain multiple subindicators). Of these indicators, two are tier I, three are tier II and five are tier III for which data are not available, as the indicators are still in the process of methodological definition. In addition, there is also one more indicator (10.b.1) which is labeled as "Tier I (ODA)/Tier II (FDI)" given that it measures "Total resource flows for development, by recipient and donor countries and type of flow (e.g. ODA, FDI, and other flows)".

The United Nations Statistics Division provides data sets for a total of six indicators: 10.1.1 - Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population; 10.4.1 - Labour share of GDP, comprising wages and social protection transfers; 10.6.1 - Proportion of members and voting rights of developing countries in international organizations; 10.a.1 - Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff; 10.b.1 - Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows); and 10.c.1 - Remittance costs as a proportion of the amount remitted.

None of the provided data sets includes sex disaggregated data.

Data used in SDG 10 analysis was downloaded on 4 September 2018. After the country level data check after a major update of the Global SDG Indicators Database of the United Nations Statistics Division 8 July 2019, no large differences were found, and none of the data series needed to be replaced.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total Arab region's population and at least the third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 10.1.1, 10.4.1 and 10.a.1, 8 of the 22 series of 10.6.1, and two of the three series of 10.b.1.

Indicator 10.6.1 includes 22 subindicators. 11 of them represent "the proportion of members" in each of 11 different international organizations, where the proportion of members is calculated by the data source as the country/territory's membership seat divided by the total available membership seats for a certain international organization or, in the case of regional observations, as the number of members from a certain region in that organization divided by the total number of members (percentage). The other 11 subindicators represent "the proportion of voting rights" in each of 11 different international organizations, where the proportion of voting rights is calculated by the data source as the share of the country/territory/region's voting right in a certain organization, which sometimes depends on the country/territory/region's share or contribution in this organization, divided by the total voting rights granted (percentage). We omit all the series corresponding to region-based international organizations (i.e. the Asian Development Bank, the African Development Bank and the Inter-American Development Bank) as they only cover a specific sample of the world's countries/territories, unlike the rest of the organizations. We also omit the series corresponding to the Financial Stability Board which only consists of 24 member developed countries/territories (with China being the only emerging country) entitled to provide mentorship and advice to developing countries on financial issues and related international- standard setting mechanisms. All these omitted series also have poor data availability for Arab countries throughout their time spans. Consequently, only seven data series are left for each of the memberships and the voting rights dimensions, informing on the rest of the seven international organizations.

We transform each of the seven remaining subindicators that report on the countries/territories' memberships in the considered international organizations into a dummy variable, merely considering the year 2017, where a country/territory takes a value of one if it is a member of the organization in question in 2017 and a value of zero otherwise. In other terms, countries/territories that have a missing value instead of a proportion of membership value in the original data series for 2017 are all assigned zeros. We create our own dummy variables because the calculation method provided by the original data source only provides the share of developing countries in each organization, which does not vary from observation to observation, while what we need is to know whether or not a certain country/territory is a member of a certain organization and to develop a score showing the countries/territories' situation at this level across all organizations. The seven dummy variables are then aggregated using a simple arithmetic mean, yielding country/territory-specific mean scores.

As for the seven remaining subindicators that report on the voting rights, we keep them as they are and only for the year 2017, and then we replace the missing values by zeros, since a country/territory has a missing value for its voting right in a certain organization when it is not a member of this institution, meaning also that consequently its voting rights are non-existent or zero. The seven data series on voting rights are also aggregated using a simple arithmetic mean that is divided by 100 to get the share instead of the percentage of voting rights, for the purpose of getting to the same 0–1 range used in the previous variable for this target. After that, their Arab, subregional and regional means are generated and visualized separately but in the same chart.

Accordingly, there is no need to apply our data substitution scheme for year 2017 on indicator 10.6.1 since, logically and technically, the two created and evaluated aggregates do not suffer any problem of data availability and also fully cover the World and the Arab region.

We note that the series depicting the voting rights at the IFC mistakenly has a value of 4.053E-06 for Luxembourg, which is an IFC member, though. By referring to the original data source, as advised by the SDG Indicators Metadata Repository of the United Nations Statistics Division, this close-to-null value is corrected to 0.11 per cent. Moreover, we note that the State of Palestine does not exist in any of the data series under 10.6.1 and is assigned a value of zero in all of them.

For 10.b.1, we drop the series which represents total assistance for development by donor (where data is provided for only 48 donor countries) and the series which represents total resource flows for development by recipient and donor countries (where no Arab country is covered). We only keep the third series which represents total assistance for development, by recipient (in millions of current United States dollars) which reflects the distribution of development assistance (ODA) to recipient countries and thus the pattern of the donor countries' contribution and assistance, knowing that donor countries are in the driving seat in development financing. Therefore, the results derived from this preserved series can help with the formulation of policy recommendations as they indicate if there is a need for donor countries to alter the amount of development assistance they pledge or to reconsider the countries/territories/regions they target.

The remaining indicators are subject to our data substitution scheme for the year 2017, considering data spanning 2009–2017. Table 10.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 10.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
10.b.1 (Total assistance for development, by recipient (in millions of current United States dollars))	143 (16)	2016
	2 (0)	2013
	5 (1)	2010
10.c.1 (Remittance costs as a proportion of the amount remitted)	1 (0)	2011

In addition, we note that the selected series indicator 10.b.1 comprises both positive and negative (and economically significant) values as it measures Net ODA which, according to the OECD, includes loan repayments that are "recorded as negative and deducted from ODA and loans". "In some cases loan repayments are higher than new ODA and net ODA will show as a negative number".

This leaves us with 16 integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 10.1.

Box 10.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 10.6.1 – 14 series out of 22 - Proportion of members and voting rights of developing countries in international organizations
- Indicator 10.b.1 – 1 series out of 3 - Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)
- Indicator 10.c.1 – Remittance costs as a proportion of the amount remitted

However, we lose the ability to determine the region's position on the rest of the targets, indicators, and subindicators as noted in box 10.2, including those that exist in table 10.2 on targets, indicators, tiers and data availability in the Arab region for SDG 10, but do not have sufficient data.

Box 10.2	**Summary list of omitted targets**

- 10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average
- 10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
- 10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
- 10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
- 10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations
- 10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies
- 10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements

Annex 10.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of series of 10.6.1 and 10.c.1 are calculated using as unweighted means, while the series of 10.b.1 is calculated as a total sum. The method of aggregation, in general, is chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The chapter includes more details about the aggregation methods per each series.

We calculate the world, regional and subregional averages for each indicator and include the Target value – when available – to facilitate comparability. For 10.c which aims to make "transaction costs for migrant remittances be 3% or less, by 2030" and "to eliminate corridors where cost is 5% or higher" by that time, according to the SDG Indicators Metadata Repository, we set the target value as 3 per cent of remittance costs as a proportion of the amount remitted. However, for targets 10.6 and 10.b, it is not possible to infer the official desired target values and thus they are not shown.

Table 10.2 Targets, indicators, tiers and data availability for Arab countries – SDG 10 (Reduce inequality within and among countries)

Target	Indicator	Number of subindicators	Tier	Data availability*
10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	10.1.1 Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population	(Dropped) 2	Tier II	x
10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	10.2.1 Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities	(No data)	Tier III	x
10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	10.3.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law	(No data)	Tier III	x
10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	10.4.1 Labour share of GDP, comprising wages and social protection transfers	(Dropped) 1	Tier II	x
10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations	10.5.1 Financial Soundness Indicators	(No data)	Tier III	x

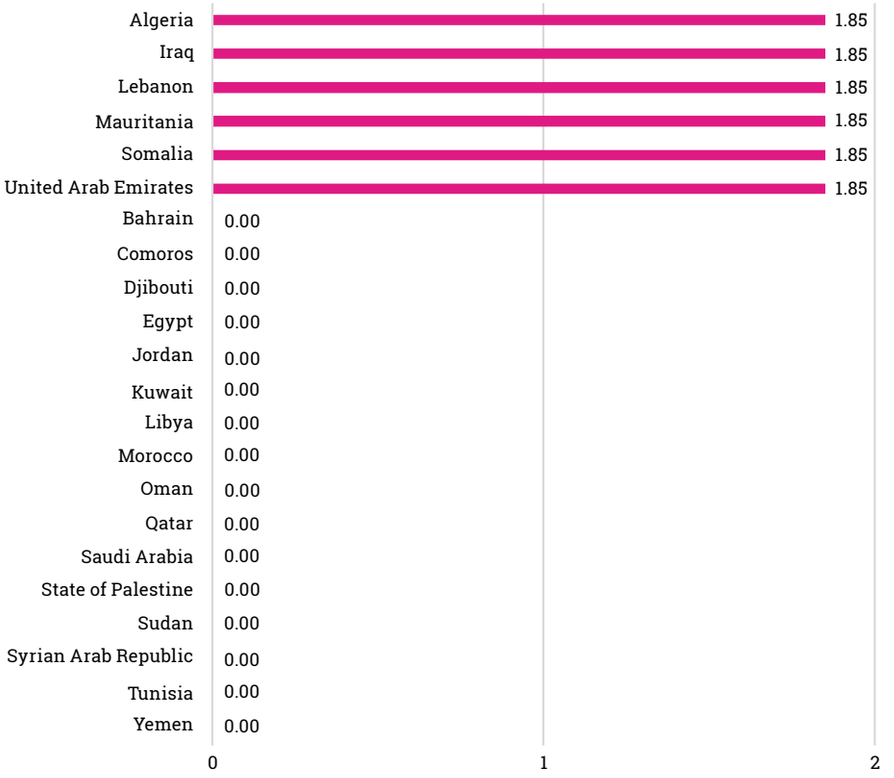
10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions	10.6.1 Proportion of members and voting rights of developing countries in international organizations	14 chosen out of 22	Tier I	22
10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies	10.7.1 Recruitment cost borne by employee as a proportion of yearly income earned in country of destination	(No data)	Tier III	x
	10.7.2 Number of countries that have implemented well-managed migration policies	(No data)	Tier III	x
10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements	10.a.1 Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff	(Dropped) 7	Tier I	x
10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes	10.b.1 Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)	1 chosen out of 3	Tier I (ODA)/ Tier II (FDI)	22
10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent	10.c.1 Remittance costs as a proportion of the amount remitted	1 chosen out of 1	Tier II	12

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

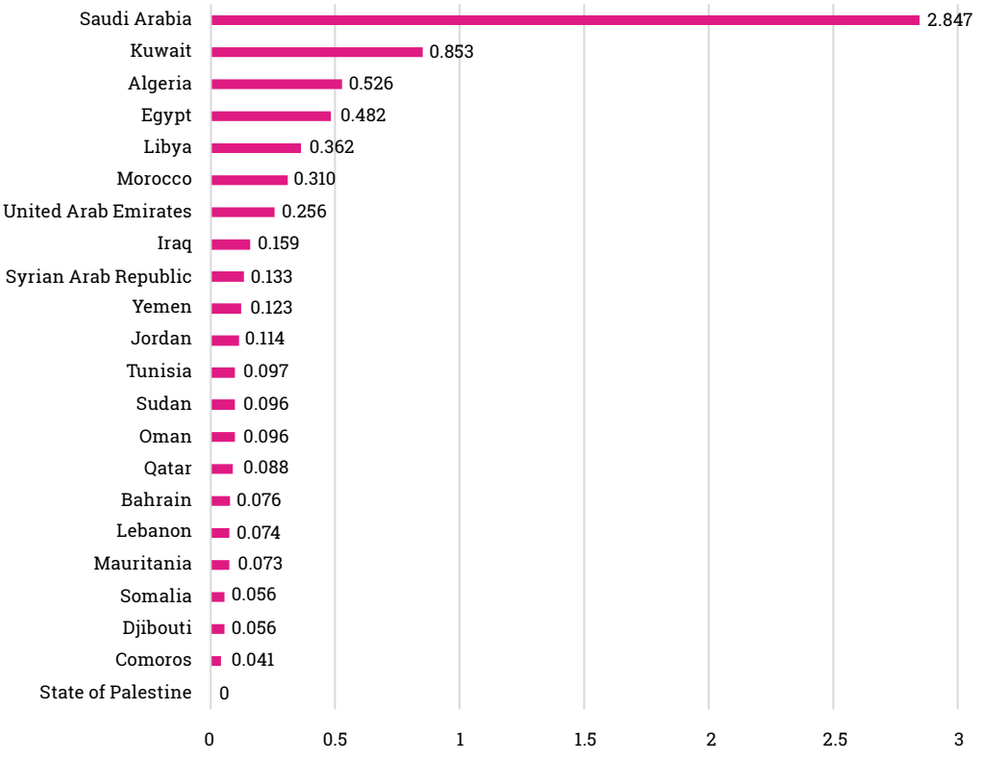
2. Country graphs

Figure 10.1 Fourteen series of indicator 10.6.1 - Proportion of members and voting rights of developing countries in international organizations

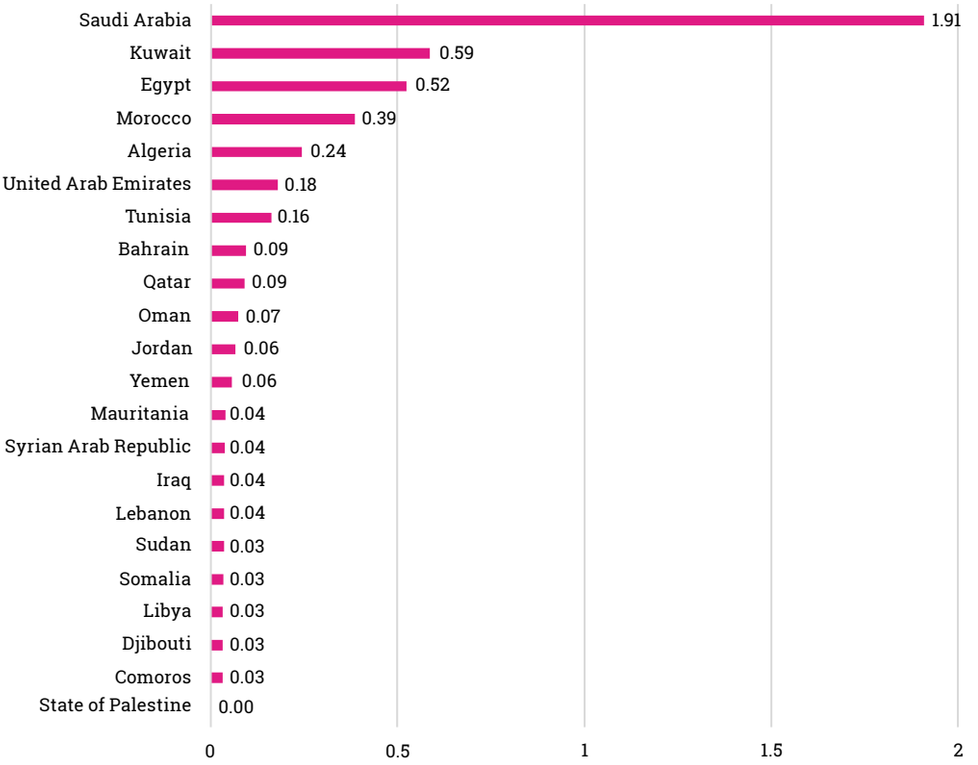
Proportion of voting rights in the Economic and Social Council of the United Nations (percentage)



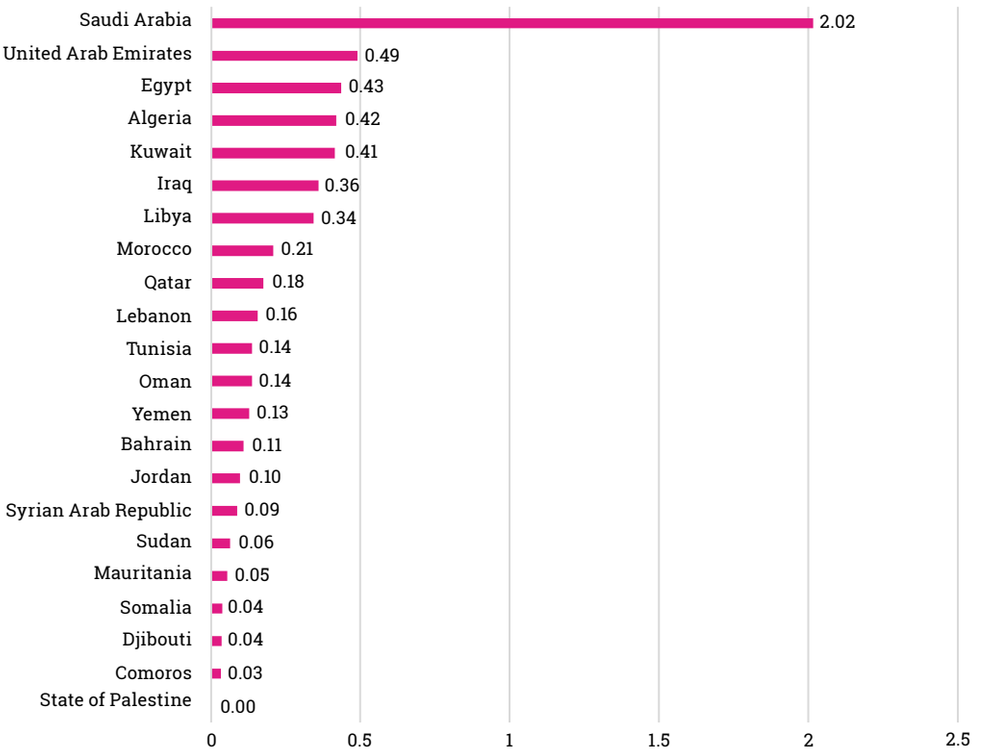
Proportion of voting rights in the International Bank for Reconstruction and Development (percentage)



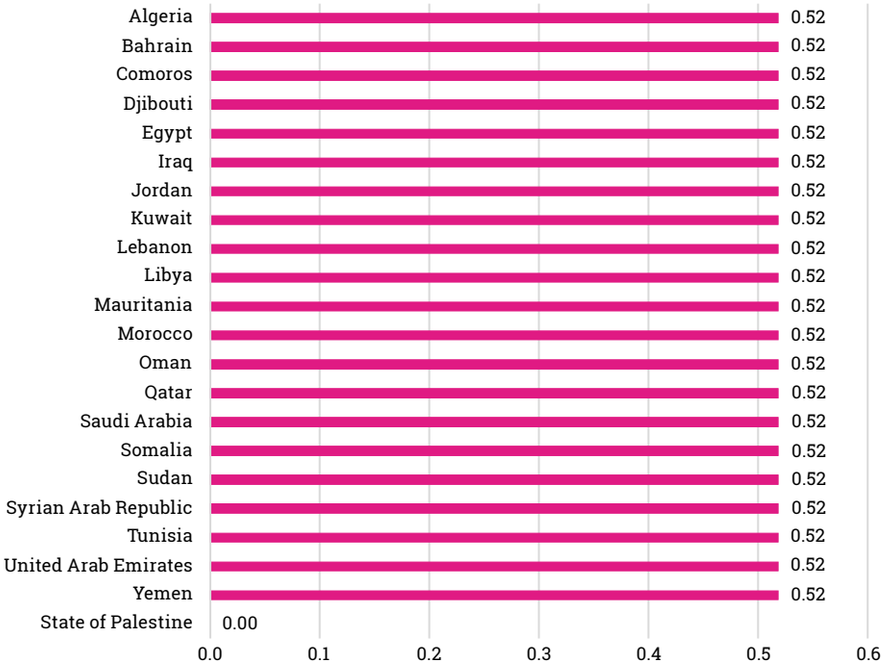
Proportion of voting rights in the International Finance Corporation (percentage)



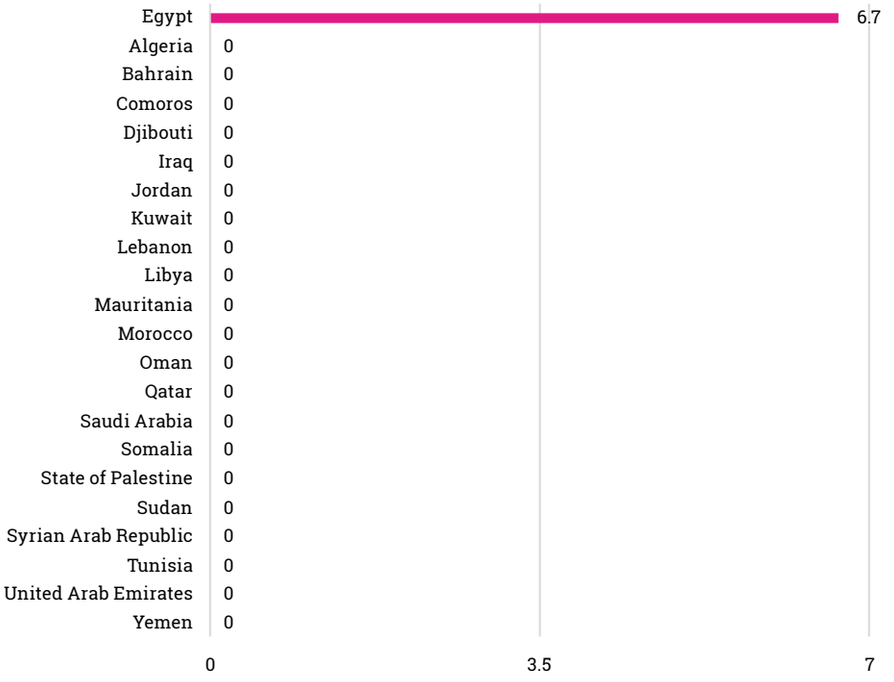
Proportion of voting rights in the International Monetary Fund (percentage)



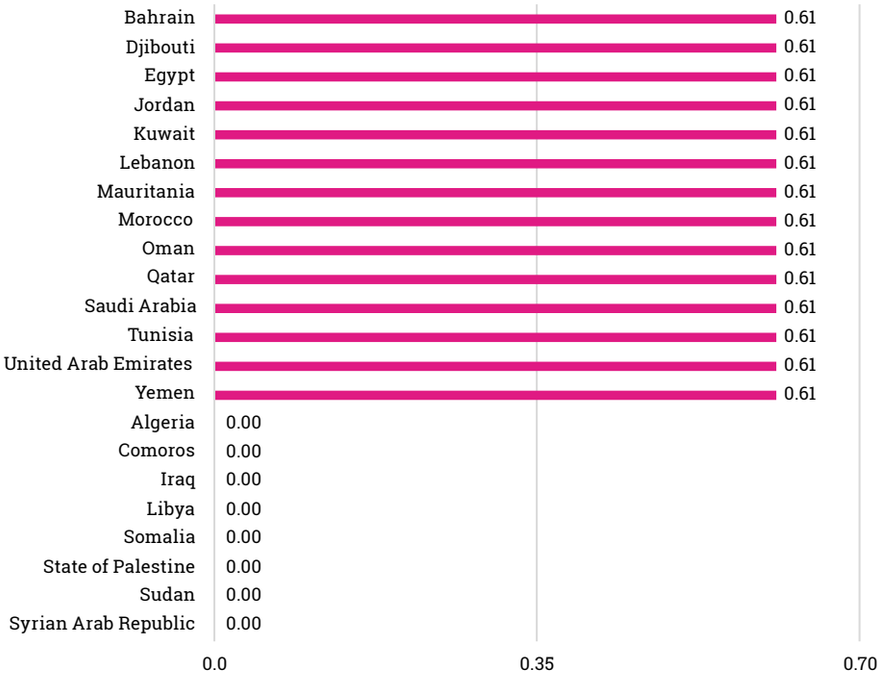
Proportion of voting rights in the United Nations General Assembly (percentage)



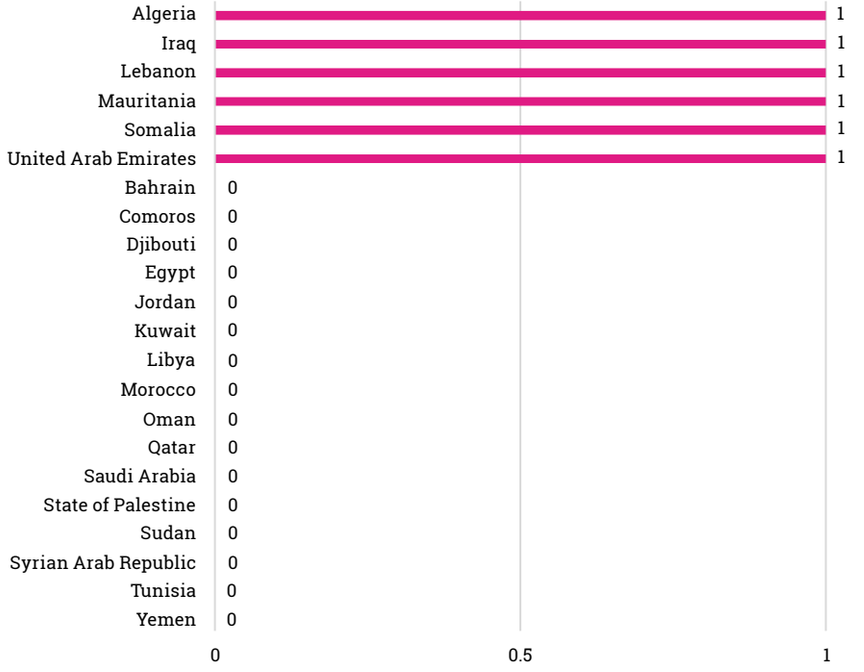
Proportion of voting rights in the United Nations Security Council (percentage)



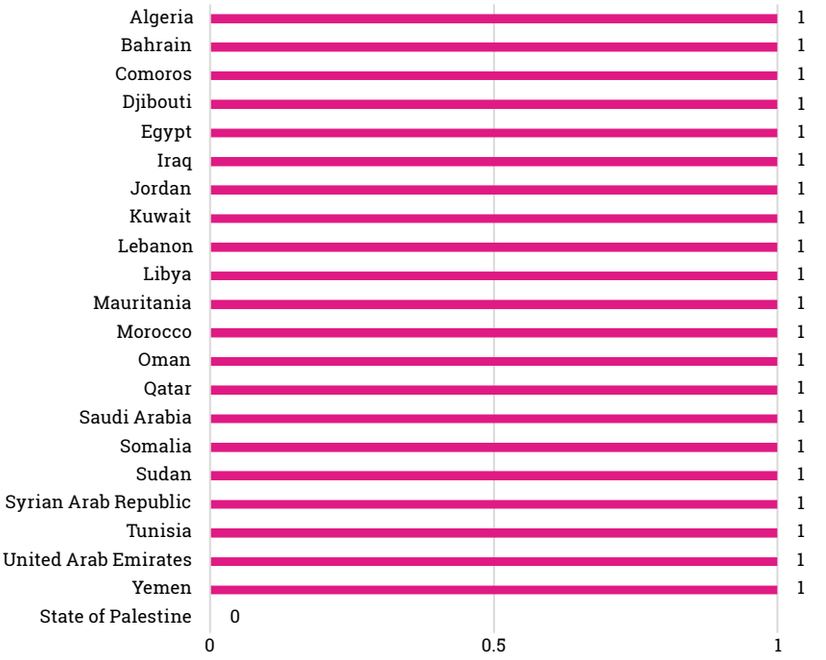
Proportion of voting rights in the World Trade Organization (percentage)



Membership in the Economic and Social Council of the United Nations (0-1 dummy variable)



Membership in the International Bank for Reconstruction and Development (0-1 dummy variable)

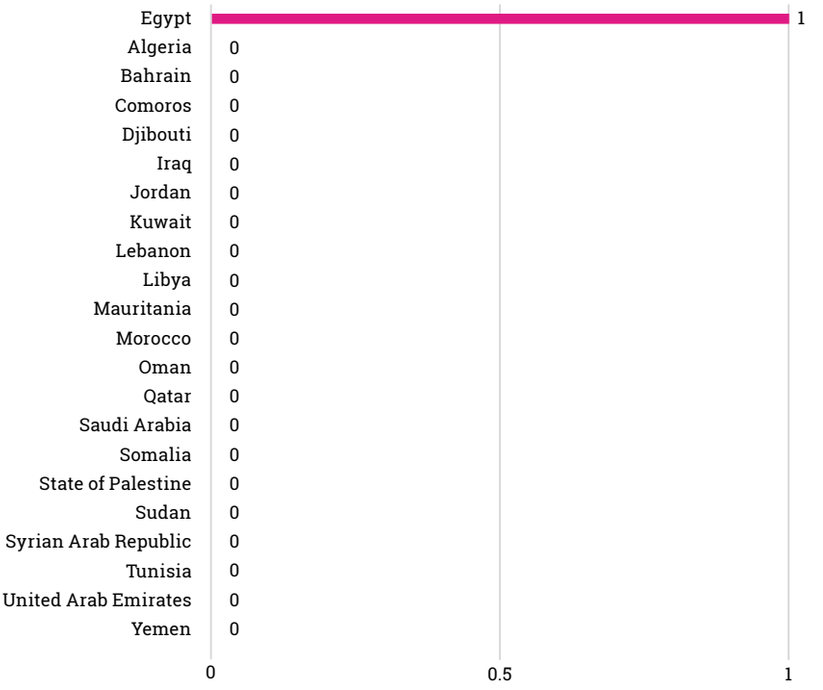


Membership in the International Finance Corporation (0-1 dummy variable)

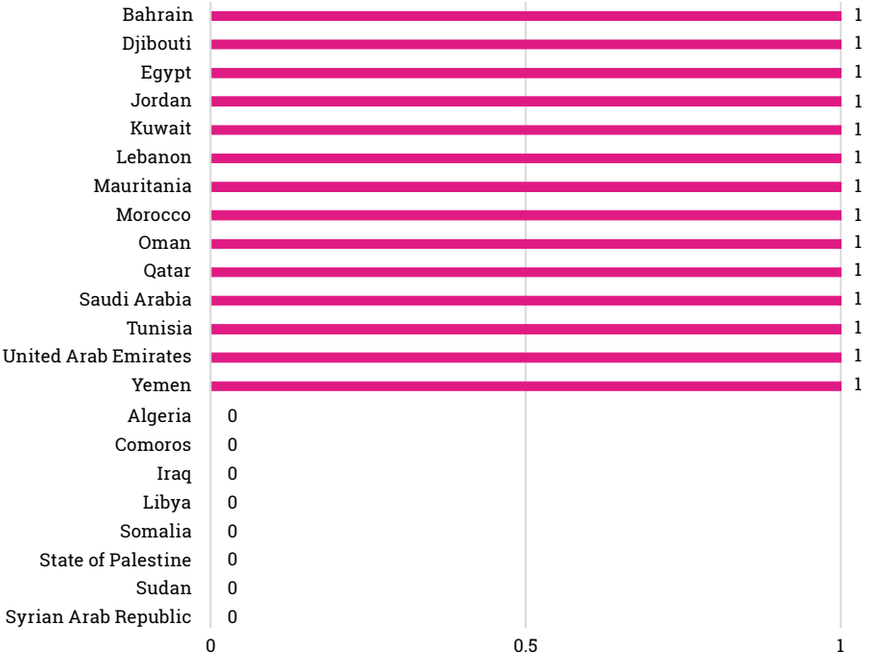
Membership in the International Monetary Fund (0-1 dummy variable)

Membership in the United Nations General Assembly (0-1 dummy variable)

Membership in the United Nations Security Council (0-1 dummy variable)



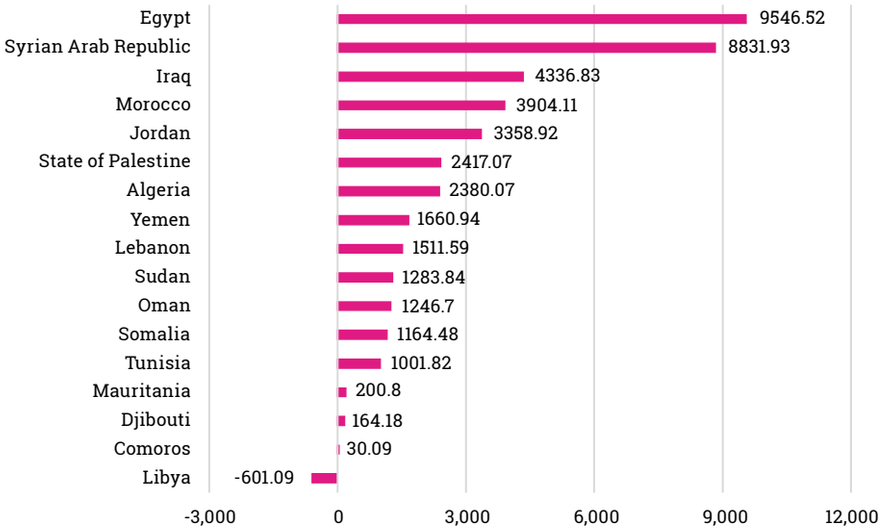
Membership in the World Trade Organization (0-1 dummy variable)



Note: All data for indicator 10.6.1 are from 2017.

Figure 10.2 Indicator 10.b.1 - Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)

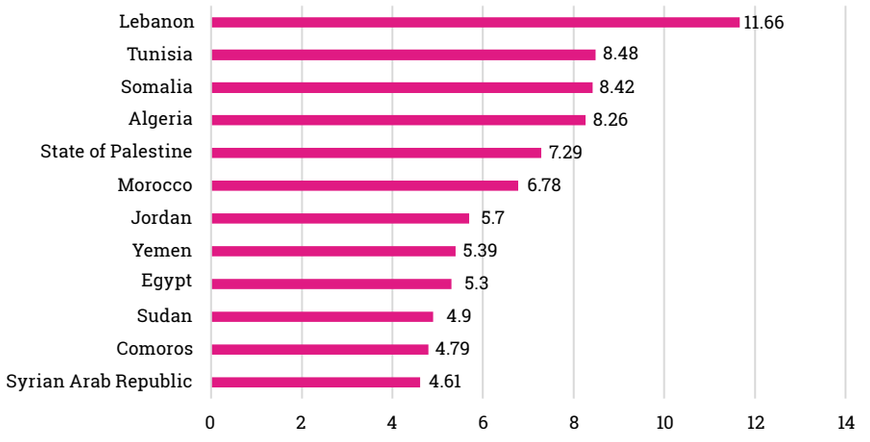
Total assistance for development, by recipient (millions of current United States dollars)



Note: All data are for 2016 apart from Oman (2010).

Figure 10.3 Indicator 10.c.1 - Remittance costs as a proportion of the amount remitted

Remittance costs as a proportion of the amount remitted (percentage)



Note: All data are from 2017.

Annex to chapter 11

1. Data for SDG 11

SDG 11 comprises 10 targets and a total of 15 indicators (four of which contain multiple subindicators). Of these indicators, four are tier I, five are tier II, and six are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of seven indicators: 11.1.1 - Proportion of urban population living in slums, informal settlements or inadequate housing; 11.5.1 - Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population; 11.5.2 - Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters; 11.6.1 - Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities; 11.6.2 - Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted); 11.b.1 - Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030; and 11.b.2 - Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies.

None of the provided data sets includes sex disaggregated data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicator 11.6.1.

Indicator 11.5.1 is exactly the same as 13.1.1 and 1.5.1 (Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population) which we assess in all chapters. Indicator 11.b.1 is the exact repetition of 1.5.3 and 13.1.2 and is omitted for the same reason for which these two other indicators were in other respective chapters: insufficient data availability. Moreover, 11.b.2 is the exact repetition of 1.5.4 and 13.1.3 and is omitted as well for the same reason for which these two other indicators were omitted in other respective chapters: insufficient data availability.

Data used in SDG 11 analysis was downloaded on 10 September 2018. After the country level data check following a major global update from the United Nations Statistics Division of 8 July 2019, three series of 11.5.1 (Number of people affected by disaster (number); Number of deaths due to disaster (number); Number of missing persons due to disaster (number)) and one series of 1.5.2 (Direct economic loss attributed to disasters (millions of current United States dollars)) are replaced with amended data.

Indicator 11.5.1 has subindicators, some of which mean the same but are expressed differently, include other subindicators thematically or join two subindicators in one. Some of these subindicators address material losses due to disasters, namely damaged or destroyed dwellings, without referring to the affected people. Moreover, three of these subindicators include disaggregation by “hazard type” with an extensive number of categories (59; making 189 total series under 11.5.1), yet they are incomplete when looking consistently across countries/territories. We present a summary of the series of 11.5.1 series and how they relate to each other in table 11.1.

Table 11.1 Summary of the series provided by the United Nations Statistics Division for indicator 11.5.1 (also for indicator 13.1.1)

Series 1	**Number of people affected by disaster**	
Series 2	Number of injured or ill people attributed to disasters	Included in the first series
Series 3	Number of people whose livelihoods were disrupted or destroyed, attributed to disasters	
Series 4	Number of people whose damaged dwellings were attributed to disasters	
Series 5	Number of people whose destroyed dwellings were attributed to disasters	
Series 6	Number of directly affected persons attributed to disasters per 100,000 population	Expressed differently
Series 7	**Number of missing persons due to disaster**	
Series 8	**Number of deaths due to disaster**	
Series 9	Number of deaths and missing persons attributed to disasters, **by hazard type**	Joins the two series and with disaggregation by hazard type
Series 10	Number of deaths and missing persons attributed to disasters	Joins the two series
Series 11	Number of deaths and missing persons attributed to disasters per 100,000 population	Joins the two series and expressed differently
Series 12	**Number of damaged dwellings attributed to disasters**	
Series 13	Number of damaged dwellings attributed to disasters, **by hazard type**	With disaggregation by hazard type
Series 14	**Number of destroyed dwellings attributed to disasters**	
Series 15	Number of destroyed dwellings attributed to disasters, **by hazard type**	With disaggregation by hazard type

We observe that series 2, 3, 4 and 5 are included in series 1; series 6 is just a different way to express series 1; each of series 9, 10 and 11 join series 7 and 8 whereby series 9 also comes with disaggregation by hazard type and series 11 is also a different way to express series 10; and that series 13 and 15 are nothing but the respective hazard type disaggregated versions of series 12 and 14. When there are many subindicators that mean the same but are expressed differently, we choose the one among these subindicators that is more representative, is easier to interpret, and has more data availability. Furthermore, when a series thematically covers the other, we only keep the series which has the broader measure. In light of all this, we only preserve and evaluate the following five subindicators from 11.5.1: Number of people affected by disaster, Number of missing persons due to disaster, Number of deaths due to disaster, Number of damaged dwellings attributed to disasters, and Number of destroyed dwellings attributed to disasters. The five remaining subindicators are subject to our data substitution scheme for the year 2017, in order to ensure the desired data coverage (table 11.2).

The SDG Indicators Metadata Repository of the United Nations Statistics Division recommends calculations of 11.5.1 as a simple summation of related indicators (death, missing people and affected people) from national disaster loss databases divided by the global population data and expressed in per 100.000 people, which however would cause us to loose half of the available observations. Thus, we report on all three people-related series in 11.5.1 separately and express them per 100.000 national population, while for the two dwellings-related series where the availability of data for all Arab countries is the same for both, we add them together and form a sum.

Indicator 11.5.2 is very similar to 1.5.2 as it measures the direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters. In fact, this indicator is composed of 16 different subindicators, two of which have disaggregation by "hazard type" that is extensive in terms of the number of disaggregation categories included (59 categories; making 132 total series under 11.5.2) but is yet incomplete when looking consistently across countries/territories. Therefore, we drop these two disaggregated subindicators, noting that this does not entail any loss of informational value since each one of them has a sister subindicator that measures the same dimension but without being disaggregated. This leaves us with 14 subindicators with no disaggregation. According to the SDG Indicators Metadata Repository and the computation method it presents, 12 of these subindicators are included (thematically) in the following two subindicators: "Direct economic loss attributed to disasters (millions of current United States dollars)" and "Direct economic loss attributed to disasters relative to GDP (percentage)". As these two latter subindicators mean the same, are as inclusive and have the same data availability but are just expressed differently, whereby the second one is expressed relative to global GDP and not to domestic GDP (which does not make it more indicative), we only keep the first subindicator "Direct economic loss attributed to disasters (millions of current United States dollars)" and we omit the second one.

The remaining subindicators of 11.1.1, 11.5.1, 11.5.2 and 11.6.2 are subject to our data substitution scheme for the year 2017, considering the data of the years spanning 2009–2017. Table 11.2 shows the number of substituted data points for each year, including those from Arab countries.

Table 11.2 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
11.1.1 (Proportion of urban population living in slums)	96 (14)	2014
11.5.1 (Number of people affected by disaster (number))	13 (0)	2016
	6 (0)	2015
	13 (1)	2014
	7 (1)	2013
	5 (1)	2012
	3 (1)	2011

	5 (1)	2010
	2 (1)	2009
11.5.1 (Number of deaths due to disaster (number))	15 (1)	2016
	9 (0)	2015
	11 (1)	2014
	7 (1)	2013
	3 (1)	2012
	6 (1)	2011
	5 (1)	2010
	1 (1)	2009
11.5.1 (Number of missing persons due to disaster (number))	9 (0)	2016
	7 (0)	2015
	5 (0)	2014
	4 (0)	2013
	5 (0)	2012
	3 (2)	2011
	7 (2)	2010
	4 (1)	2009
11.5.1 (Number damaged dwellings attributed to disasters (number)) and (Number destroyed dwellings attributed to disasters (number))	6 (0)	2016
	14 (0)	2015
	24 (3)	2014
	10 (2)	2013
	4 (1)	2012
	4 (0)	2011
	4 (1)	2010
	3 (1)	2009

11.5.2 (Direct economic loss attributed to disasters (millions of current United States dollars))	9 (0)	2016
	8 (0)	2015
	14 (1)	2014
	7 (2)	2013
	3 (0)	2012
	6 (2)	2011
	3 (1)	2010
	2 (1)	2009
11.6.2 (Annual mean levels of fine particulate matter in cities, urban population (micrograms per cubic meter))	190 (21)	2016

We note that the provided data for 11.6.2 are disaggregated by location. While the data are provided for the total area and for urban areas, we choose to consider the urban data because the evaluated indicator and target address cities, in general. According to the SDG Indicators Metadata Repository, 11.6.2 represents the "mean annual concentration of fine suspended particles of less than 2.5 microns in diameters (PM2.5), where the mean is a population-weighted average for urban population". Moreover, both the "total" and the "urban" series have the same data availability and are highly correlated (at 99.61 per cent), which further supports our choice to study the urban data instead of the alternative.

This leaves us with eight integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 11.1.

Box 11.1 **Summary list of preserved and examined indicators/subindicators**

- Indicator 11.1.1 – Proportion of urban population living in slums, informal settlements or inadequate housing
- Indicator 11.5.1 – 5 series out of 189 – Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
- Indicator 11.5.2 – 1 series out of 132 – Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters
- Indicator 11.6.2 – Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)

However, we lose the ability to determine the region's position on the rest of the targets, indicators and subindicators as noted in box 11.2, including those in table 11.3 on targets, indicators, tiers and data availability in Arab countries for SDG 11, but that do not have sufficient data.

Box 11.2 **Summary list of omitted targets**

- 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

- 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- 11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
- 11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- 11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- 11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
- 11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

Annex 11.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of two series of 11.5.1 and 11.5.2 are calculated using a total sum. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator or the latest available year. The following weights were used for the indicators/series whose global, regional and subregional aggregates are weighted averages: Total urban population for the year 2014 and 2016 (from World Urbanization Prospects 2017), and Total Population in 2015 (from World Population Prospects). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We calculate the world, regional and subregional averages for each indicator and include the target value – when available – to facilitate comparability. For 11.1.1 whose aim is to "ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums, by 2030", we consider the target value as zero for the proportion of urban population living in slums. However, for 11.5.1, 11.5.2 and 11.6.2, it is not possible to infer the official desired target values and thus they are not shown.

Table 11.3 Targets, indicators, tiers and data availability for Arab countries – SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable)

Target	Indicator	Number of subindicators	Tier	Data availability*
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing	1 chosen out of 1	Tier I	14
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities	(No data)	Tier II	x
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	11.3.1 Ratio of land consumption rate to population growth rate	(No data)	Tier II	x
	11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically	(No data)	Tier III	x
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)	(No data)	Tier III	x
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	11.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	5 chosen out of 189**	Tier II	12, 11, 6, 12, 12
	11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters	1 chosen out of 132***	Tier II	12

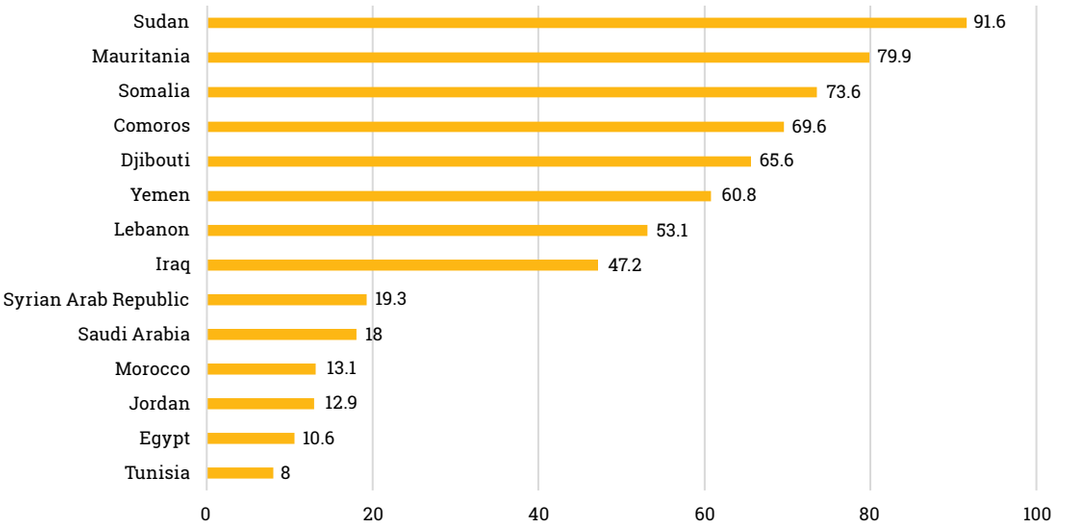
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities	(Dropped) 1	Tier II	x
	11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	1 chosen out of 1	Tier I	21
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities	(No data)	Tier III	x
	11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months	(No data)	Tier III	x
11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	11.a.1 Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city	(No data)	Tier III	x
11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	11.b.1 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030	(Dropped) 2	Tier I	x
	11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	(Dropped) 3	Tier II	x
11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials	11.c.1 Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials	(No data)	Tier III	x

* Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
** For indicator 11.5.1, there exist 15 main series, 3 of which have disaggregation by hazard type (consisting of 59 different categories). Therefore, the total number of series for this indicator is 189, out of which we choose to keep only five series.
*** For indicator 11.5.2, there exist 16 main series, two of which have disaggregation by hazard type (consisting of 59 different categories). Therefore, the total number of series for this indicator is 132, out of which we choose to keep only one series.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 11.1 Indicator 11.1.1 - Proportion of urban population living in slums, informal settlements or inadequate housing

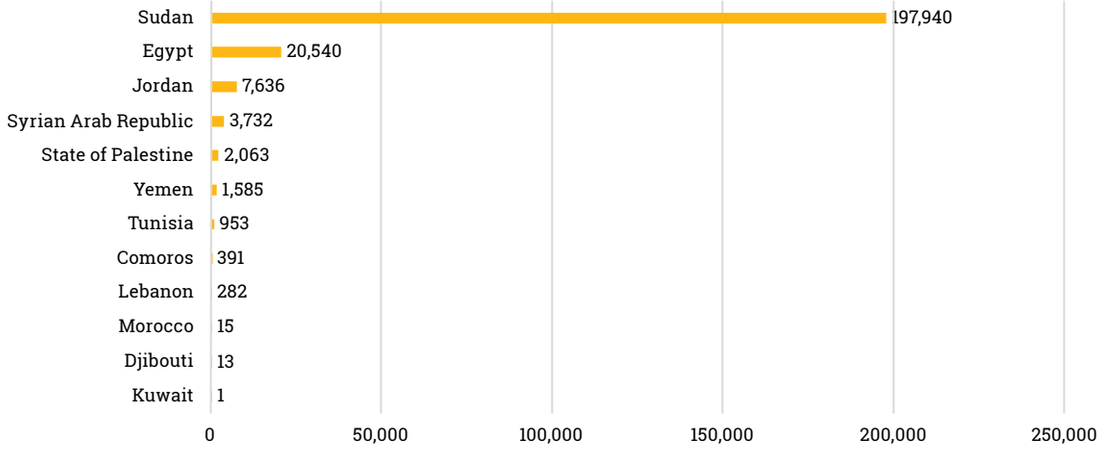
Proportion of urban population living in slums, informal settlements or inadequate housing



Note: All data are from 2014.

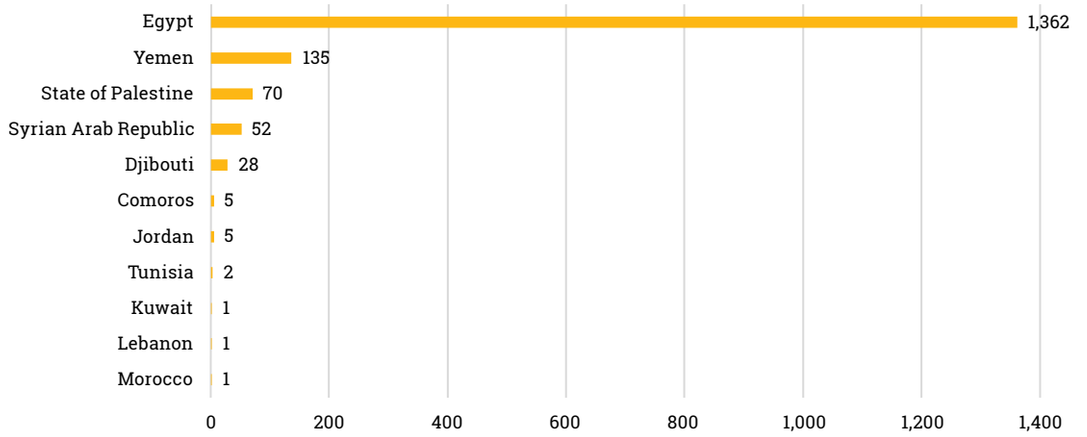
Figure 11.2 Five series of indicator 11.5.1 - Number of deaths, missing persons and persons affected by disaster per 100,000 people

Number of people affected by disaster (number)



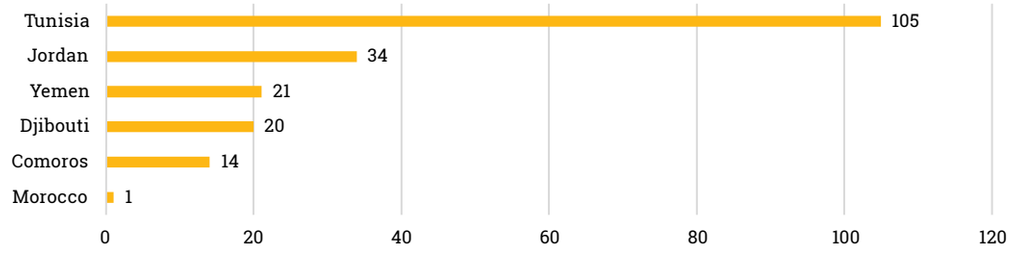
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013) and Morocco (2014).

Number of deaths due to disaster (number)



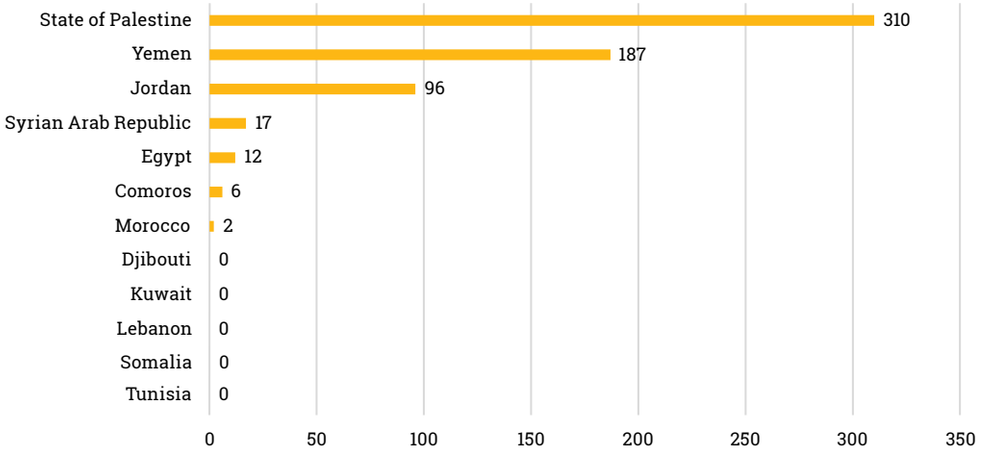
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013), Morocco (2014) and Lebanon (2016).

Number of missing persons due to disaster (number)



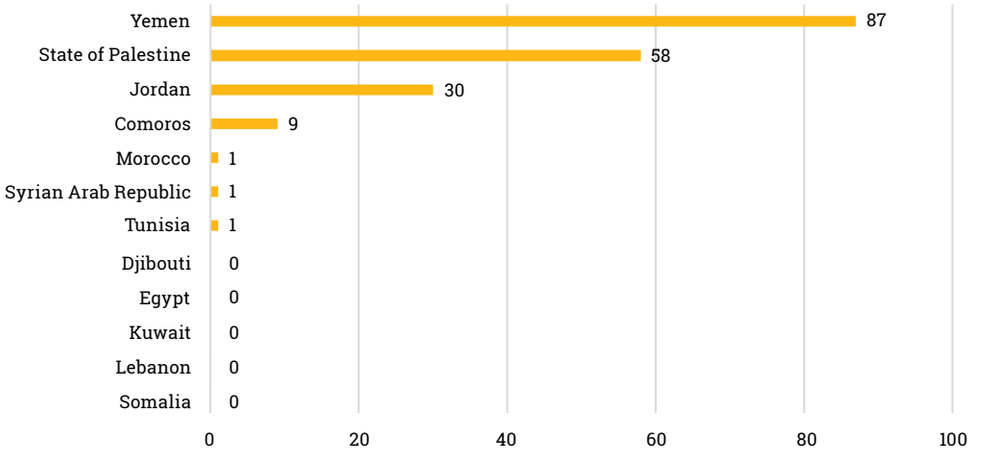
Note: Data are from various years as follows: Tunisia (2009); Jordan and Yemen (2010); Djibouti and Morocco (2011); Comoros (2017).

Number damaged dwellings attributed to disasters (number)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti (2012), State of Palestine and Tunisia (2013), Comoros, Lebanon and Morocco (2014).

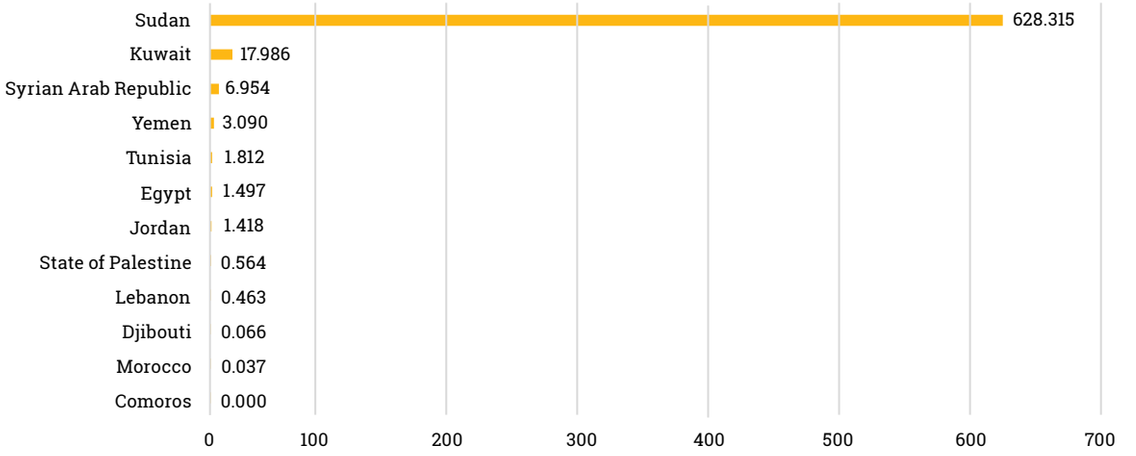
Number destroyed dwellings attributed to disasters (number)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti (2012), State of Palestine and Tunisia (2013), Comoros, Lebanon and Morocco (2014).

Figure 11.3 Indicator 11.5.2 - Direct disaster economic loss in relation to global gross domestic product (GDP)

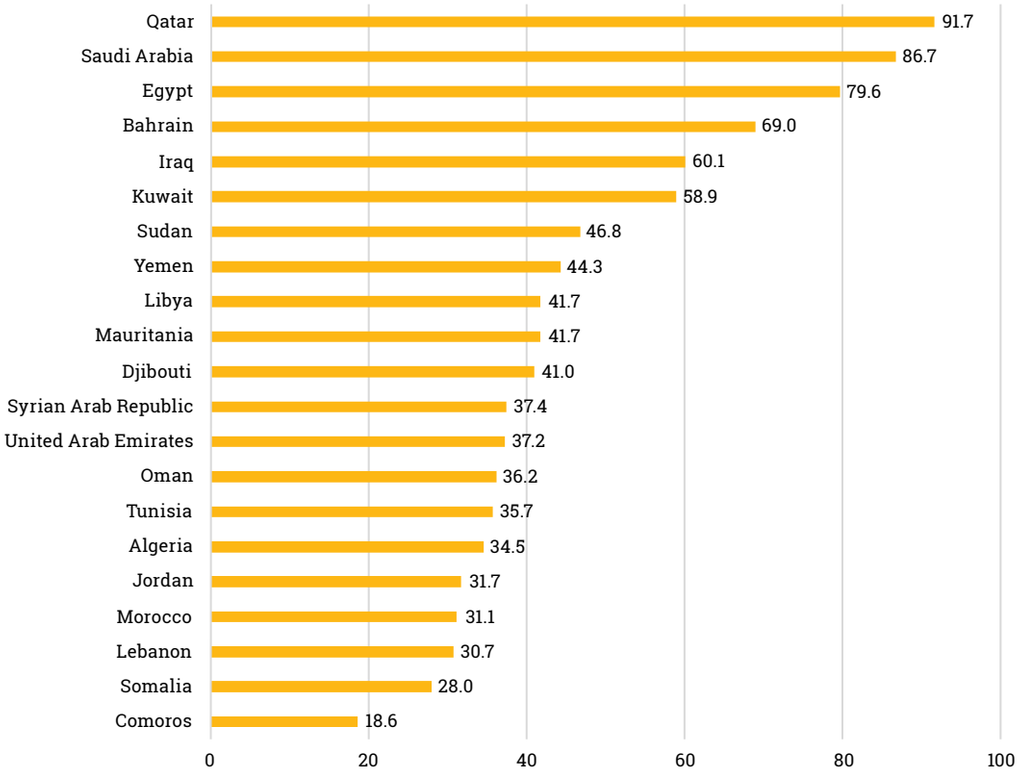
Direct economic loss attributed to disasters (millions of current United States dollars)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti and Kuwait (2011), Comoros and Tunisia (2013), Morocco (2014).

Figure 11.4 Indicator 11.6.2 - Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)

Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)



Note: All data are from 2016.

Annex to chapter 12

1. Data for SDG 12

SDG 12 comprises 11 targets and a total of 13 indicators (two of which contain multiple subindicators). Of these indicators, two are tier I, two are tier II, and 9 are tier III for which data is not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for two indicators: 12.2.2 - Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP; and 12.4.1 - Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement.

None of the provided data sets includes sex disaggregated data.

The data used in the analysis of SDG 12 was downloaded on 24 September 2018. A country level data check following a major global update from the United Nations Statistics Division on 8 July 2019, we revealed that data for SDG 12.2.1 (Material footprint, material footprint per capita, and material footprint per GDP) had been totally removed from the database. When the United Nations Statistics Division updated its data again on 6 August 2018, the data for this indicator were provided again but covered only the world aggregates and not the countries, regions or subregions. Therefore, 12.2.1 is omitted from our analysis.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. When there are many subindicators that mean the same but are expressed differently (as in the case of the three other subindicators under 12.2.2), we choose the one that is more representative, is easier to interpret and has more data availability. This leads us to omit two of the three subindicators of 12.2.2, keeping “Domestic material consumption per capita, by type of raw material”. Indicator 12.2.2 is an exact repetition of indicator 8.4.2, and no data substitution was made for 2017 since data availability is complete/nearly complete for this year, especially as compared to previous years. This subindicator covers 184 countries/ territories, including 21 Arab countries.

The preserved indicators/subindicators of 12.4.1 are subject to our data substitution scheme for the year 2017, considering the data of the years spanning 2009–2017. Data are only available for 2015 and thus the data are considered as that of our base year (2017). Table 12.1 shows the number of substituted data points, including those from Arab countries.

Table 12.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
12.4.1 (Compliance with the Basel Convention on hazardous waste and other chemicals)	181 (21)	2015
12.4.1 (Compliance with the Montreal Protocol on hazardous waste and other chemicals)	196 (21)	2015
12.4.1 (Compliance with the Rotterdam Convention on hazardous waste and other chemicals)	153 (16)	2015
12.4.1 (Compliance with the Stockholm Convention on hazardous waste and other chemicals)	178 (20)	2015

We note that the State of Palestine is initially missing in the data sets of each of the two indicators in question, thus making 21 countries as the maximum potential data coverage for the Arab region. We also note that the four considered subindicators under 12.4.1 are the only ones for which data are provided by United Nations Statistics Division while a fifth one, representing the compliance with the Minamata Convention, is missing in the original data set as the timing for submission of the reporting on this convention has not yet been agreed on, according to the SDG Indicators Metadata Repository of the United Nations Statistics Division. Moreover, it should be noted that the subindicator on compliance with the Montreal Protocol does not only have perfectly full data availability (for all countries/territories with no exception) but also a value of 100 for all the countries/territories as the Montreal Protocol is a universal convention that all 197 Member States of the United Nations have signed and adopted. As advised by the corresponding metadata, we aggregate the four subindicators, representing compliance with one convention each using a simple arithmetic mean of the four respective percentage scores. Then, the global, regional and subregional aggregates of the created index are calculated using the simple arithmetic mean of the country values, as this is a State level indicator. Creating an index of the four subindicators leads to losing five Arab countries from the Arab regional aggregate.

Concerning the remaining subindicator of 12.2.2, we note that five disaggregation categories by "type of raw material": biomass (BIM), fossil fuel (FOF), metal ores (MEO), non-metallic minerals (NNM) and raw material (RAW). Disaggregation by these five categories is consistent in terms of data coverage across all countries/territories. The category RAW is actually the aggregation of the other four categories and is thus the only one kept. In addition, we note there are 12 more disaggregation categories for this subindicator which are, however, incomplete and inconsistent in terms of data coverage across countries/territories and are not properly defined, neither in the data set nor in the metadata; and thus, these 12 categories are disregarded. In view of that, only the series representing "Domestic material consumption per capita" for raw material in general is preserved and evaluated under 12.2.2. Finally, we note that the data set, as provided by the United Nations Statistics Division, mistakenly has the data/values corresponding to "Domestic material consumption per capita" labelled with the "series code" and the "series description" of "Domestic material consumption (as a total)", and conversely the data/values corresponding to the latter subindicator labelled with the "series code" and the "series description" of the former. The authors could check this by looking at the values themselves (the ranges) and by comparing the data set to its older version, which was obtained before the major data update in June 2018. The series reflecting the per capita measure of the indicator in question (12.2.2) is certainly the one actually used. According to the SDG Indicators Metadata Repository for this indicator, a zero can represent a missing value, it can mean "not applicable", or it can be a genuine zero or a combination of the last two options (which is a common situation). "This allows for values to be easily aggregated into further aggregations; however, it should be thus noted that due to imputing missing values as '0.0', the aggregations may represent a lower value than [the] actual situation". Nevertheless, this indicator does not take a value of zero for any country/territory, meaning that there is no significant risk of underestimated results in our case.

This leaves us with two integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 12.1.

Box 12.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 12.2.2 – 1 series out of 54 – Domestic material consumption per capita, by type of raw material
- Indicator 12.4.1 – Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement

However, we lose the ability to determine the region's position on the rest of the targets, indicators, and subindicators as noted in box 12.2, including those in table 12.2 on targets, indicators, tiers and data availability in Arab countries for SDG 12, but that do not have sufficient data.

Box 12.2	Summary list of omitted targets

- 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
- 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
- 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
- 12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
- 12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
- 12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

Annex 12.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of the index created for 12.4.1 are calculated using a simple arithmetic mean. The aggregates of the preserved series of 12.2.2 are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The weight that was actually used for the preserved series of 12.2.2 is Total Population in 2015 (from the World Population Prospects). The chapter includes more details about the weighting variable and method. We note that, since the preserved series of 12.2.2 needs a population-related weighting variable in 2017, we use the latest available data for this variable, i.e. data for 2015 provided by the World Population Prospects.

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For both target 12.2 (under which we analyse 12.2.2) whose aim is to "achieve the sustainable management and efficient use of natural resources, by 2030" and target 12.4 (under which we analyse 12.4.1) whose aim is to "achieve the environmentally sound management of chemicals and all wastes throughout their life cycle...and significantly reduce their release to air, water and soil..., by 2020", it is not possible to infer the official desired target values and thus they are not shown.

Table 12.2 Targets, indicators, tiers and data availability for Arab countries – SDG 12 (Ensure sustainable consumption and production patterns)

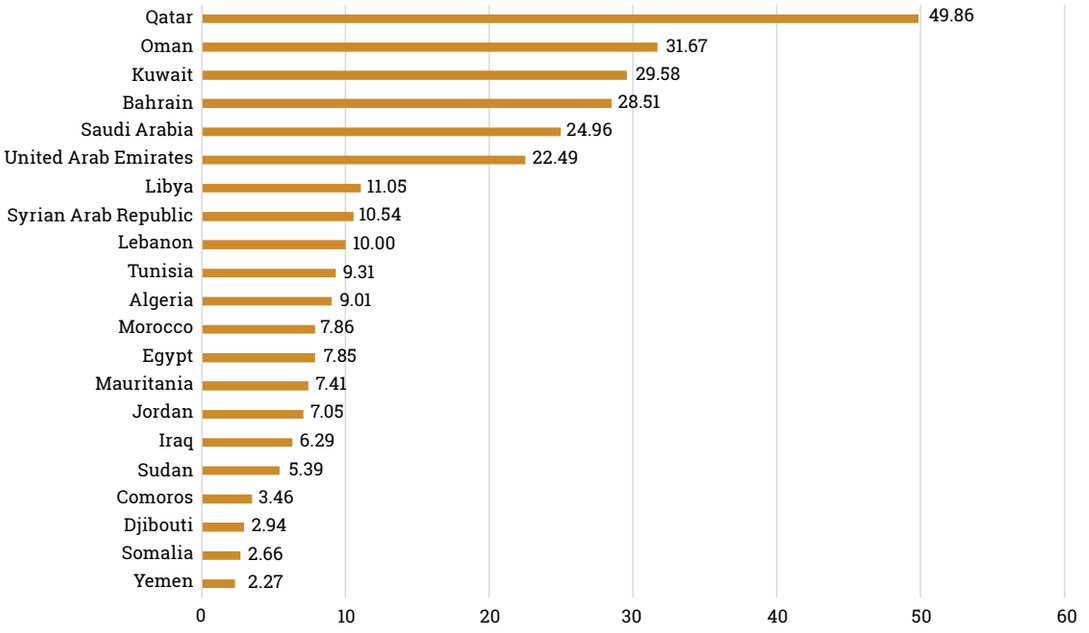
Target	Indicator	Number of subindicators	Tier	Data availability*
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	12.1.1 Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies	(No data)	Tier II	x
12.2 By 2030, achieve the sustainable management and efficient use of natural resources	12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	(No data)	Tier II	x
	12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	1 chosen out of 54	Tier I	21
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	12.3.1 Global food loss index	(No data)	Tier III	x
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement	4 chosen out of 4	Tier I	21, 21, 16, 20
	12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment	(No data)	Tier III	x
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	12.5.1 National recycling rate, tons of material recycled	(No data)	Tier III	x

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	12.6.1 Number of companies publishing sustainability reports	(No data)	Tier III	x
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	12.7.1 Number of countries implementing sustainable public procurement policies and action plans	(No data)	Tier III	x
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a)national education policies; (b) curricula; (c) teacher education; and (d) student assessment	(No data)	Tier III	x
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	12.a.1 Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies	(No data)	Tier III	x
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	12.b.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools	(No data)	Tier III	x
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	(No data)	Tier III	x

* Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

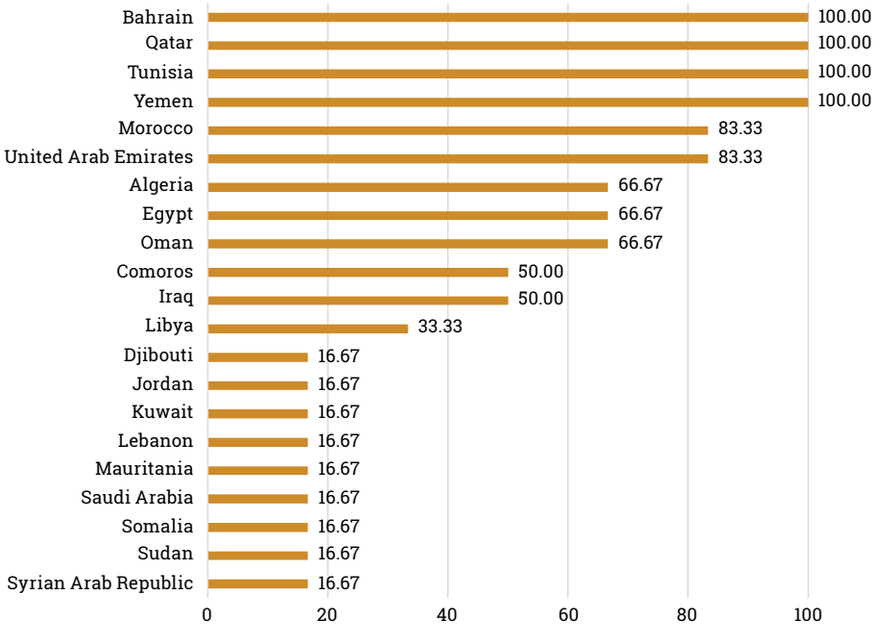
Figure 12.1 Indicator 12.2.2 - Domestic material consumption per capita, by type of raw material
Domestic material consumption per capita (metric tons)



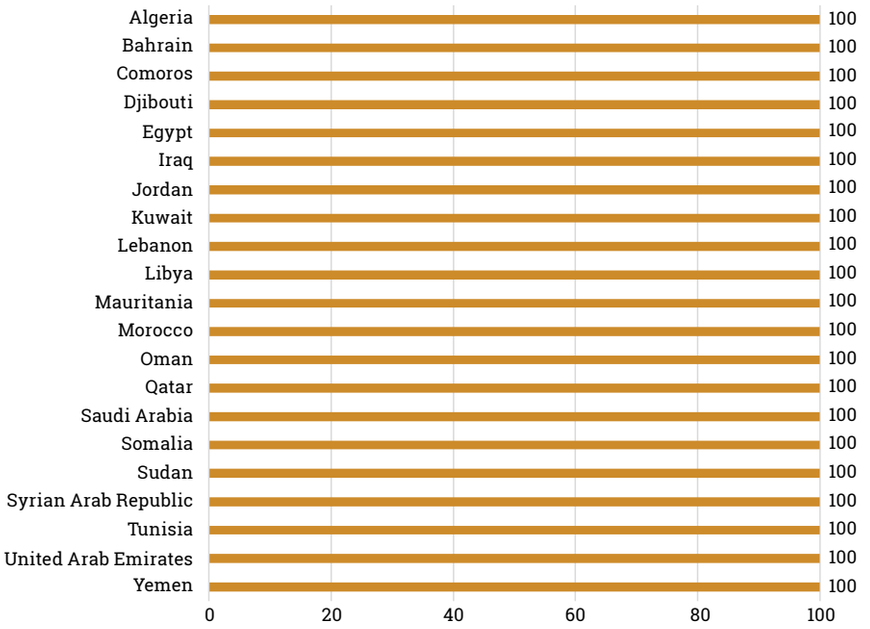
Note: All data are from 2017.

Figure 12.2 Four series of indicator 12.4.1 - Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement
Level of compliance with international multilateral environmental agreements on hazardous waste and other chemicals (percentage)

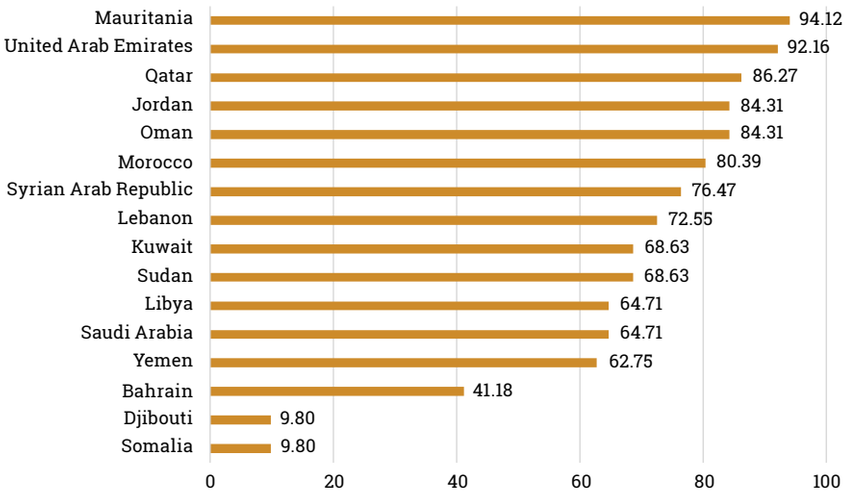
Compliance with the Basel Convention on hazardous waste and other chemicals



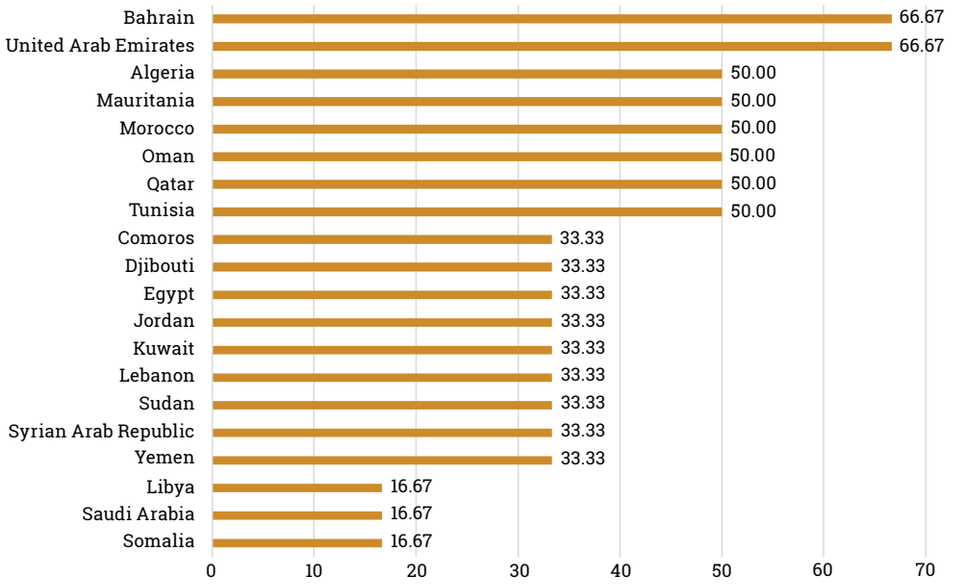
Compliance with the Montreal Protocol on hazardous waste and other chemicals



Compliance with the Rotterdam Convention on hazardous waste and other chemicals



Compliance with the Stockholm Convention on hazardous waste and other chemicals



Note: All data are for indicator 12.4.1 are from 2015.

Annex to chapter 13

1. Data for SDG 13

SDG 13 comprises five targets and a total of eight indicators (three of which contain multiple subindicators). Of these indicators, one is tier I, two are tier II, and five are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of three indicators: 13.1.1 - Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population; 13.1.2 - Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030; and 13.1.3 - Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies.

Indicators 13.1.1, 13.1.2 and 13.1.3 are exactly the same as indicators 1.5.1, 1.5.3 and 1.5.4, respectively. However, the data sets titled 1.5.1, 1.5.3 and 1.5.4 are more extensive and inclusive compared to the data sets listed under SDG 13, as they include more subindicators (including all those that are in the SDG 13 versions of these data sets). Therefore, we explore and evaluate the data sets labelled as SDG 1 instead.

None of the provided data sets includes sex disaggregated data.

Data used in SDG 13 analysis was downloaded on 7 September 2018. After the country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, three series of SDG 13.1.1 (Number of people affected by disaster (number); Number of deaths due to disaster (number); Number of missing persons due to disaster (number)) are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 13.1.2 and 13.1.3.

Indicator 13.1.1 has 15 subindicators, some of which mean the same but are expressed differently, include other subindicators thematically or join two subindicators in one. Some of these subindicators address material losses due to disasters, namely damaged or destroyed dwellings, without referring to the affected people. Moreover, three of these subindicators include disaggregation by “hazard type” with an extensive number of categories (59; making 189 total series under 13.1.1), yet they are incomplete when looking consistently across countries/territories. We present a summary of series of 13.1.1 and how they relate to each other in table 13.1.

Table 13.1 Summary of the series provided by the United Nations Statistics Division for indicator 13.1.1 (also for indicator 1.5.1 and indicator 11.5.1)

Series 1	**Number of people affected by disaster**	
Series 2	Number of injured or ill people attributed to disasters	Included in the first series
Series 3	Number of people whose livelihoods were disrupted or destroyed, attributed to disasters	
Series 4	Number of people whose damaged dwellings were attributed to disasters	
Series 5	Number of people whose destroyed dwellings were attributed to disasters	
Series 6	Number of directly affected persons attributed to disasters per 100,000 population	Expressed differently

Series 7	**Number of missing persons due to disaster**	
Series 8	**Number of deaths due to disaster**	
Series 9	Number of deaths and missing persons attributed to disasters, **by hazard type**	Joins the two series and with disaggregation by hazard type
Series 10	Number of deaths and missing persons attributed to disasters	Joins the two series
Series 11	Number of deaths and missing persons attributed to disasters per 100,000 population	Joins the two series and expressed differently

Series 12	**Number of damaged dwellings attributed to disasters**	
Series 13	Number of damaged dwellings attributed to disasters, **by hazard type**	With disaggregation by hazard type

Series 14	**Number of destroyed dwellings attributed to disasters**	
Series 15	Number of destroyed dwellings attributed to disasters, **by hazard type**	With disaggregation by hazard type

We observe that series 2, 3, 4 and 5 are included in series 1; series 6 is just a different way to express series 1; each of series 9, 10 and 11 join series 7 and 8 whereby series 9 also comes with disaggregation by hazard type and series 11 is also a different way to express series 10; and that series 13 and 15 are nothing but the respective hazard type disaggregated versions of series 12 and 14. When there are many subindicators that mean the same but are expressed differently, we choose the one among these subindicators that is more representative, is easier to interpret, and has more data availability. Furthermore, when a series thematically covers the other, we only keep the series which has the broader measure. In light of all this, we only preserve and evaluate the five following subindicators from 13.1.1: Number of people affected by disaster, Number of missing persons due to disaster, Number of deaths due to disaster, Number of damaged dwellings attributed to disasters, and Number of destroyed dwellings attributed to disasters.

The subindicators of 13.1.1 are subject to our data substitution scheme for the year 2017, in order to ensure the desired data coverage (table 13.2).

Table 13.2 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
13.1.1 (Number of people affected by disaster (number))	13 (0)	2016
	6 (0)	2015
	13 (1)	2014
	7 (1)	2013
	5 (1)	2012
	3 (1)	2011

	5 (1)	2010
	2 (1)	2009
13.1.1 (Number of deaths due to disaster (number))	15 (1)	2016
	9 (0)	2015
	11 (1)	2014
	7 (1)	2013
	3 (1)	2012
	6 (1)	2011
	5 (1)	2010
	1 (1)	2009
13.1.1 (Number of missing persons due to disaster (number))	9 (0)	2016
	7 (0)	2015
	5 (0)	2014
	4 (0)	2013
	5 (0)	2012
	3 (2)	2011
	7 (2)	2010
	4 (1)	2009
13.1.1 (Number damaged dwellings attributed to disasters (number)) and (Number destroyed dwellings attributed to disasters (number))	6 (0)	2016
	14 (0)	2015
	24 (3)	2014
	10 (2)	2013
	4 (1)	2012
	4 (0)	2011
	4 (1)	2010
	3 (1)	2009

We express each of the first three preserved series (the ones related to people) per 100,000 population not only to match the official definition of indicator 13.1.1 but, more importantly, to get a measure that is relative to the population and, thus, that is more significative and indicative. The SDG Indicators Metadata Repository of the United Nations Statistics Division recommends calculations of the indicator 13.1.1 as a simple summation of related indicators (death, missing people and affected people) from national disaster loss databases divided by the global population data and expressed per 100,000 people, which however would cause us to loose half of the available observations. Thus, we report on all three people-related series in 13.1.1 separately and express them per 100,000 national population, while for the two dwellings-related series where the availability of data for all Arab countries is the same for both, we add them together and form a sum.

This leaves us with only these five integral sub-indicators of SDG 13.1.1 to assess the position of the region by 2030 for SDG 13, as noted in box 13.1.

Box 13.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 13.1.1 – 5 series out of 189 – Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

However, we lose the ability to determine the region's position on the rest of the Targets, indicators and sub-indicators as noted in box 13.2, including those in table 13.3 on targets, indicators, tiers and data availability in Arab countries for SDG 13, but that do not have sufficient data.

Box 13.2	**Summary list of omitted targets**

- 13.2 Integrate climate change measures into national policies, strategies and planning
- 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- 13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
- 13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

Annex 13.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of two dwellings-related series of 13.1.1 are calculated using a total sum, whereas the aggregates of all three people-related series of 13.1.1. are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the properties of the weighting variables are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator or the latest available year.

The following weight was used for the indicators/series whose global, regional and subregional aggregates are weighted averages: Total Population in 2015 (from the World Population Prospects). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We calculate the world, regional and subregional averages for the evaluated indicator but we fail to include its target value to facilitate comparability. In fact, as SDG 13.1 aims to "strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries", it is not possible to infer the official desired target value and thus it is not shown.

Table 13.3 Targets, indicators, tiers and data availability for Arab countries – SDG 13 (Take urgent action to combat climate change and its impacts)

Target	Indicator	Number of subindicators	Tier	Data availability*
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	13.1.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	5 chosen out of 189**	Tier II	12, 11, 6, 12, 12
	13.1.2 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030	(Dropped) 2	Tier I	x
	13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies	(Dropped) 3	Tier II	x
13.2 Integrate climate change measures into national policies, strategies and planning	13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)	(No data)	Tier III	x

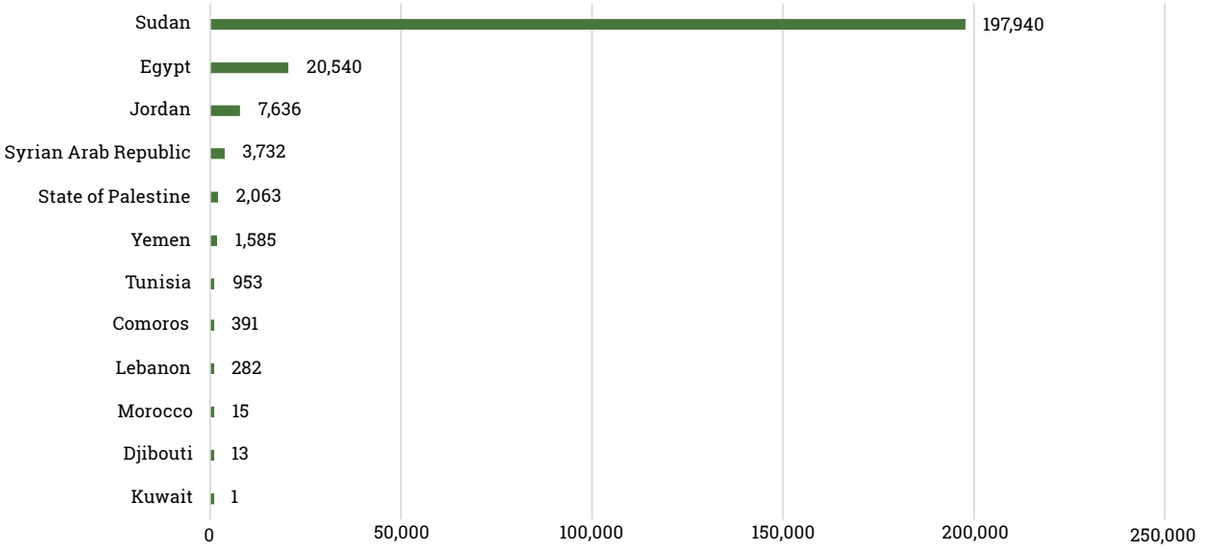
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula	(No data)	Tier III	x
	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions	(No data)	Tier III	x
13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	13.a.1 Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the $100 billion commitment	(No data)	Tier III	x
13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	13.b.1 Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities	(No data)	Tier III	x

* Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
** For indicator 13.1.1, there exist 15 main series, 3 of which have disaggregation by hazard type (consisting of 59 different categories). Therefore, the total number of series for this indicator is 189, out of which we choose to keep only five series.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

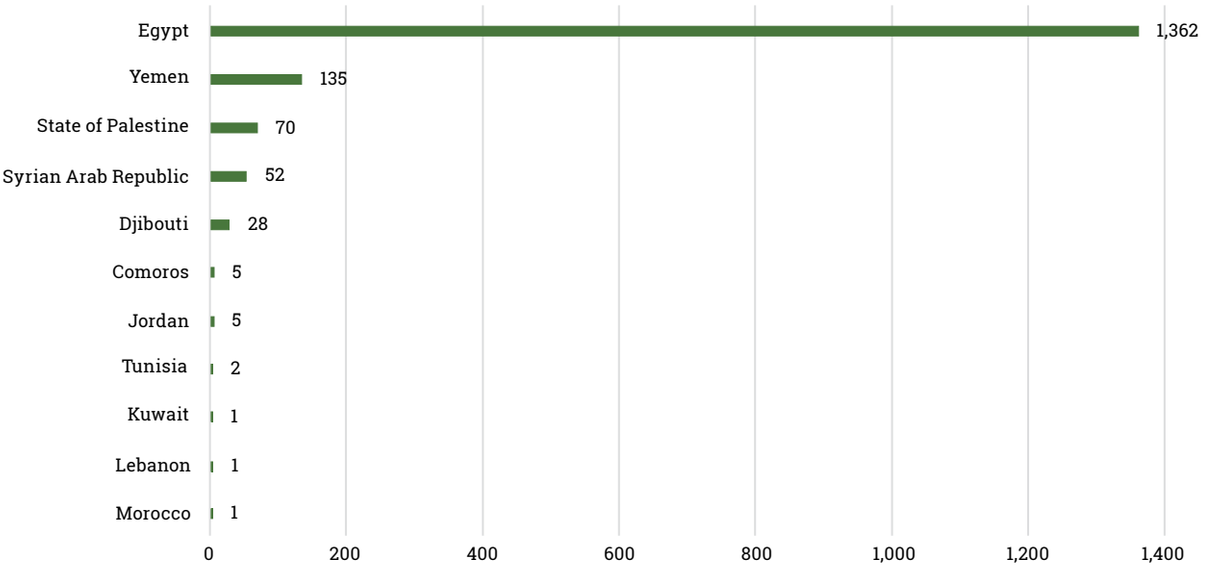
Figure 13.1 Five series of indicator 13.1.1 - Number of deaths, missing persons and persons affected by disaster per 100,000 people

Number of people affected by disaster (number)



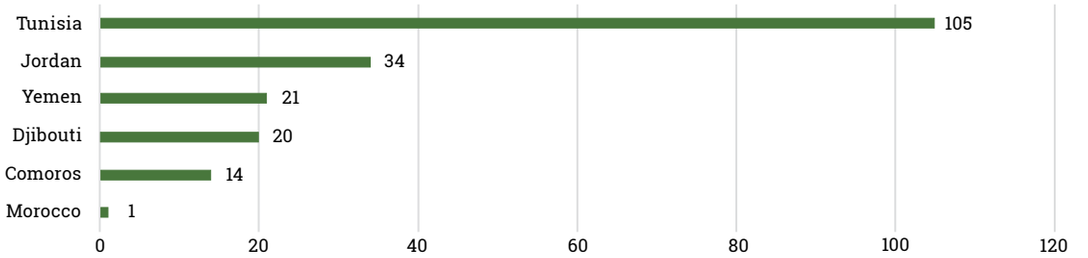
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013) and Morocco (2014).

Number of deaths due to disaster (number)



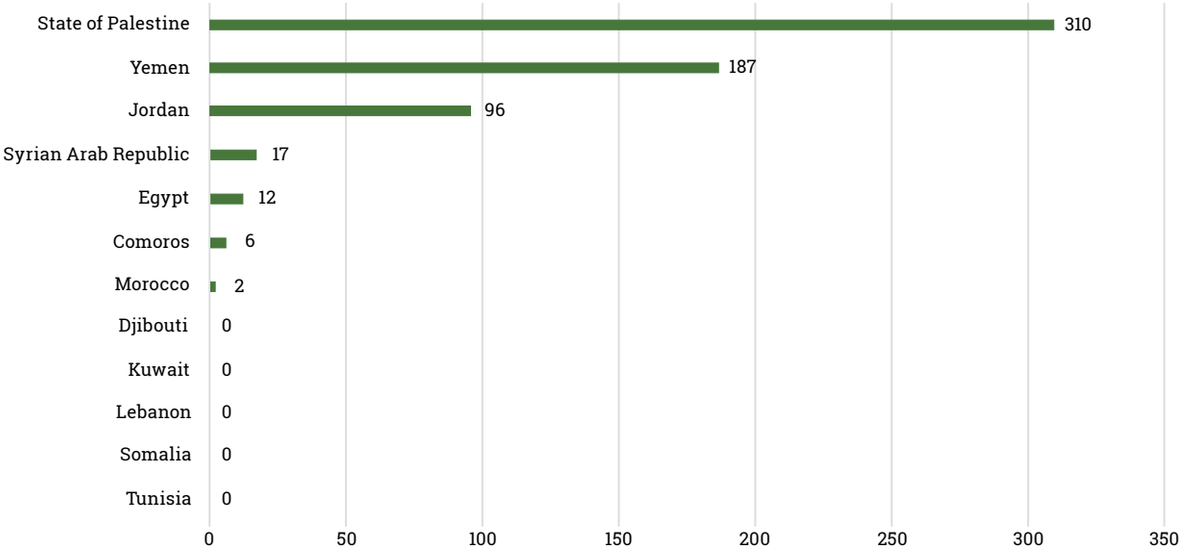
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013), Morocco (2014) and Lebanon (2016).

Number of missing persons due to disaster (number)



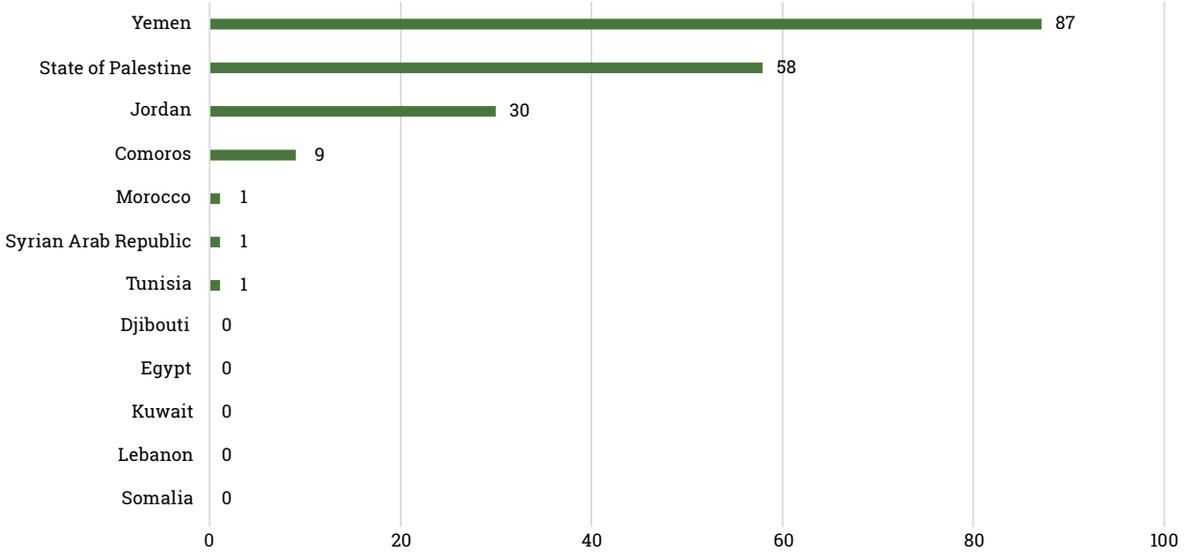
Note: Data are from various years as follows: Tunisia (2009); Jordan and Yemen (2010); Djibouti and Morocco (2011); Comoros (2017).

Number damaged dwellings attributed to disasters (number)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti (2012), State of Palestine and Tunisia (2013), Comoros, Lebanon and Morocco (2014).

Number destroyed dwellings attributed to disasters (number)



Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Djibouti (2012), State of Palestine and Tunisia (2013), Comoros, Lebanon and Morocco (2014).

Annex to chapter 14

1. Data for SDG 14

SDG 14 comprises 10 targets and a total of 10 indicators (two of which contain multiple subindicators). Of these indicators, two are tier I, three are tier II, and five are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of three indicators: 14.4.1 - Proportion of fish stocks within biologically sustainable levels; 14.5.1 - Coverage of protected areas in relation to marine areas; and 14.a.1 - Proportion of total research budget allocated to research in the field of marine technology.

None of the provided data sets includes sex disaggregated data.

The data used in the analysis of SDG 14 was downloaded on 14 September 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 14.5.1 (Coverage of protected areas in relation to marine areas) is replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 14.4.1 and 14.a.1.

Indicator 14.5.1 is composed of three different subindicators, namely: Protected marine area (Exclusive Economic Zones) (square kilometers), Coverage of protected areas in relation to marine areas (Exclusive Economic Zones) (percentage), and Average proportion of marine Key Biodiversity Areas (KBAs) covered by protected areas (percentage). We omit the first series because evaluating it would not be as indicative and significative as evaluating one or both of the other series, since it does not measure, for instance, the size of the protected marine area with respect to the total area that could potentially be protected but as an absolute measure. The other two series measure the indicator of concern using two different approaches/calculation methods: the series “Coverage of protected areas in relation to marine areas (Exclusive Economic Zones)” is computed by “dividing the total protected marine area within a country by the total territorial area of the country and then multiplying by 100”; whereas the series “Average proportion of marine KBAs covered by protected areas” is computed as “the mean percentage of each KBA that is covered by protected areas” which, according to the SDG Indicators Metadata Repository, “better reflects trends in protected area coverage for countries or regions with few or no Key Biodiversity Areas that are completely covered”. The SDG Indicators Metadata Repository also adds that the first approach, which is now considered as the traditional simple statistical method to compute this indicator, “does not recognize the extreme variation of biodiversity importance over space (Rodrigues et al. 2004), and so risks generating perverse outcomes through the protection of areas which are large at the expense of those which require protection”. Therefore, we only preserve and evaluate the “Average proportion of marine KBAs covered by protected areas (percentage)” series for 14.5.1. We note that this series is disaggregated by geographic location (point) and/or boundary (polygon) and that thus we only use its “mid-point” values which make the averages of the upper and lower boundaries.

This preserved series of 14.5.1, which is the only evaluated subindicator in chapter 14, covers 20 Arab countries in 2017 (all Arab countries except the State of Palestine and Jordan). These 20 Arab countries, in turn, cover 400 million of the total Arab population. While the data set includes values for the years spanning 2000–2018, data availability is nearly complete for our base year (2017) and is the best compared to all other years, which explains why no data substitution was done for this subindicator of 14.5.1.

We assess the position of the region by 2030 on this single integral indicator (14.5.1), using one of its three series, as noted in box 14.1.

Box 14.1	Summary list of preserved and examined indicators/subindicators

- Indicator 14.5.1 – 1 series out of 3 – Average proportion of marine Key Biodiversity Areas (KBAs) covered by protected areas (percentage)

This solely covers one target, as we remain unable to determine the region's position on the rest of the targets and indicators as noted in box 14.2, including those that are presented in table 14.1 on targets, indicators, tiers and data availability in Arab countries for SDG 14, but do not have sufficient data.

Box 14.2	Summary list of omitted targets

- 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
- 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- 14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- 14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- 14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation[b]
- 14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- 14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
- 14.b Provide access for small-scale artisanal fishers to marine resources and markets
- 14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"

Annex 14.2 for a graph of the evaluated series of indicator 14.5.1, showing the country level data values of the series/indicator for 2017 for every included country.

The global, regional and subregional aggregates of the preserved series of 14.5.1 are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variable to be used for the weighted averages and the weighting variable's properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data that is referred to by this Metadata. If none of these two references advise on the aggregation method or weight, the decision is made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variable). The weight that was actually used for the preserved series of indicator 14.5.1 is the total marine KBA (in square kilometers), which is the denominator of the series, for the year 2016. The data of the weighting variable was taken from the version of the Global SDG Indicators Database of the United Nations Statistics Division that was available before June 2018, since the data were not available from any other source. While the year of the weighting variable data should supposedly be most commonly used year for the data of the respective series/indicator (2017 in our case), we used the data of the weighting variable in 2016 since it is the latest year for which data are available in the data set of the weighting variable that was provided by the Global SDG Indicators Database before June 2018. Finally, we note that the weighting variables sometimes prevent us from evaluating the series/indicator using all the data that are available or provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies for the evaluated series of 14.5.1 where 18 Arab countries out of a potential of 20 are covered after weighting. While this affects the global, regional and/or subregional aggregates, the country-year graph includes all the Arab countries that have data for the evaluated series/indicator, regardless of the data availability of the weighting variable.

We calculate the world, regional and subregional aggregates for the evaluated indicator but we fail to include its target value since the evaluated subindicator of 14.5.1 "Average proportion of marine KBAs covered by protected areas (percentage)" is not perfectly compatible with the definition of target 14.5 (By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information) that is rather closer to one of the omitted subindicators.

Table 14.1 Targets, indicators, tiers and data availability for Arab countries – SDG 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development)

Target	Indicator	Number of subindicators	Tier	Data availability*
14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	14.1.1 Index of coastal eutrophication and floating plastic debris density	(No data)	Tier III	x
14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches	(No data)	Tier III	x
14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations	(No data)	Tier III	x

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	14.4.1 Proportion of fish stocks within biologically sustainable levels	(Dropped) 4	Tier I	x
14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	14.5.1 Coverage of protected areas in relation to marine areas	1 chosen out of 3	Tier I	20
14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation[b]	14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing	(No data)	Tier II	x
14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	14.7.1 Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries	(No data)	Tier III	x
14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	14.a.1 Proportion of total research budget allocated to research in the field of marine technology	(Dropped) 1	Tier II	x
14.b Provide access for small-scale artisanal fishers to marine resources and markets	14.b.1 Progress by countries in the degree of application of a legal/ regulatory/policy/ institutional framework which recognizes and protects access rights for small-scale fisheries	(No data)	Tier II	x

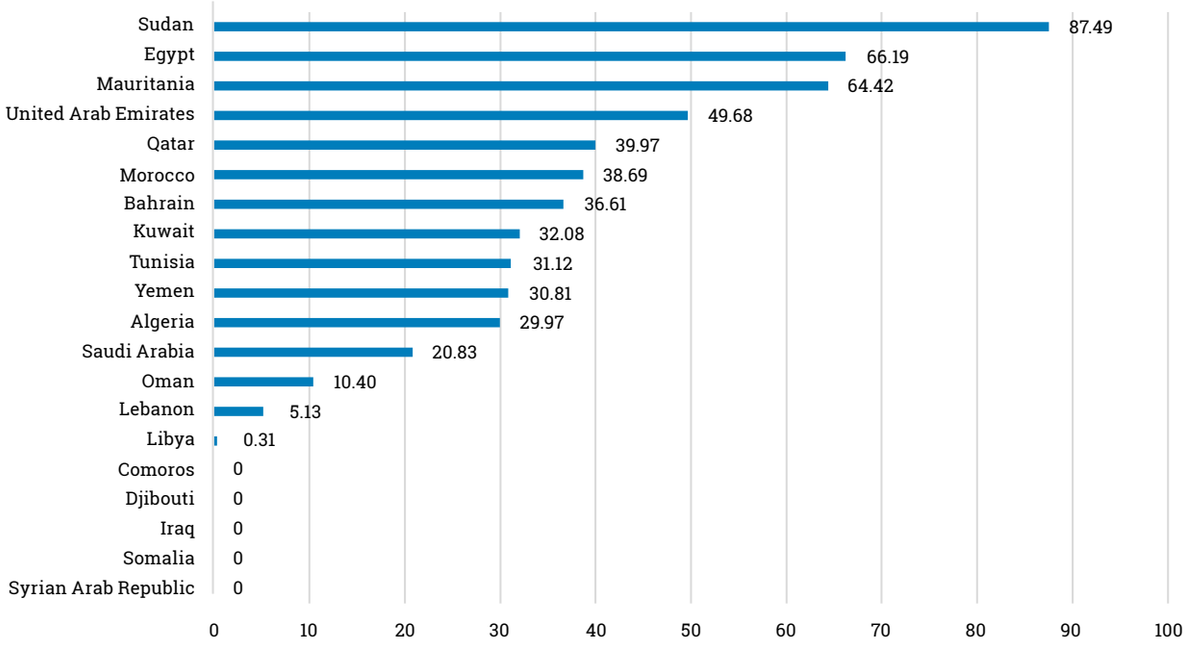
14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"	14.c.1 Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nations Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources	(No data)	Tier III	x

* Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
We note that the weighting variables sometimes prevent us from evaluating the series/indicator using its full data that is available/ provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional, and/or subregional aggregates, the country- year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the data availability of the weighting variable.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 14.1 Indicator 14.5.1 - Average proportion of marine Key Biodiversity Areas (KBAs) covered by protected areas (percentage)

Average proportion of marine KBAs covered by protected areas (percentage)



Note: All data are for 2017.

Annex to chapter 15

1. Data for SDG 15

SDG 15 comprises 12 targets and a total of 14 indicators (seven of which contain multiple subindicators). Of these indicators, seven are tier I, four are tier II, and one is tier III for which data are not available, as the indicators are still in the process of methodological definition. In addition, two indicators (15.a.1 and 15.b.1) are labeled as “tier I/III” and they are an exact repetition of each other and thus have identical data sets.

The United Nations Statistics Division provides data sets for a total of nine indicators: 15.1.1 - Forest area as a proportion of total land area; 15.1.2 - Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type; 15.2.1 - Progress towards sustainable forest management; 15.4.1 - Coverage by protected areas of important sites for mountain biodiversity; 15.4.2- Mountain Green Cover Index; 15.5.1 - Red List Index; 15.6.1 - Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits; 15.a.1 - Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems; and 15.b.1 - Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems (the same as 15.a.1). None of the provided data sets includes sex disaggregated data.

The data used in the analysis of SDG 15 was downloaded on 28 September 2018. After a country level data check following a major United Nations Statistics Division Global SDG Indicators Database update on 8 July 2019, one data series of 15.1.2 (Average proportion of terrestrial Key Biodiversity Areas (KBAs) covered by protected areas (percentage)), one data series of 15.4.1 (Average proportion of mountain KBAs covered by protected areas (percentage)), and one data series of 15.a.1 (Total official development assistance for biodiversity, by recipient countries (millions of constant 2017 United States dollars)) are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. When there are many subindicators that mean the same but are expressed differently (as in the case of a pair of series under indicator 15.2.1), we choose the one among them that is more representative and easier to interpret, and has more data availability. This leads us to omit one of the six series of 15.2.1, keeping “Above-ground biomass in forest per hectare (in tonnes per hectare)” instead.

Indicator 15.1.1 has three series: “Forest area as a proportion of total land area (percentage)”, “Forest area (thousands of hectares)”, and “Land area (thousands of hectares)”; where the first series is equal to the second divided by the third series and then multiplied by 100. Therefore, we only keep the first series, which is also the most meaningful and representative of the indicator, and we drop the other two. Similarly, 15.4.2 has three series: “Mountain green cover area (square kilometres)”, "Mountain area (square kilometres)", and "Mountain Green Cover Index"; where the last series is equal to the first series divided by the second series and then multiplied by 100. Therefore, we only keep the last series, which is also the most meaningful and representative of the indicator, and we drop the other two.

No data substitution was made for two subindicators under 15.6.1 (Countries that are contracting Parties to the International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA) (1 = YES; 0 = NO)) and (Countries that have legislative, administrative and policy framework or measures reported through the Online Reporting System on Compliance of the International Treaty on PGRFA (1 = YES; 0 = NO)).

Furthermore, no substitution was made for any of the following: both subindicators of 15.1.2 (Average proportion of terrestrial KBAs covered by protected areas (percentage)) and (Average proportion of freshwater KBAs covered by protected areas (percentage)), indicator 15.4.1, the preserved subindicator of 15.4.2 (Mountain Green Cover Index), and indicator 15.5.1. No substitution is made because data are complete or nearly complete for the base year (2017) or substitution is not possible within the considered time interval (2009–2017).

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 15.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 15.1. Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
15.1.1 (Forest area as a proportion of total land area (percentage))	233 (22)	2015
15.2.1 (Above-ground biomass in forest per hectare (tonnes per hectare))	164 (14)	2015
15.2.1 (Forest area certified under an independently verified certification scheme (thousands of hectares))	233 (22)	2015
15.2.1 (Proportion of forest area within legally established protected areas (percentage))	152 (12)	2015
	6 (1)	2010
15.2.1 (Forest area net change rate (percentage))*	223 (21)	2015
15.2.1 (Proportion of forest area with a long-term management plan (percentage))	121 (11)	2010
15.6.1 (Countries that are parties to the Nagoya Protocol (1 = YES; 0 = NO))	1 (0)	2016
	1 (1)	2015
	1 (0)	2014
	1 (0)	2013
	192 (21)	2012
15.6.1 (Countries that have legislative, administrative and policy framework or measures reported to the Access and Benefit-Sharing Clearing-House (1 = YES; 0 = NO))	1 (0)	2016
	1 (1)	2015
	1 (0)	2014
	1 (0)	2013
	192 (21)	2012
15.a.1 (Total official development assistance for biodiversity, by recipient countries (millions of constant 2017 United States dollars))	3 (1)	2016
	1 (0)	2013
	5 (1)	2010

* Substitution is technically not possible and thus was not conducted, as this subindicator measures the forest area net change rate between 2010 and 2015 (simple percentage change in forest area over a five-year time range). However, since the latest data available for this series, which is also nearly complete, is in 2015 (i.e. no data is available for it in 2016 or 2017), we consider the 2015 data as that of our base year (2017).

We drop the fifth subindicator of 15.6.1 (Total reported number of Standard Material Transfer Agreements (SMTAs)) because it is mentioned in the SDG Indicators Metadata Repository as an indicator to "provide complementary information", when we prefer to focus on analysing the core indicators. Moreover, we note that, in the data set provided by the United Nations Statistics Division after the major data update of June 2018, the data series of this subindicator seems to be mistakenly the same as that of another subindicator (Countries that have legislative, administrative and policy framework or measures reported to the Access and Benefit-Sharing Clearing-House).

Finally, for 15.a.1, we drop the first series which represents the total official development assistance (ODA) for biodiversity by donor (where data are provided for only 28 donor countries) and only keep the other one, which represents ODA for biodiversity by recipient. The second series, which we keep, reflects the distribution of ODA to recipient countries and thus the pattern of the ODA contributions of donor countries, knowing that donor countries are in the driving seat in development financing. Therefore, these results can help with the formulation of policy recommendations as they indicate if there is need for donor countries to alter the amount of ODA that they pledge for biodiversity or to reconsider the countries/regions that they target.

This leaves us with 17 integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 15.1.

Box 15.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 15.1.1 – 1 series out of 3 – Forest area as a proportion of total land area
- Indicator 15.1.2 – 2 series out of 2 – Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
- Indicator 15.2.1 – 5 series out of 6 – Progress towards sustainable forest management
- Indicator 15.4.1 – Coverage by protected areas of important sites for mountain biodiversity
- Indicator 15.4.2 – 1 series out of 3 – Mountain Green Cover Index
- Indicator 15.5.1 – Red List Index
- Indicator 15.6.1 – 4 series out of 5 – Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits
- Indicator 15.a.1 – 1 series out of 2 – Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems
- Indicator 15.b.1 – 1 series out of 2 – Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems (same as 15.a.1)

However, we lose the ability to determine the region's position on the rest of the targets and indicators as noted in box 15.2, including those listed in table 15.2 on targets, indicators, tiers and data availability in Arab countries for SDG 15, but that do not have sufficient data.

Box 15.2	**Summary list of omitted targets**

- 15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
- 15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
- 15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
- 15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

- 15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

We note that two subindicators of 15.1.2 and indicator 15.4.1 are disaggregated by "value type" based on the "geographic location (point) and/or boundary (polygon)" of the sites or areas measured,[1] and that thus we only use the "mid-point" values which make the averages of the upper and lower boundaries. Furthermore, indicator 15.5.1 (Red List Index) is also disaggregated by "value type" but based on the assumption of whether all the data-deficient species are threatened (upper bound), none of them are threatened (lower bound), or the fraction of them that is threatened is the same as that of the data-sufficient species that are threatened (mid-point). According to the original source (IUCN, 2015), when the first leads to overestimated or pessimistic results on extinction risk and the second leads to underestimated or optimistic results, the third (the mid-point) is the best estimate and closer to the true value. Hence, we only consider the mid-point values which are actually the averages of the other two.

For indicator 15.a.1, the exact repetition of indicator 15.b.1, the main data set provided by the United Nations Statistics Division (that of the series which we kept) only includes recipient countries and omits the donor countries that then, by the nature of construction of a full matrix consisting of all countries in the world, take missing values, which are de facto zeroes. Hence, 21 Arab countries are covered by data.

Annex 15.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

Indicator 15.5.1 (The Red List Index) can not be aggregated to the regional or global level:

"While global Red List Indices can be disaggregated to show trends for species at smaller spatial scales, the reverse is not true. National or regional Red List Indices cannot be aggregated to produce Red List Indices showing global trends. This is because a taxon's global extinction risk has to be evaluated at the global scale and cannot be directly determined from multiple national scale assessments across its range (although the data from such assessments can be aggregated for inclusion in the global assessment)" (SDG Indicators Metadata Repository).

The global, regional, and subregional aggregates of 15.5.1 and all four series of 15.6.1 are calculated as unweighted means, while one series of 15.2.1 and 15.a.1 (same as 15.b.1), they are calculated using a total sum. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the data of the weighting variable is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the indicators/series whose global, regional and subregional aggregates are weighted averages: total land area in 2015; forest area in 2015; and mountain area in 2017. The data of all the weighting variables are taken from the United Nations Statistics Division Global SDG Database. The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

In the case of both series of 15.1.2 (Average proportion of freshwater KBAs covered by protected areas (percentage) and Average proportion of terrestrial KBAs covered by protected areas (percentage)), we would want to use freshwater KBAs and terrestrial KBAs as our weighting variables. However, since they were not readily available on a country level, total land area in 2015 was used as a proxy weight instead. Similarly for one series of 15.4.1 (Average proportion of mountain KBAs covered by protected areas (percentage)), we would want to use mountain KBAs as our weighting variable, but since it was not readily available on a country level, total land area in 2015 was used as a proxy weight instead.

Finally, we note again that the weighting variables sometimes prevent us from evaluating the series/indicator using all data that are available or provided to us, despite some efforts and compromises to mitigate this problem. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies to 15.2.1 (Forest area net change rate (percentage)), losing two of the available Arab countries.

[1] This is according to the SDG Indicators Metadata Repository and the original source (UNEP).

We calculate the world, regional and subregional averages for each indicator. However, we are not able to include the target value to facilitate comparability for any of the analysed indicators/subindicators since the official desired target values cannot be inferred from the official target descriptions.

Table 15.2 Targets, indicators, tiers and data availability for Arab countries – SDG 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainable manage forests, combat desertification, and to halt and reverse land degradation and halt biodiversity loss)

Target	Indicator	Number of subindicators	Tier	Data availability*
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	15.1.1 Forest area as a proportion of total land area	1 chosen out of 3	Tier I	22
	15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	2 chosen out of 2	Tier I	13, 22
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	15.2.1 Progress towards sustainable forest management	5 chosen out of 6	Tier I	14, 22, 21, 10, 13
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	15.3.1 Proportion of land that is degraded over total land area	(No data)	Tier II	x
15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	15.4.1 Coverage by protected areas of important sites for mountain biodiversity	1 chosen out of 1	Tier I	19
	15.4.2 Mountain Green Cover Index	1 chosen out of 3	Tier I	19
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	15.5.1 Red List Index	1 chosen out of 1	Tier I	22

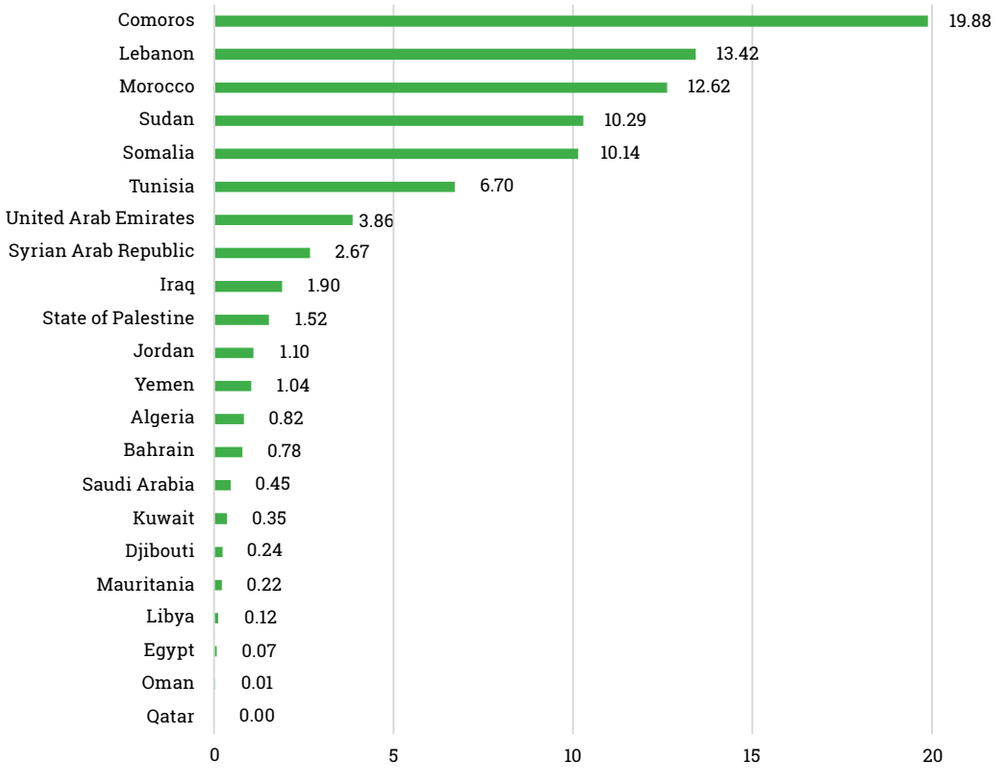
15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed	15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits	4 chosen out of 5	Tier I	22
15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products	15.7.1 Proportion of traded wildlife that was poached or illicitly trafficked	(No data)	Tier II	x
15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species	(No data)	Tier II	x
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020	(No data)	Tier III	x
15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	15.a.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems	1 chosen out of 2	Tier I/III	22
15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	15.b.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems	1 chosen out of 2**	Tier I/III	22
15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities	15.c.1 Proportion of traded wildlife that was poached or illicitly trafficked	(No data)	Tier II	x

Note: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
** The same as the subindicator of 15.a.1.
We note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. A such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional, and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the weighting variable's data availability.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 15.1. Indicator 15.1.1 - Forest area as a proportion of total land area

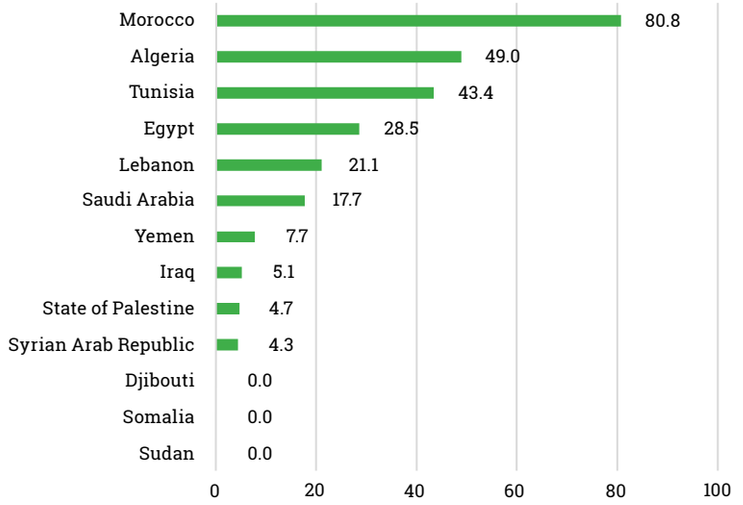
Forest area as a proportion of total land area (percentage)



Note: All data are from 2015.

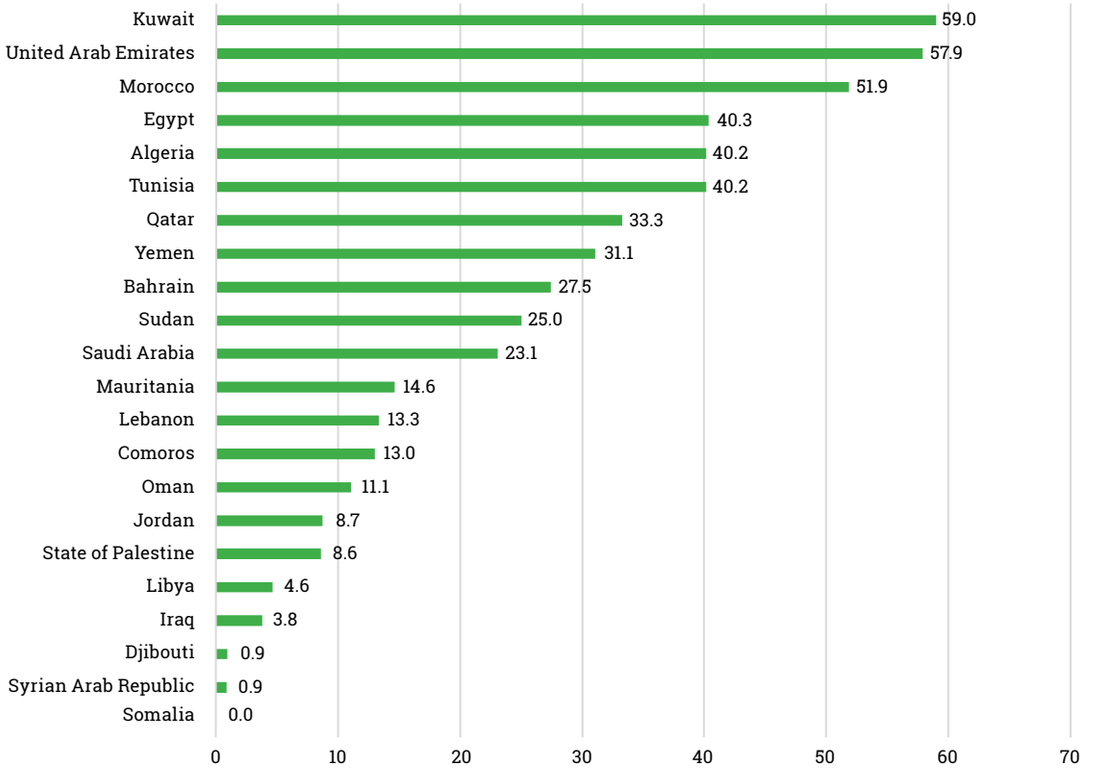
Figure 15.2 Two series of indicator 15.1.2 - Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

Average proportion of freshwater KBAs covered by protected areas (percentage)



Note: All data are for 2017.

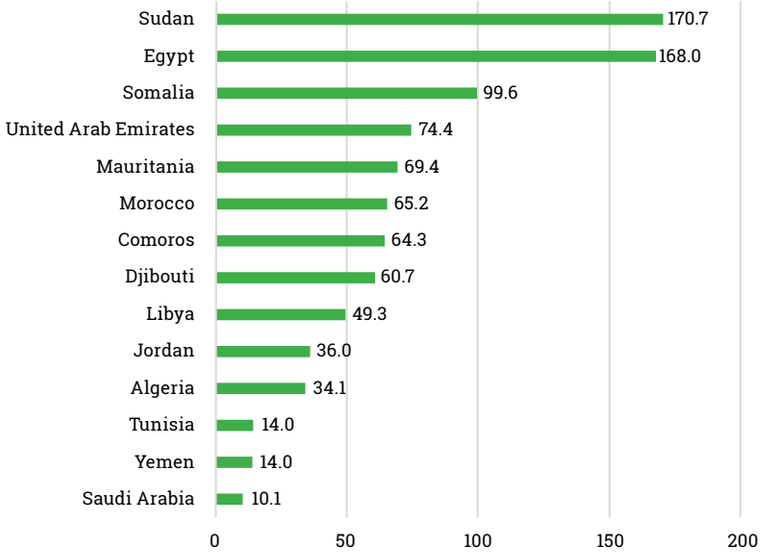
Average proportion of terrestrial KBAs covered by protected areas (percentage)



Note: All data are for 2017.

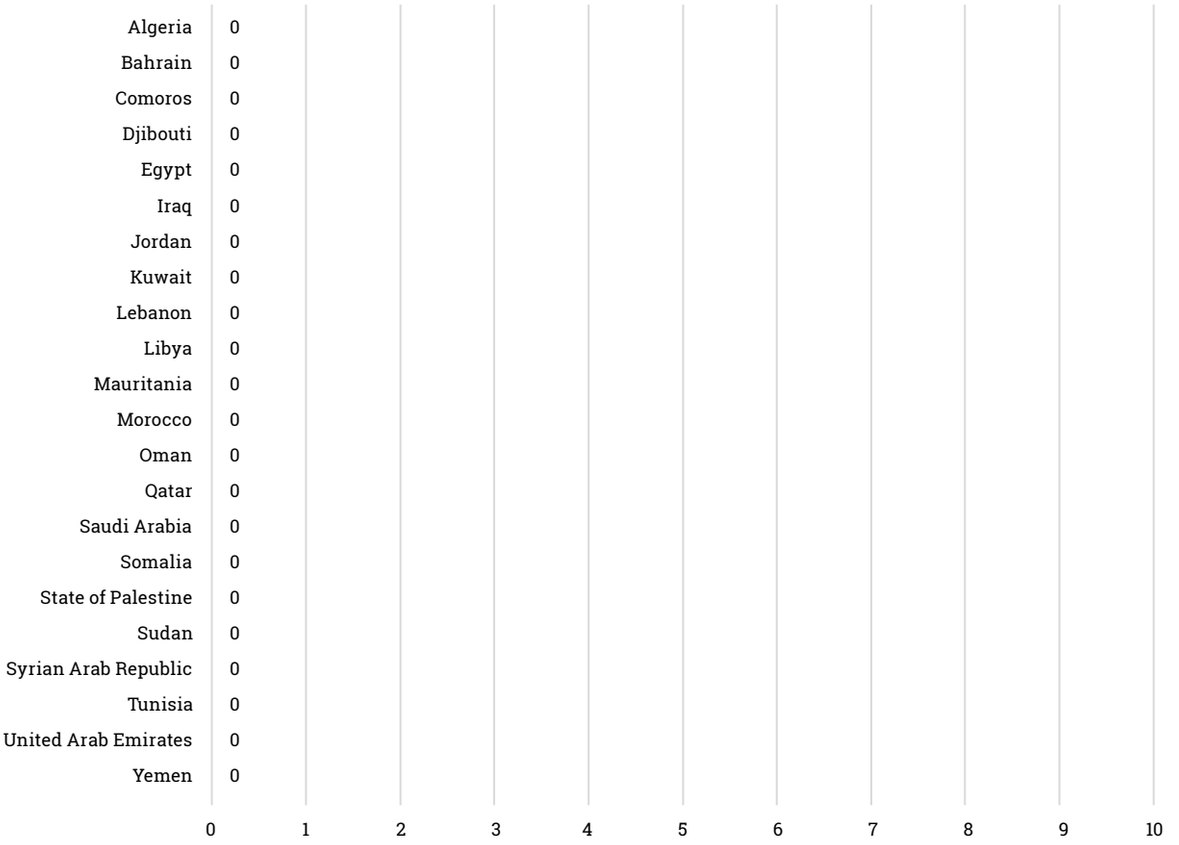
Figure 15.3 Five series of indicator 15.2.1 - Progress towards sustainable forest management

Above-ground biomass in forest per hectare (tonnes per hectare)



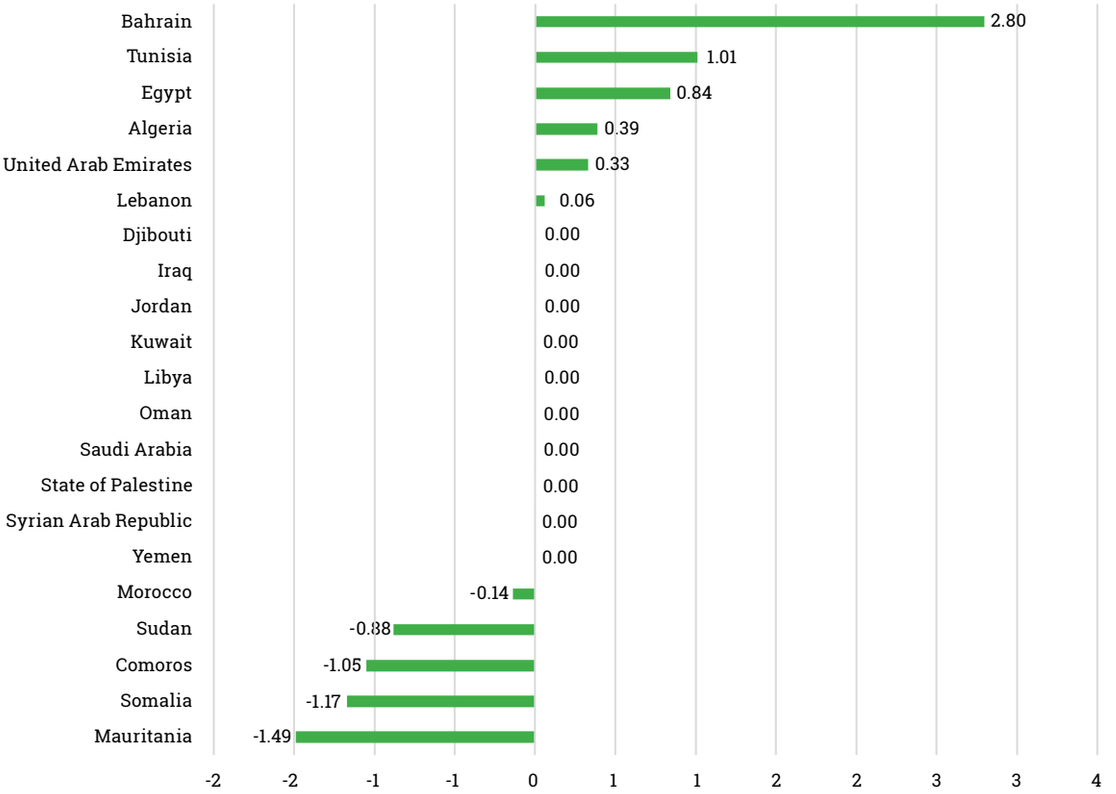
Note: All data are for 2015.

Forest area certified under an independently verified certification scheme (thousands of hectares)



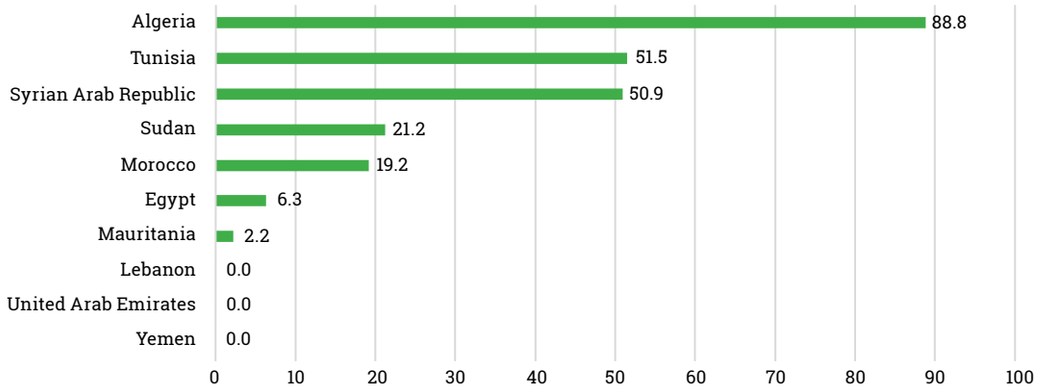
Note: All data are for 2017.

Forest area net change rate (percentage)



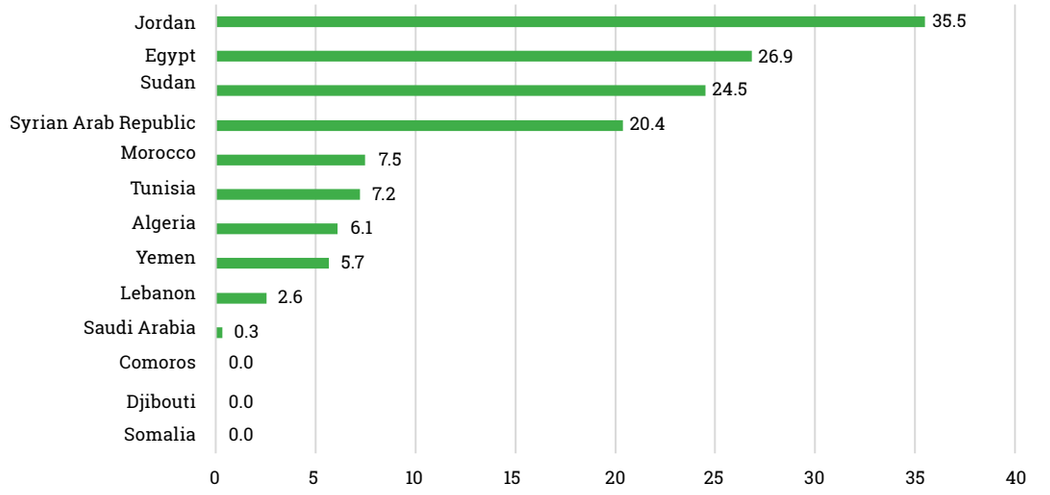
Note: All data are for 2015.

Proportion of forest area with a long-term management plan (percentage)



Note: All data are for 2010.

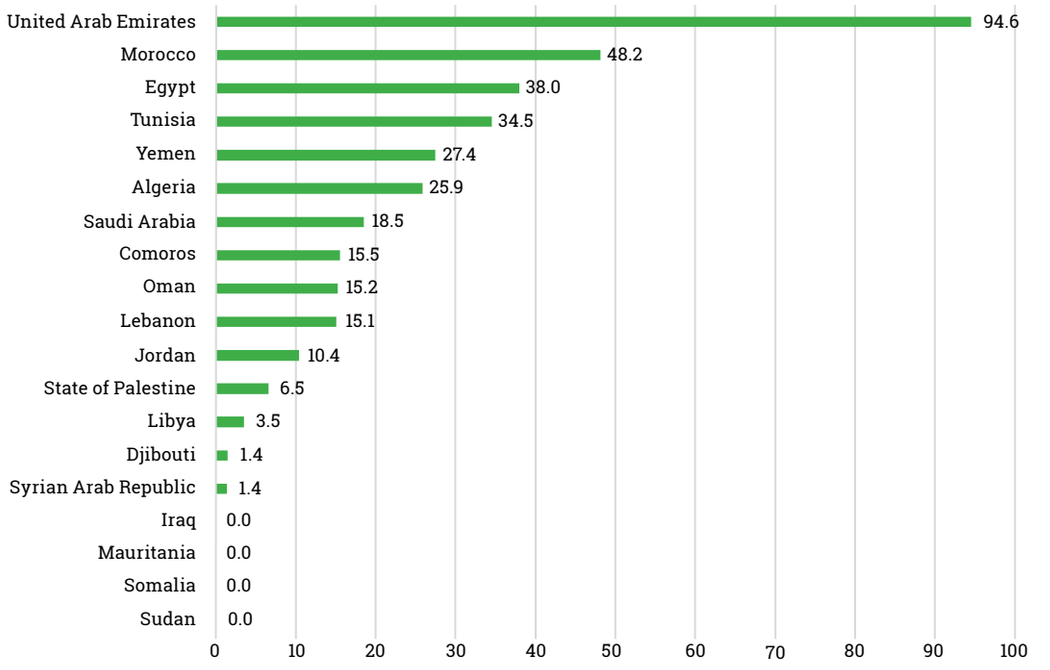
Proportion of forest area within legally established protected areas (percentage)



Note: All data are for 2015 apart from Syrian Arab Republic (2010).

Figure 15.4 Indicator 15.4.1 - Coverage by protected areas of important sites for mountain biodiversity

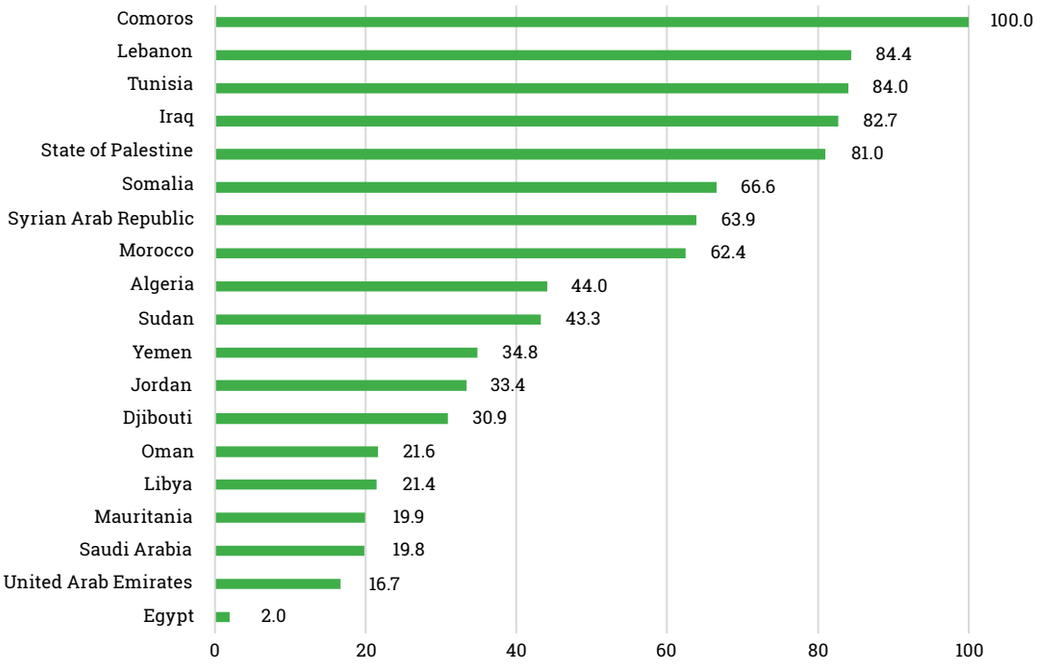
Average proportion of mountain KBAs covered by protected areas (percentage)



Note: All data are for 2017.

Figure 15.5 Indicator 15.4.2 - Mountain Green Cover Index

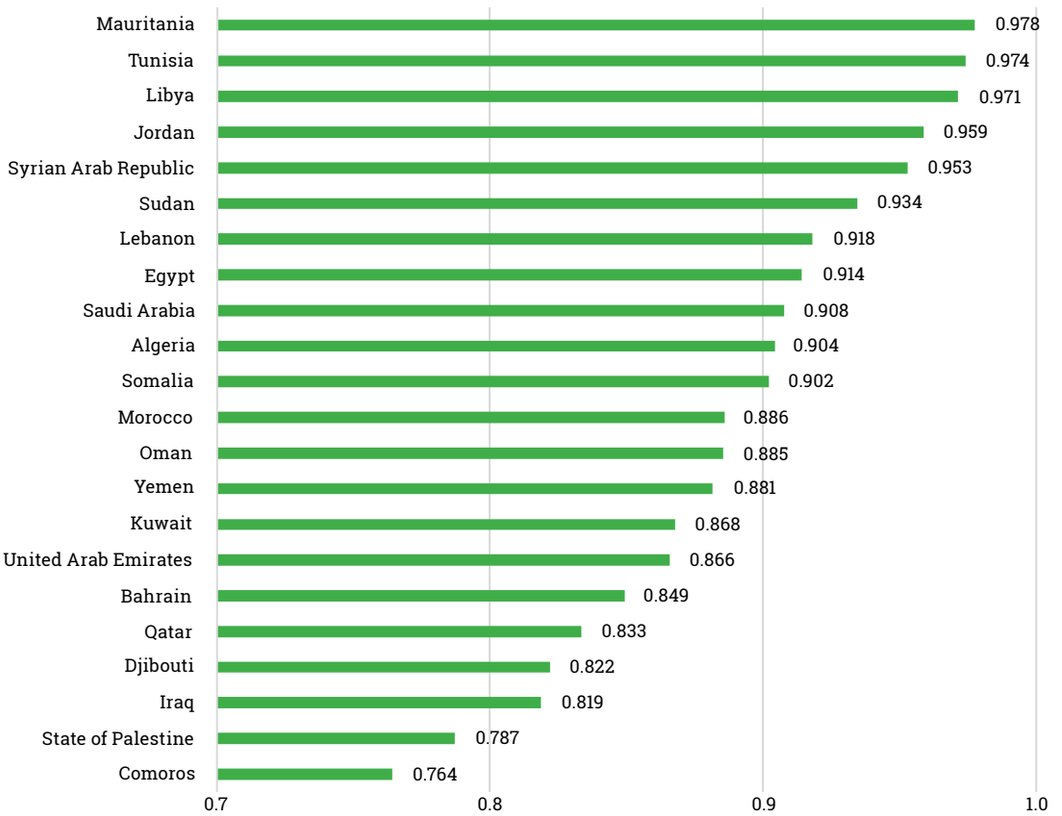
Mountain Green Cover Index



Note: All data are for 2017.

Figure 15.6 Indicator 15.5.1 - Red List Index

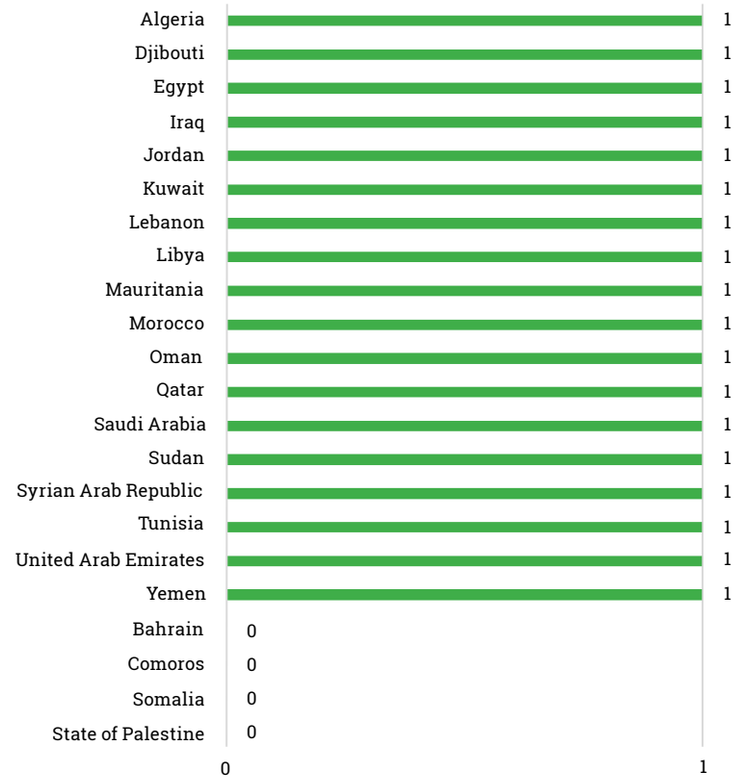
The Red List Index



Note: The index ranges from 0 to 1. All data are for 2017.

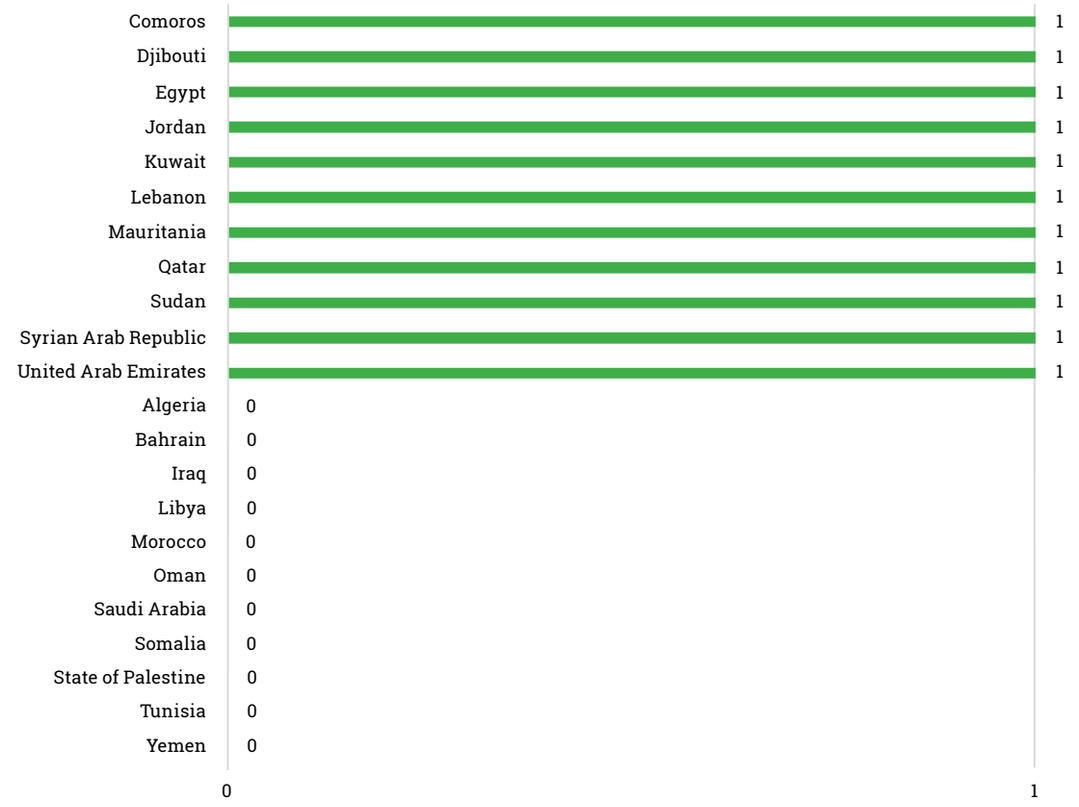
Figure 15.7 Four series of indicator 15.6.1 - Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits

Countries that are contracting Parties to the International Treaty on PGRFA



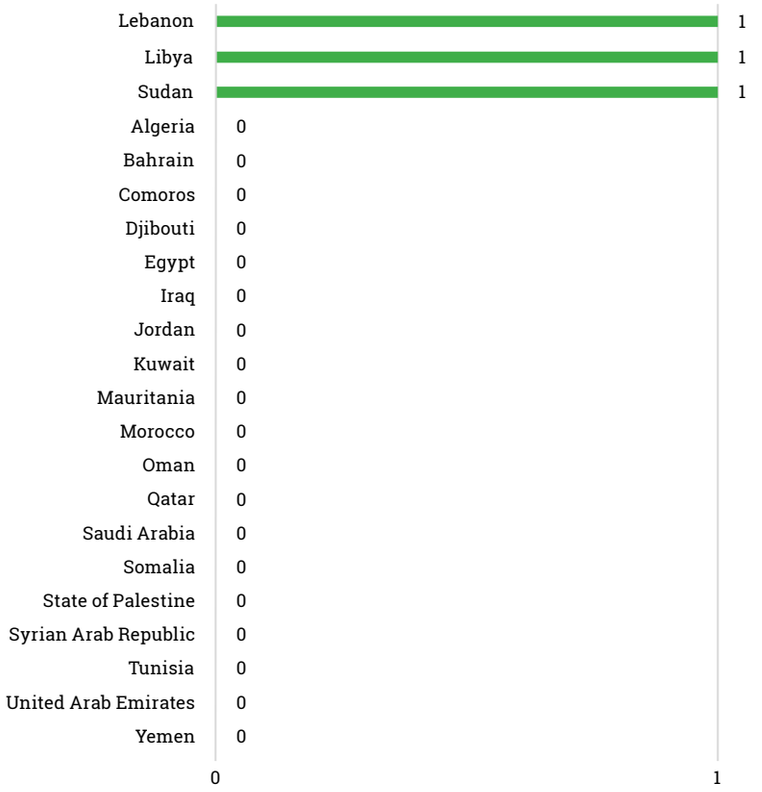
Note: 1 = yes; 0 = no. All data are for 2017.

Countries that are parties to the Nagoya Protocol



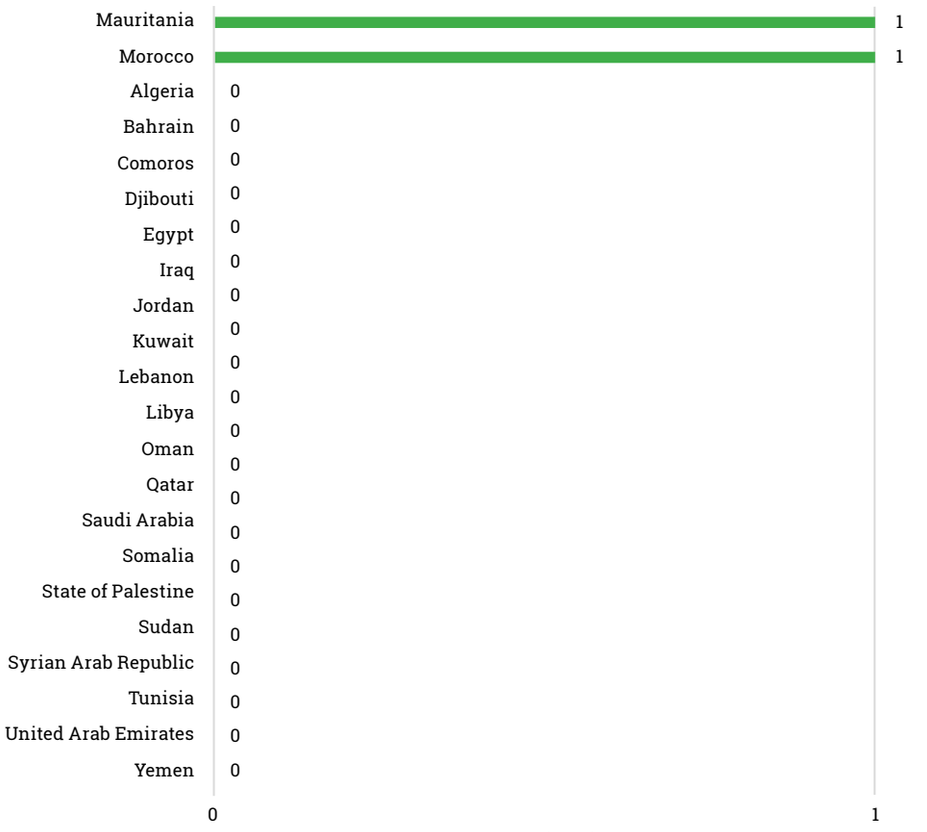
Note: 1 = yes; 0 = no. All data are for 2012 apart from Yemen (2015).

Countries that have legislative, administrative and policy framework or measures reported through the Online Reporting System on Compliance of the International Treaty on PGRFA



Note: 1 = yes; 0 = no. All data are for 2017.

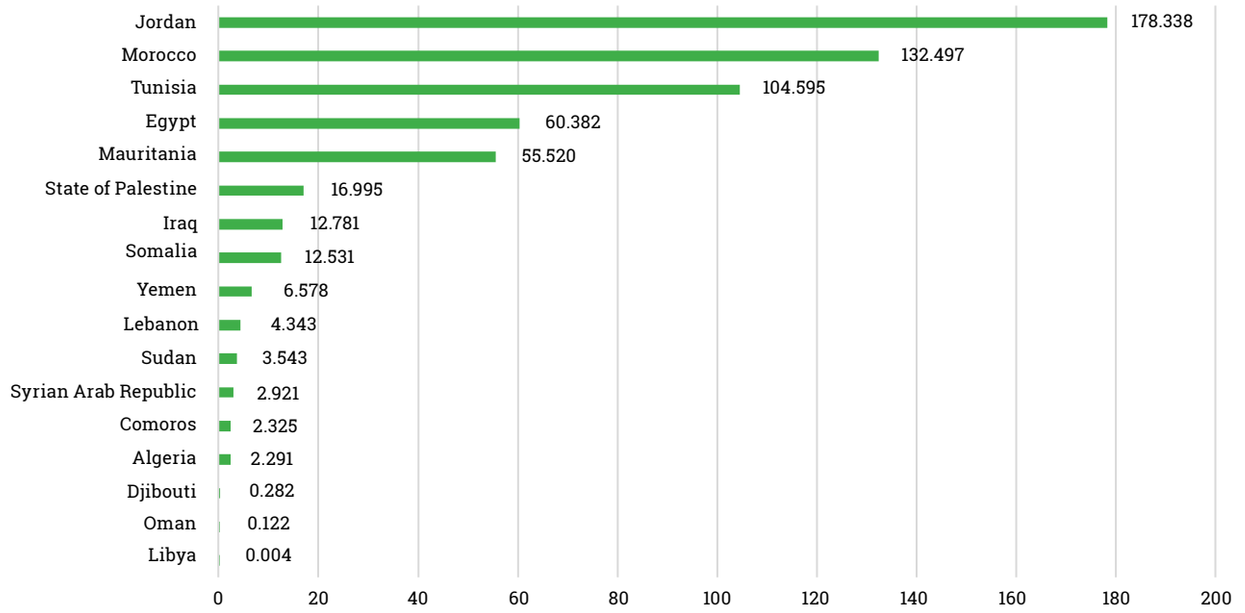
Countries that have legislative, administrative and policy framework or measures reported to the Access and Benefit-Sharing Clearing-House



Note: 1 = yes; 0 = no. All data are for 2012 apart from Yemen (2015).

Figure 15.8 Indicator 15.a.1 - Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

Total official development assistance for biodiversity, by recipient countries (millions of constant 2017 United States dollars)



Note: All data are for 2017 apart from Oman (2010) and Libya (2016). The illustration is the same for indicator 15.b.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems.

Indicator 15.b.1 - Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

Annex to chapter 16

1. Data for SDG 16

SDG 16 comprises 12 targets and a total of 23 indicators (three of which contain multiple subindicators). Of these indicators, six are tier I, 10 are tier II, and seven are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of 11 indicators: 16.1.1 - Number of victims of intentional homicide per 100,000 population, by sex and age; 16.2.1- Proportion of children aged 1–17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month; 16.2.2 - Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation; 16.2.3 - Proportion of young women and men aged 18–29 years who experienced sexual violence by age 18; 16.3.2 - Unsentenced detainees as a proportion of overall prison population; 16.5.2 - Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months; 16.8.1 - Proportion of members and voting rights of developing countries in international organizations; 16.9.1 - Proportion of children under 5 years of age whose births have been registered with a civil authority, by age; 16.10.1 - Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and human rights advocates in the previous 12 months; 16.10.2 - Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information; and 16.a.1 - Existence of independent national human rights institutions in compliance with the Paris Principles.

None of the provided data sets include sex disaggregated data.

The data used in the analysis of SDG 16 was downloaded on 25 June 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, no large differences were found, and thus none of the data series needed to be replaced or amended.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 16.2.2, 16.2.3, 16.3.2 and 16.10.1, 8 of the 22 series of indicator 16.8.1, as well as two of the six series of 16.a.1 (Proportion of countries with independent National Human Rights Institutions in compliance with the Paris Principles and Proportion of countries that applied for accreditation as independent National Human Rights Institutions in compliance with the Paris Principles) which merely cover regions or country groupings as it also could be inferred from their definitions. When there are many subindicators that mean the same but are expressed differently (like in the case of the two series under indicator 16.1.1), we choose the subindicator that is more representative and easier to interpret and has more data availability. This leads us to omit one of the two series of 16.1.1, keeping “Number of victims of intentional homicide per 100,000 population (victims per 100,000 population)”.

Indicator 16.8.1 is the exact repetition of 10.6.1 (Proportion of members and voting rights of developing countries in international organizations). We evaluate the data in both chapters.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2018. Table 16.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 16.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
16.1.1 (Number of victims of intentional homicide per 100,000 population (victims per 100,000 population))	69 (3)	2016
	68 (9)	2015
	24 (4)	2014
	5 (1)	2013
	26 (3)	2012
	9 (0)	2011
	3 (1)	2010
16.2.1 (Proportion of children aged 1–14 years who experienced physical punishment and/or psychological aggression by caregivers in last month)	10 (0)	2016
	7 (1)	2015
	19 (3)	2014
	8 (2)	2013
	13 (3)	2012
	7 (1)	2011
	4 (0)	2010
	2 (1)	2009
16.5.2 (Proportion of firms experiencing at least one bribe payment request (bribery incidence))	17 (1)	2016
	9 (0)	2015
	11 (2)	2014
	46 (7)	2013
	2 (0)	2012
	4 (1)	2011
	25 (0)	2010
	13 (0)	2009

16.9.1 (Proportion of children under 5 years of age whose births have been registered with a civil authority)	14 (0)	2016
	20 (2)	2015
	56 (3)	2014
	18 (2)	2013
	22 (4)	2012
	10 (2)	2011
	11 (0)	2010
	5 (1)	2009

The data series corresponding to 16.10.2 only includes countries that have ever adopted and implemented constitutional, statutory and/or policy guarantees for public access to information and assigns these countries the year in which the guarantees in question were enacted as a value. Therefore, we use this series to create a dummy variable that takes a value of 1 if the country is included in the original data set (i.e. the country is assigned an enactment year, meaning it has ever adopted and implemented a law/policy for public access to information) and value of 0 if not. The data of the original series is reported in 2018 only, informing about enactments that happened between 1766 and 2017. This means that there is no need for data substitution as the dummy variable we create includes all countries of the world and indicates if a certain country has or still lacks guarantees for public access to information which came to place before or during our base year (2017).

Moreover, the four remaining subindicators of 16.a.1 are dummy variables indicating which countries have National Human Rights Institutions that are fully compliant with the Paris Principles, which ones have National Human Rights Institutions that are not fully compliant with the Paris Principles, which ones have National Human Rights Institutions but no status with the Paris Principles (fully compliant, partially compliant or observer status, according to the metadata), and which ones have National Human Rights Institutions but have not applied for accreditation with the Paris Principles (i.e. have not applied to have their status with the Paris Principles determined). We note that each of these dummy variables only includes the countries that take a value of 1 as per its definition and that there is no country that overlaps between any of the four variables in a certain year. Knowing that a country that has no status or has not even applied for accreditation with the Paris Principles can be fully compliant, partially compliant or non-compliant, there is no clear, objective and undisputable criterion to compare the four categories depicted by the four dummies and to rank them ordinally in terms of performance. However, being compliant or at least partially compliant with the Paris Principles is unequivocally an aim in the framework of the development agenda and the SDGs. Therefore, we create a dummy variable that takes a value of 1 if the country is fully or partially compliant in 2017 (using the first two series which inform on the full and partial compliance statuses) and a value of 0 if not; meaning that we disregard the series informing on the absence of a status or of an application for accreditation as well as the data corresponding to all years except for 2017. This generates a binary data series that reports on the full/partial compliance with the Paris Principles in our base year (2017) and covers all countries of the world, including Arab countries. Therefore, we do not attempt to take into account any data pertaining to years other than 2017.

Indicator 16.8.1 includes 22 subindicators. Eleven of them represent “the proportion of members” in each of 11 different international organizations, where the proportion of members is calculated by the data source as the membership seat of the country or territory divided by the total available membership seats for a certain international organization or, in the case of regional observations, as the number of members from a certain region in that organization divided by the total number of members (percentage). The other 11 subindicators represent “the proportion of voting rights” in each of 11 different international organizations, where the proportion of voting rights is calculated by the data source as the share of voting rights of a country, territory or region in a certain organization, which sometimes depends on the share or contribution in this organization, divided by the total voting rights granted (percentage). We omit all the series corresponding

to region-based international organizations (i.e. the Asian Development Bank, the African Development Bank and the Inter-American Development Bank) as they only cover a specific sample of the world's countries or territories, unlike the rest of the organizations. We also omit the series corresponding to the Financial Stability Board which has 24 members that are developed countries or territories (with China being the only emerging country) and are entitled to provide mentorship and advice to developing countries on financial issues and related international standard-setting mechanisms. All these omitted series also have poor data availability for Arab countries throughout their time spans. Consequently, only seven data series are left for each of the memberships and the voting rights dimensions, informing on the rest of the seven international organizations.

We transform each of the seven remaining subindicators that report on the memberships of countries or territories in the considered international organizations into a dummy variable, merely considering the year 2017, where a country or territory takes a value of 1 if it is a member of the organization in question in 2017 and a value of 0 otherwise. In other terms, countries or territories that have a missing value instead of a proportion of membership value in the original data series for 2017 are all assigned zeros. We create our own dummy variables because the calculation method provided by the original data source only provides the share of developing countries in each organization, which does not vary from observation to observation, while what we need is to know whether or not a certain country or territory is a member of a certain organization and to develop a score showing the situation of countries or territories at this level across all organizations. The seven dummy variables are then aggregated using a simple arithmetic mean, yielding mean scores that are specific to the country or territory.

As for the seven remaining subindicators that report on the voting rights, we keep them as they are and only for the year 2017, and then we replace the missing values by zeros, since a country or territory has a missing value for its voting right in a certain organization when it is not a member of this institution, meaning also that its voting rights are non-existent or zero. The seven data series on voting rights are also aggregated using a simple arithmetic mean that is divided by 100 to get the share instead of the percentage of voting rights, for the purpose of getting to the same range of 0–1 used in the previous variable for this indictor. After that, the Arab, subregional and regional means of the two subindicators/created indices of 16.8.1 are generated and visualized separately but in the same chart.

Accordingly, there is no need to apply our data substitution scheme for year 2017 on indicator 16.8.1 either since, logically and technically, the two created and evaluated aggregates do not suffer any problem of data availability and also fully cover the World and the Arab region. We note that the series depicting the voting rights at the IFC mistakenly has a value of 4.053E-06 for Luxembourg, which is an IFC member, though. By referring to the original data source, as advised by the SDG Indicators Metadata Repository of the United Nations Statistics Division, this close-to-null value is corrected to 0.11 per cent. Moreover, we note that the State of Palestine does not exist in any of the data series under 16.8.1 and is assigned a value of 0 in all of them.

Finally, we note that, for 16.2.1, the age group addressed in the provided data series is only children aged 1–14 years and that the age group addressed in the data series for 16.9.1 is children under 5 years of age.

This leaves us with 21 integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 16.1.

Box 16.1	Summary list of preserved and examined indicators/subindicators

- Indicator 16.1.1 – 1 series out of 2 – Number of victims of intentional homicide per 100,000 population, by sex and age
- Indicator 16.2.1 – Proportion of children aged 1–17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month
- Indicator 16.5.2 – Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months
- Indicator 16.8.1 – 14 series out of 22 – Proportion of members and voting rights of developing countries in international organizations
- Indicator 16.9.1 – Proportion of children under 5 years of age whose births have been registered with a civil authority, by age
- Indicator 16.10.2 – Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information
- Indicator 16.a.1 – 2 series out of 6 – Existence of independent national human rights institutions in compliance with the Paris Principles

However, we lose the ability to determine the region's position on the rest of the targets, indicators and subindicators as noted in box 16.2, including those in table 16.2 on targets, indicators, tiers and data availability in Arab countries for SDG 16, but that do not have sufficient data.

Box 16.2	Summary list of omitted targets

- 16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all
- 16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime
- 16.6 Develop effective, accountable and transparent institutions at all levels
- 16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels
- 16.b Promote and enforce non-discriminatory laws and policies for sustainable development

Annex 16.2 for a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of 16.5.2, 16.10.2, each of the two subindicators or created indices of 16.8.1, and the created dummy variable of 16.a.1 are calculated using a simple arithmetic mean. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the series/indicator whose global, regional and subregional aggregates are weighted averages: Total population in 2015 (from the World Population Prospects), Total population of

children under 5 years of age in 2015 (from the World Population Prospects), and Total population of children aged 1–14 years in 2015 (from the World Population Prospects). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator. We note that, when a certain series or indicator need a population-related weighting variable in 2016 or 2017, we use the latest available data for this variable, i.e. data for 2015, that is provided by the World Population Prospects (WPP).

We calculate the world, regional and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For 16.2.1, whose target aims is to "End abuse, exploitation, trafficking and all forms of violence against and torture of children", we consider the target value as 0 per cent of children aged 1–14 years who experienced physical punishment and/or psychological aggression by caregivers in last month. For 16.9.1, whose target aims is to "Provide legal identity for all, including birth registration, by 2030", we set the target value as 100 per cent of children under 5 years of age whose births have been registered with a civil authority. As for 16.10.2, whose target aims is to "Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements", we consider the target value as 1 since the corresponding indicator consists of a dummy variable that takes a value of 1 when a country has ever adopted and implemented constitutional, statutory and/or policy guarantees for public access to information. Similarly, for 16.a.1, whose target seeks to "Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime", we set the target value as 1 since the corresponding indicator consists of a dummy variable that takes a value of 1 when a country has National Human Rights Institutions that are fully or partially compliant with the Paris Principles. However, we remain unable to determine the desired target values for the rest of the indicators (16.1.1, 16.5.2 and 16.8.1) since it is not possible to infer them from the official titles of the corresponding targets, and thus they are not shown.

Table 16.2 Targets, indicators, tiers and data availability for Arab countries – SDG 16 (Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels)

Target	Indicator	Number of subindicators	Tier	Data availability*
16.1 Significantly reduce all forms of violence and related death rates everywhere	16.1.1 Number of victims of intentional homicide per 100,000 population, by sex and age	1 chosen out of 2	Tier I	21
	16.1.2 Conflict-related deaths per 100,000 population, by sex, age and cause	(No data)	Tier III	x
	16.1.3 Proportion of population subjected to physical, psychological or sexual violence in the previous 12 months	(No data)	Tier II	x
	16.1.4 Proportion of population that feel safe walking alone around the area they live	(No data)	Tier II	x

16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children	16.2.1 Proportion of children aged 1–17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month	1 chosen out of 1	Tier II	11
	16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation	(Dropped) 1	Tier II	x
	16.2.3 Proportion of young women and men aged 18–29 years who experienced sexual violence by age 18	(Dropped) 1	Tier II	x
16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all	16.3.1 Proportion of victims of violence in the previous 12 months who reported their victimization to competent authorities or other officially recognized conflict resolution mechanisms	(No data)	Tier II	x
	16.3.2 Unsentenced detainees as a proportion of overall prison population	(Dropped) 1	Tier I	x
16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime	16.4.1 Total value of inward and outward illicit financial flows (in current United States dollars)	(No data)	Tier III	x
	16.4.2 Proportion of seized, found or surrendered arms whose illicit origin or context has been traced or established by a competent authority in line with international instruments	(No data)	Tier III	x
16.5 Substantially reduce corruption and bribery in all their forms	16.5.1 Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months	(No data)	Tier II	x
	16.5.2 Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months	1 chosen out of 1	Tier II	11

16.6 Develop effective, accountable and transparent institutions at all levels	16.6.1 Primary government expenditures as a proportion of original approved budget, by sector (or by budget codes or similar)	(No data)	Tier I	x
	16.6.2 Proportion of population satisfied with their last experience of public services	(No data)	Tier III	x
16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	16.7.1 Proportions of positions (by sex, age, persons with disabilities and population groups) in public institutions (national and local legislatures, public service, and judiciary) compared to national distributions	(No data)	Tier III	x
	16.7.2 Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group	(No data)	Tier III	x
16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance	16.8.1 Proportion of members and voting rights of developing countries in international organizations	14 chosen out of 22	Tier I	22
16.9 By 2030, provide legal identity for all, including birth registration	16.9.1 Proportion of children under 5 years of age whose births have been registered with a civil authority, by age	1 chosen out of 1	Tier I	14
16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	16.10.1 Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and human rights advocates in the previous 12 months	(Dropped) 1	Tier II	x
	16.10.2 Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information	1 chosen out of 1	Tier II	22
16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime	16.a.1 Existence of independent national human rights institutions in compliance with the Paris Principles	2 chosen out of 6	Tier I	22

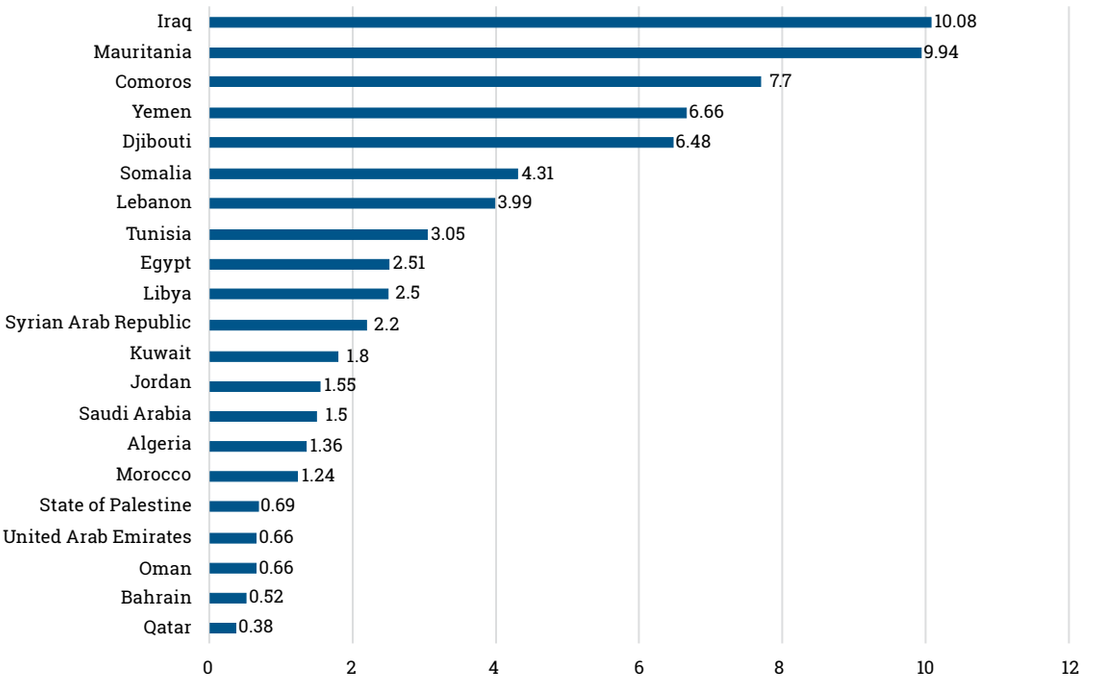
16.b Promote and enforce non-discriminatory laws and policies for sustainable development	16.b.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law	(No data)	Tier III	x

Note: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

2. Country graphs

Figure 16.1 Indicator 16.1.1 - Number of victims of intentional homicide per 100,000 population, by sex and age

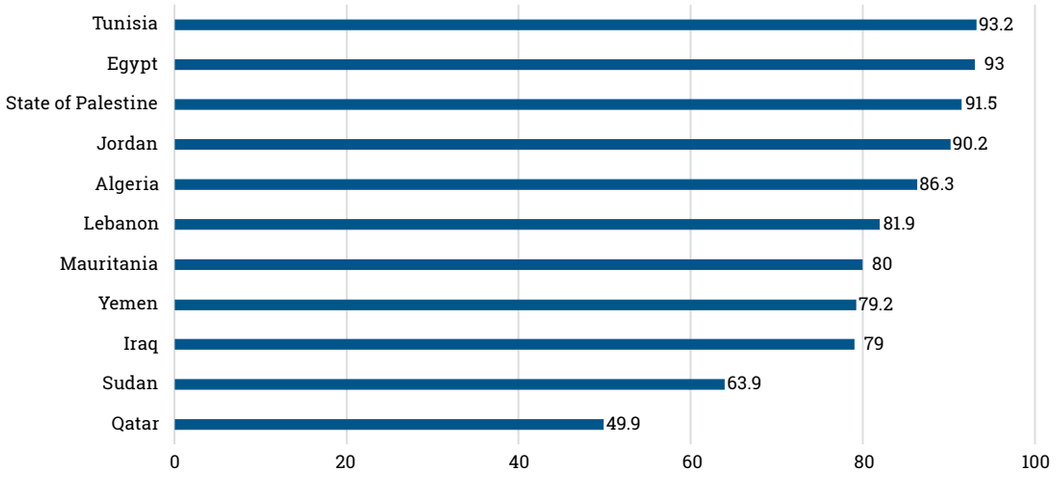
Number of victims of intentional homicide per 100,000 population



Note: Data are from various years as follows: Syrian Arab Republic (2010), Egypt, Kuwait, Tunisia (2012), Yemen (2013), Bahrain, Iraq, Oman, Qatar (2014), Algeria, Comoros, Djibouti, Libya, Mauritania, Morocco, Saudi Arabia, Somalia, United Arab Emirates (2015), Jordan, Lebanon, State of Palestine (2016).

Figure 16.2 Indicator 16.2.1 - Proportion of children aged 1–17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month

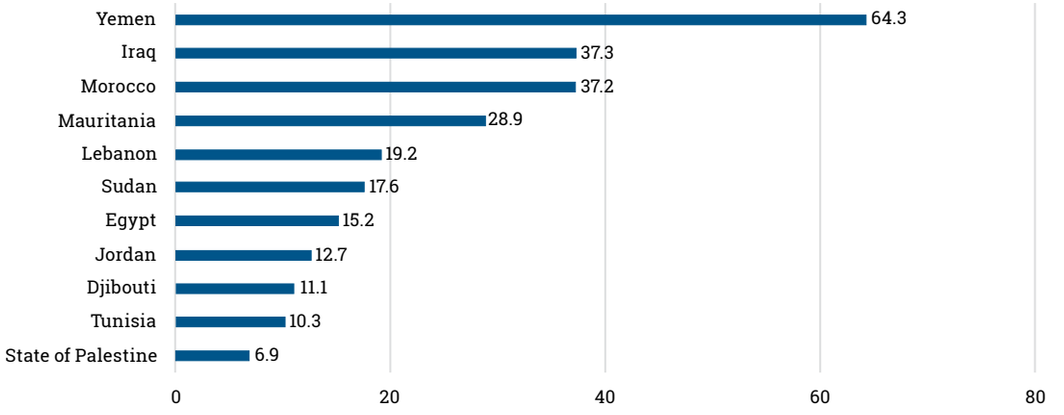
Proportion of children aged 1–14 years who experienced physical punishment and/or psychological aggression by caregivers in last month (percentage)



Note: Data are from various years as follows: Lebanon (2009), Iraq (2011), Jordan, Qatar, Tunisia (2012), Algeria, Yemen (2013), Egypt, State of Palestine, Sudan (2014), Mauritania (2015).

Figure 16.3 Indicator 16.5.2 - Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months

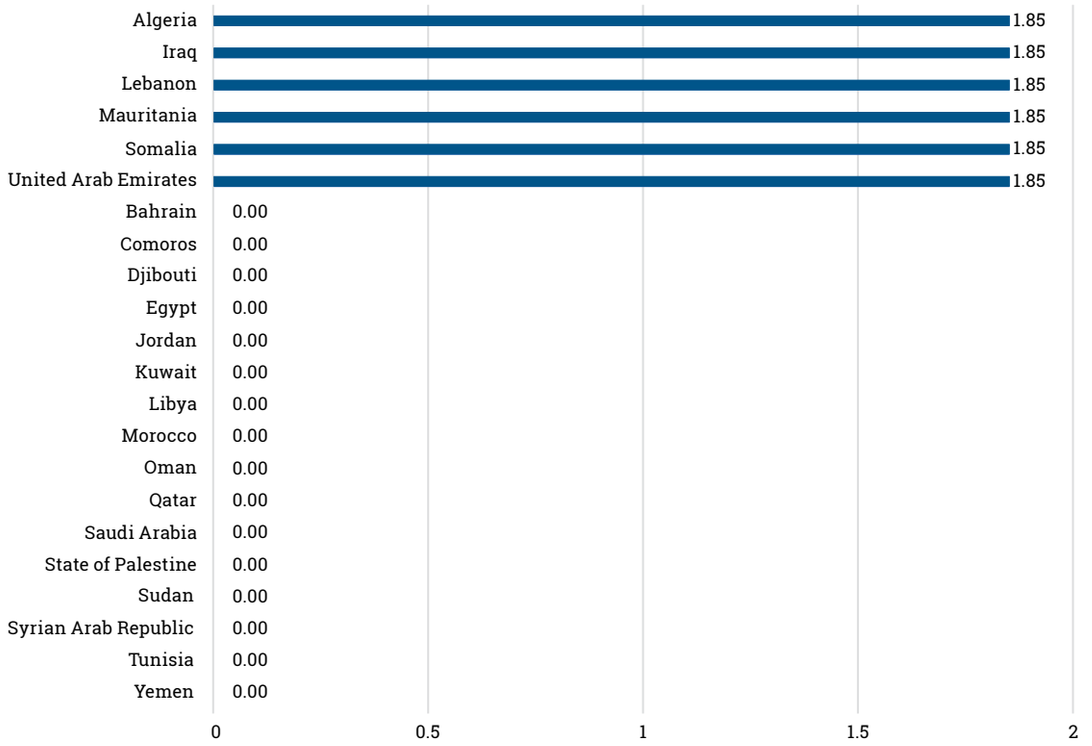
Bribery incidence/proportion of firms experiencing at least one bribe payment request (percentage)



Note: Data are from 2013 apart from Iraq (2011), Sudan (2014) and Egypt (2016).

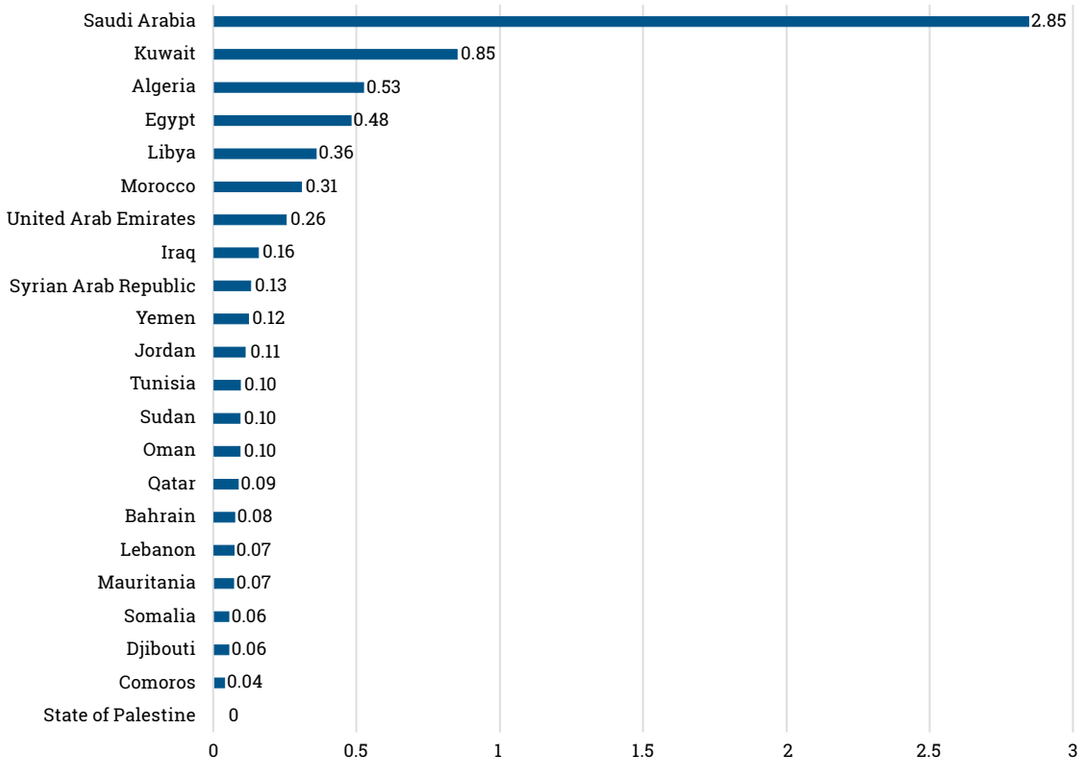
Figure 16.4 Fourteen series of Indicator 16.8.1 - Proportion of members and voting rights of developing countries in international organizations

Proportion of voting rights in the United Nations Economic and Social Council (percentage)



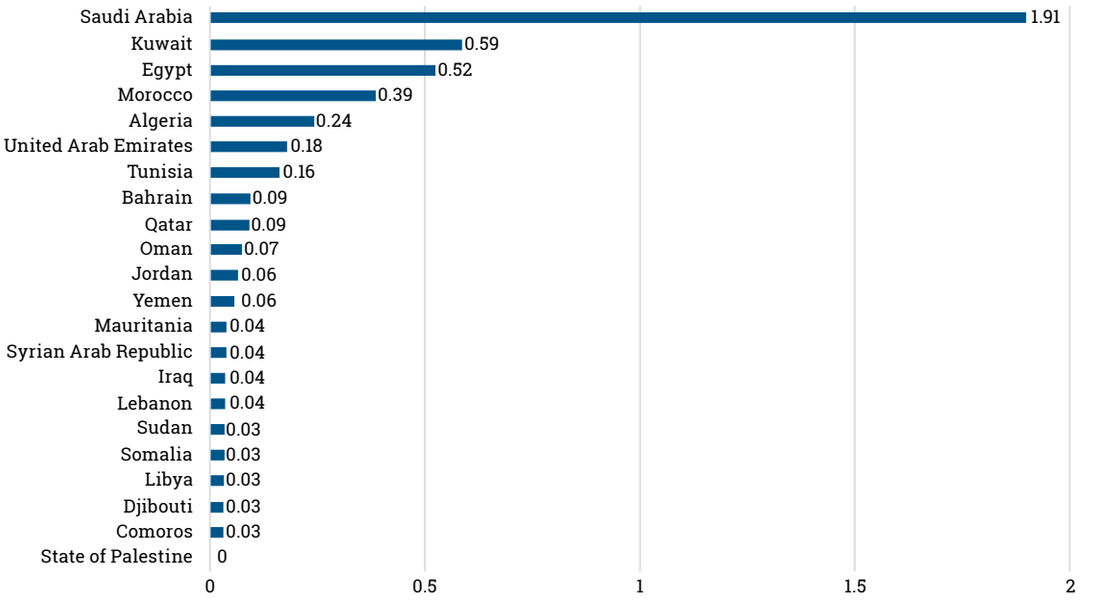
Note: All data are from 2017.

Proportion of voting rights in the International Bank for Reconstruction and Development (percentage)



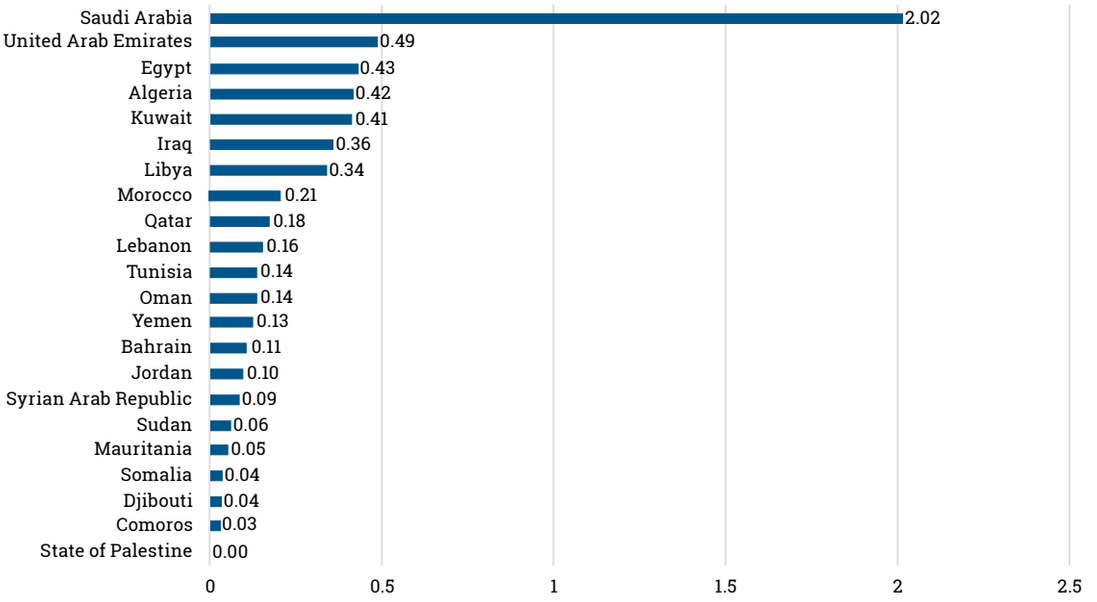
Note: All data are from 2017.

Proportion of voting rights in the International Finance Corporation (percentage)



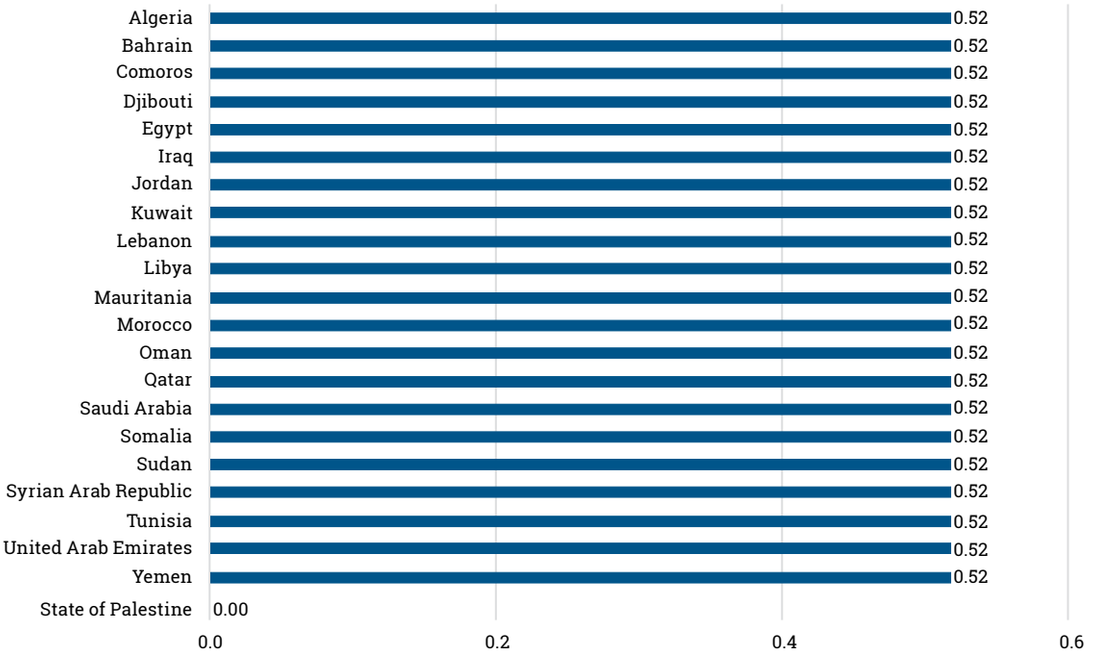
Note: All data are from 2017.

Proportion of voting rights in the International Monetary Fund (percentage)



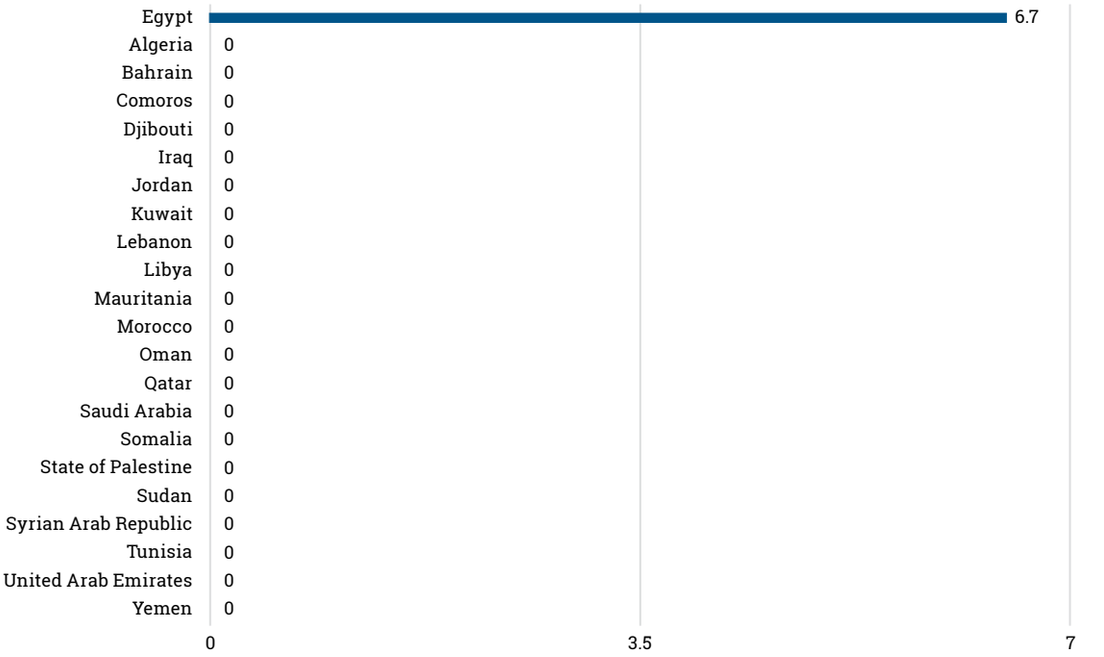
Note: All data are from 2017.

Proportion of voting rights in the United Nations General Assembly (percentage)



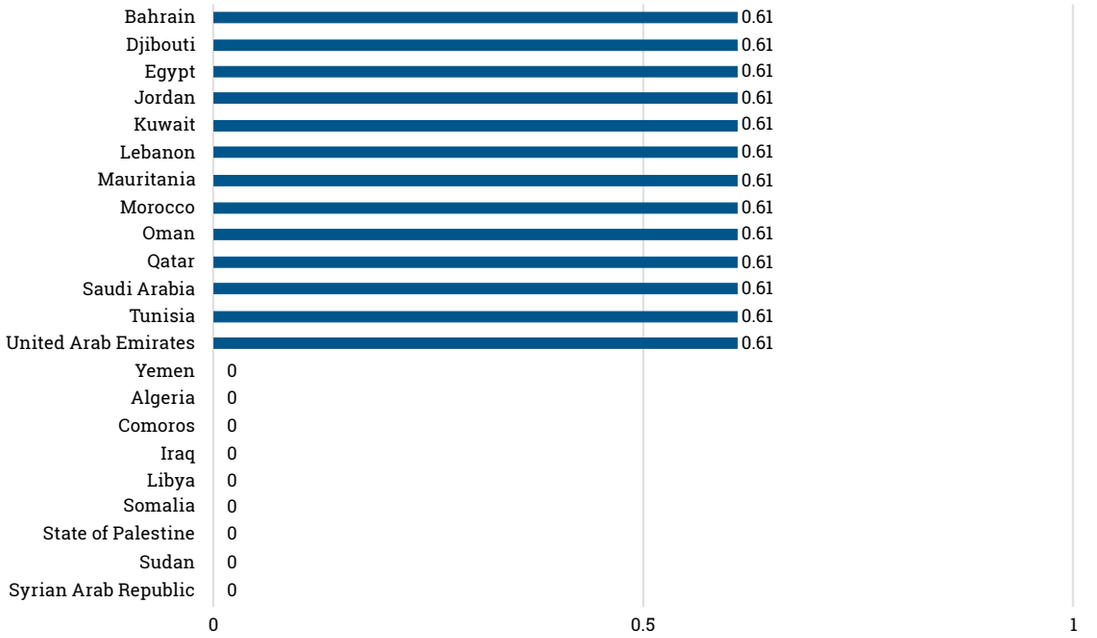
Note: All data are from 2017.

Proportion of voting rights in the United Nations Security Council (percentage)



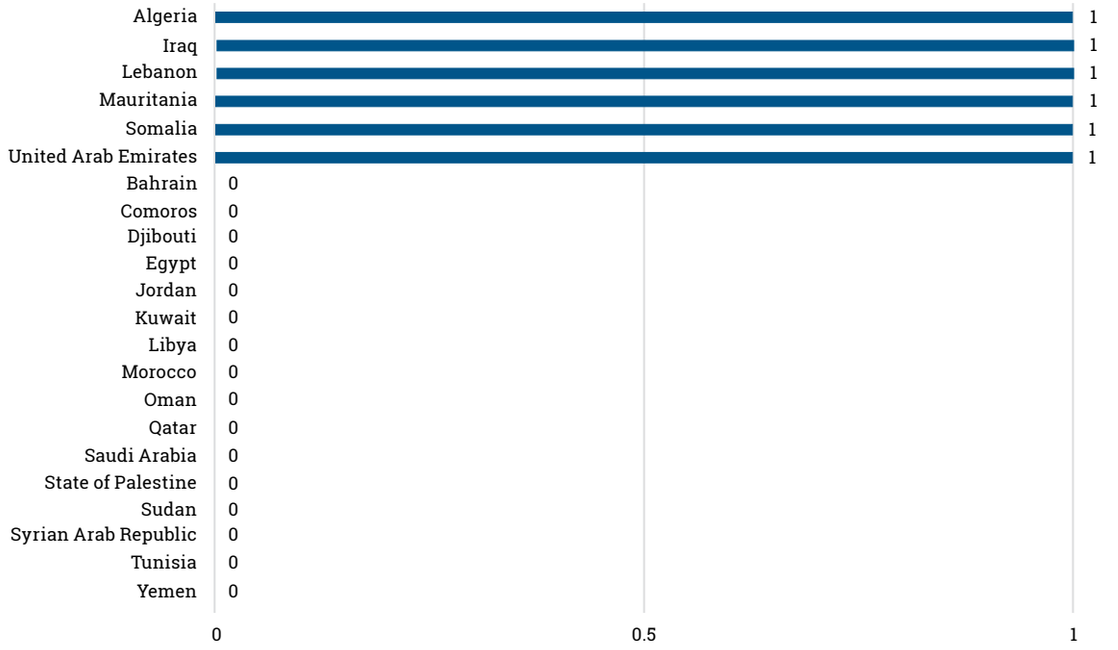
Note: All data are from 2017.

Proportion of voting rights in the World Trade Organization (percentage)



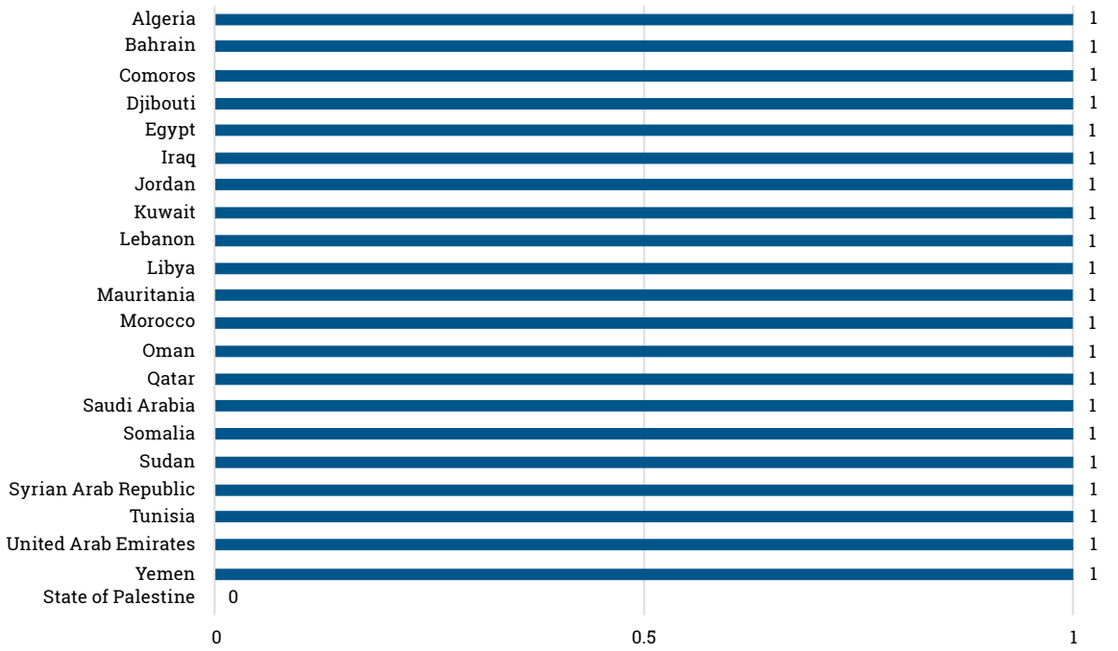
Note: All data are from 2017.

Membership in the United Nations Economic and Social Council (0-1 dummy variable)



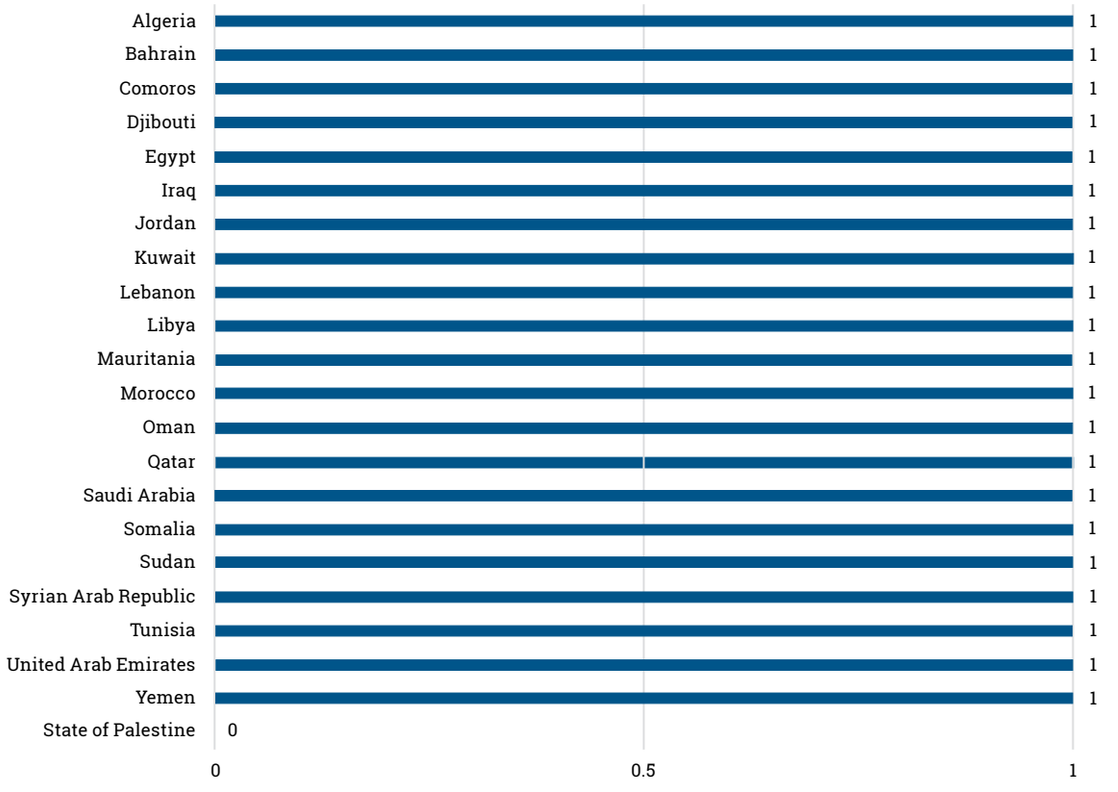
Note: All data are from 2017.

Membership in the International Bank for Reconstruction and Development (0-1 dummy variable)



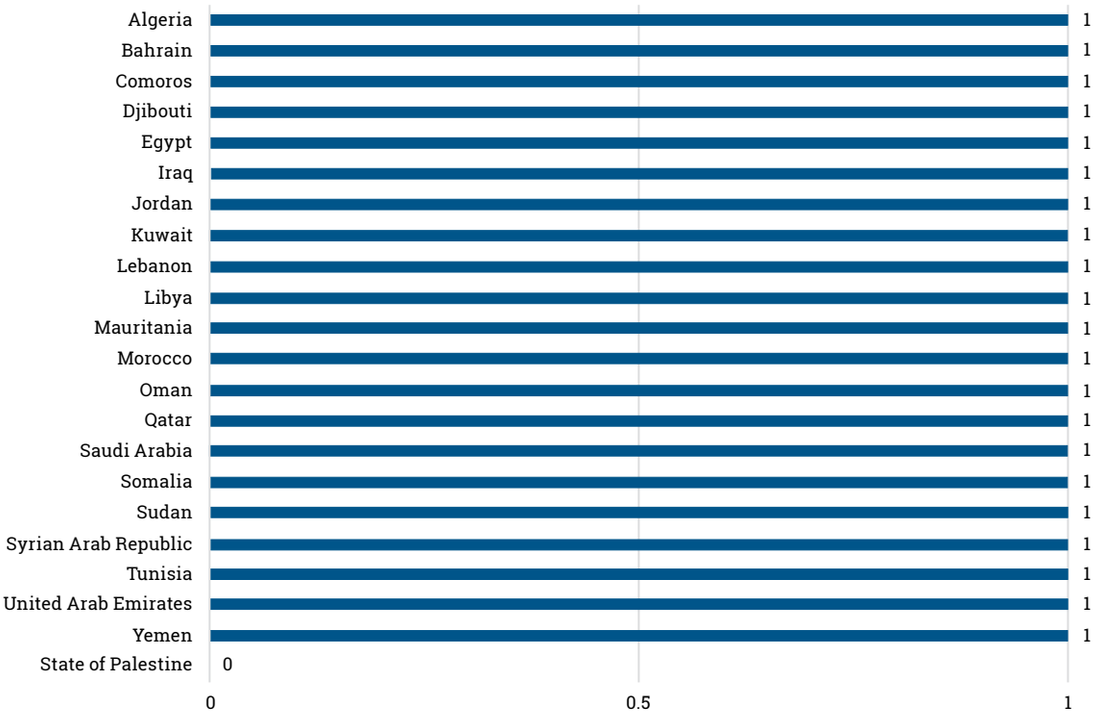
Note: All data are from 2017.

Membership in the International Finance Corporation (0-1 dummy variable)



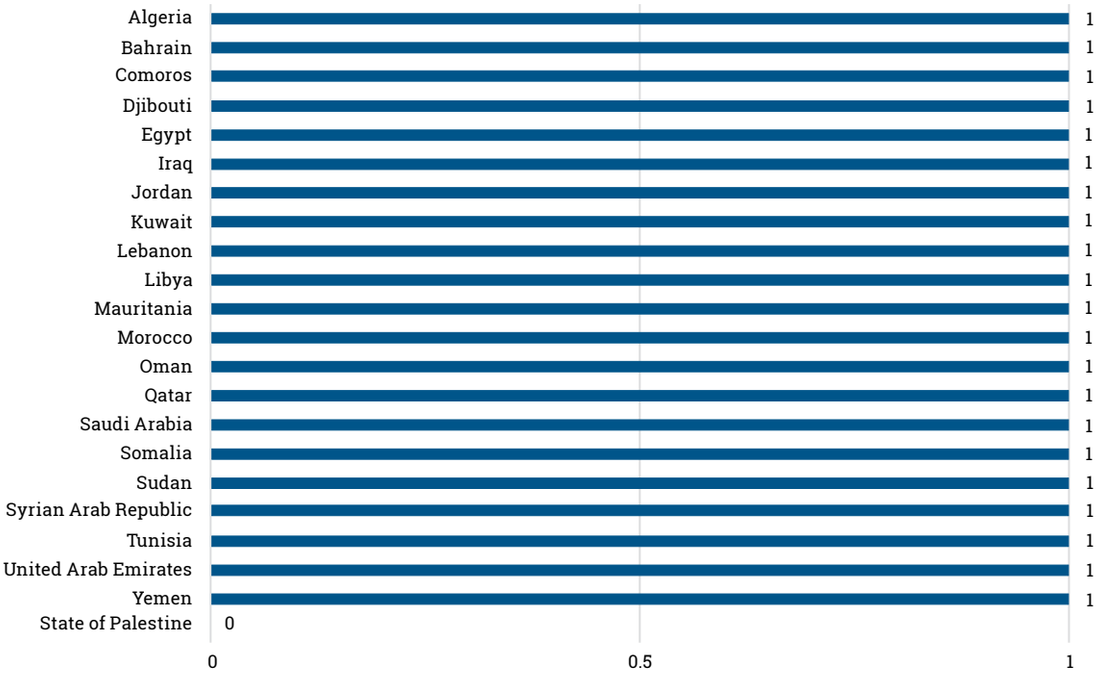
Note: All data are from 2017.

Membership in International Monetary Fund (0-1 dummy variable)



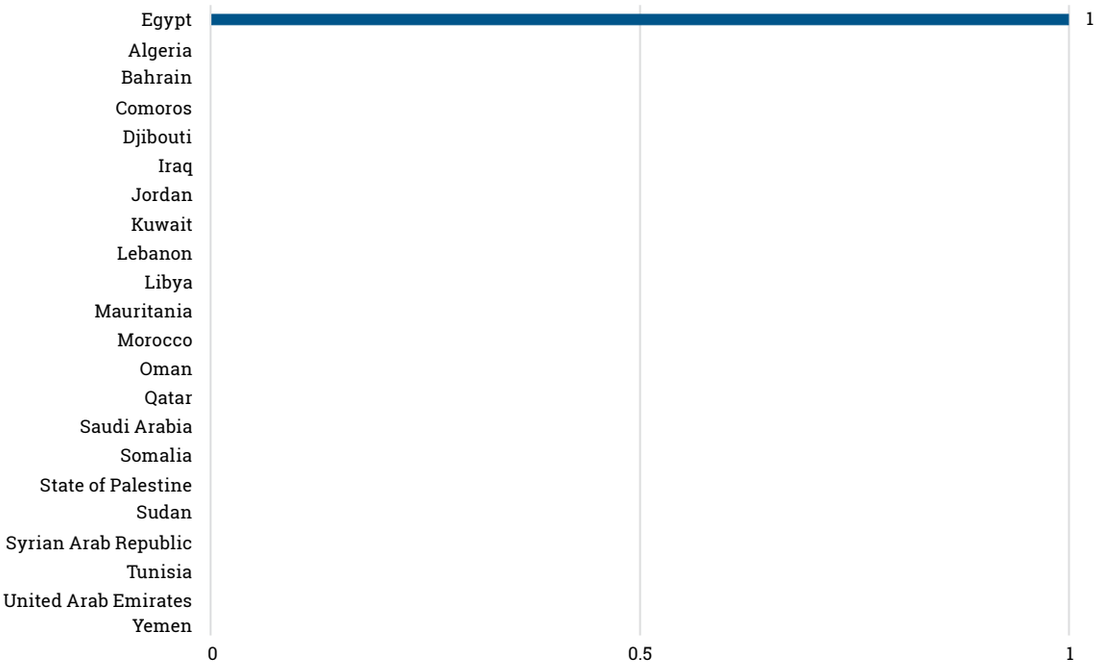
Note: All data are from 2017.

Membership in the United Nations General Assembly (0-1 dummy variable)



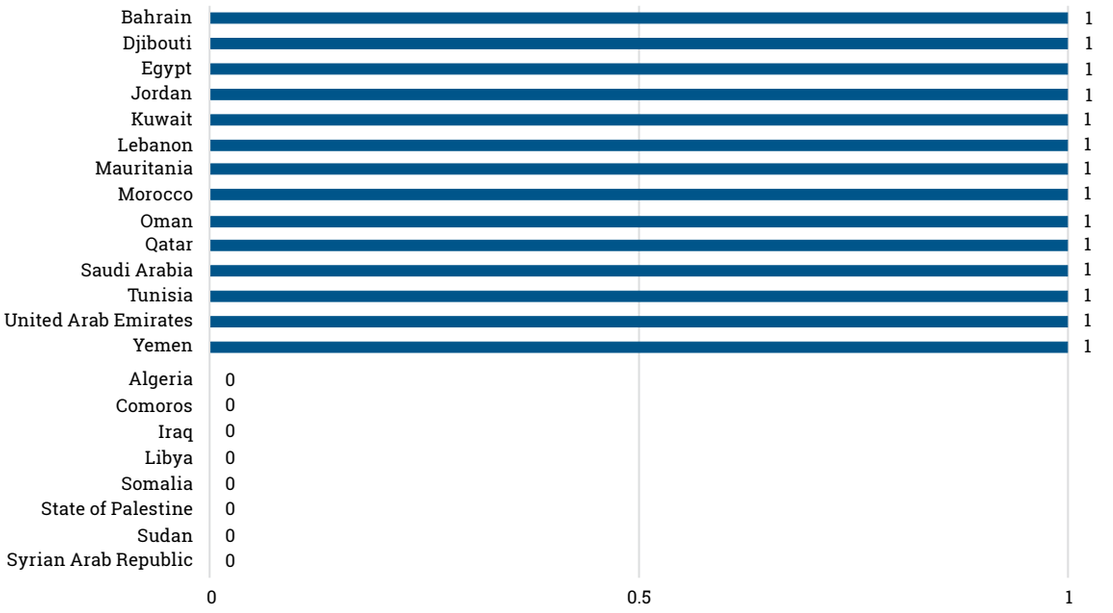
Note: All data are from 2017.

Membership in the United Nations Security Council (0-1 dummy variable)



Note: All data are from 2017.

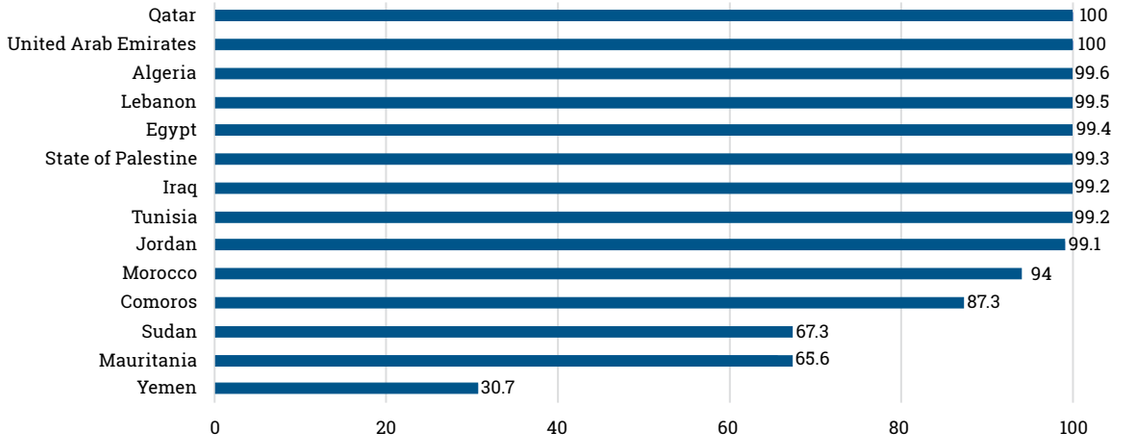
Membership in the World Trade Organization (0-1 dummy variable)



Note: All data are from 2017.

Figure 16.5 Indicator 16.9.1 - Proportion of children under 5 years of age whose births have been registered with a civil authority, by age

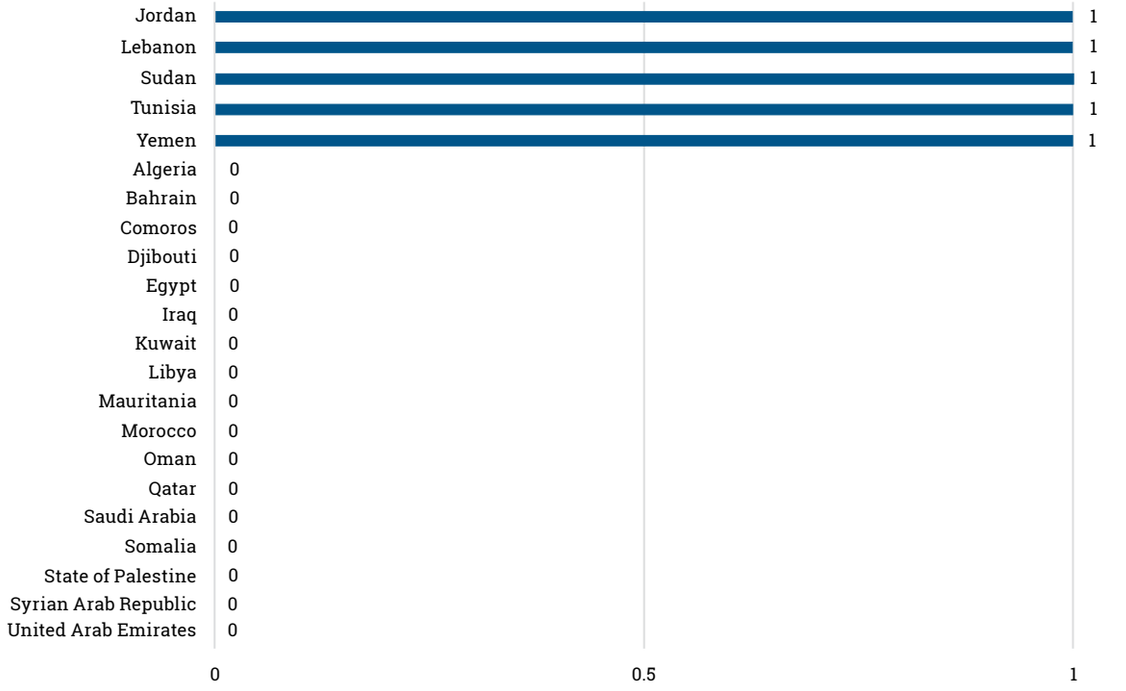
Proportion of children under 5 years of age whose births have been registered with a civil authority (percentage)



Note: Data are from various years as follows: Lebanon (2009), Iraq, Morocco (2011), Comoros, Jordan, United Arab Emirates, Tunisia (2012), Algeria, Yemen (2013), Egypt, State of Palestine, Sudan (2014), Mauritania, Qatar (2015).

Figure 16.6 Indicator 16.10.2 - Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information

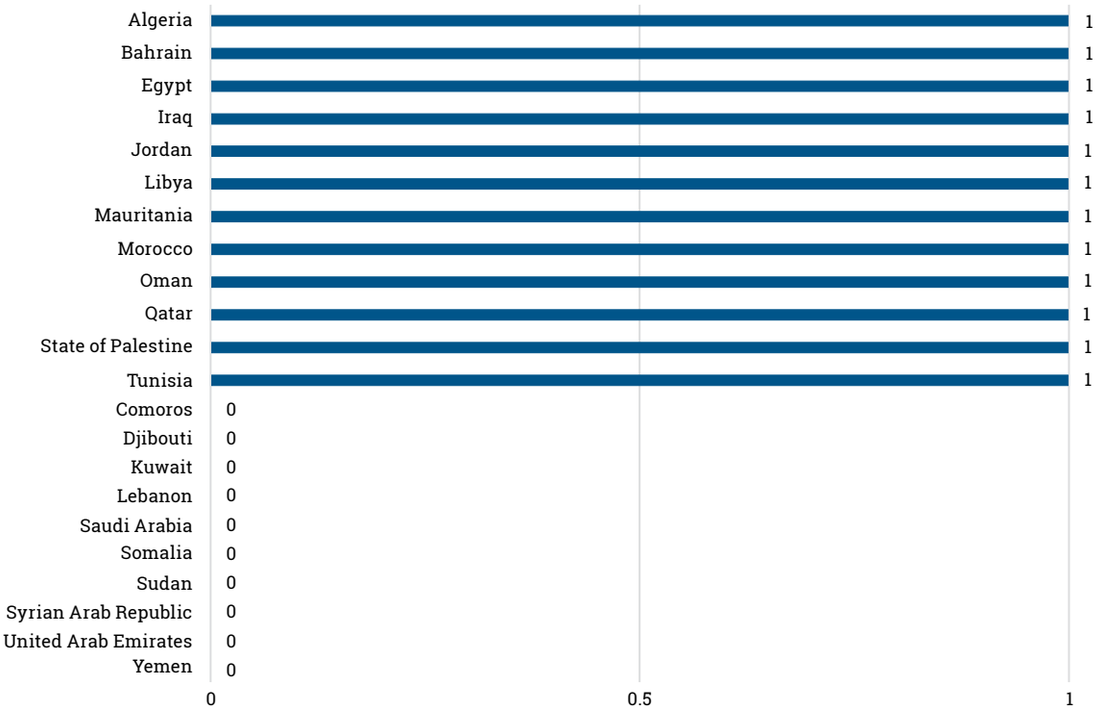
Countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information (0-1 dummy variable)



Note: All data are from 2018.

Figure 16.7 Indicator 16.a.1 - Existence of independent national human rights institutions in compliance with the Paris Principles

Countries with independent national human rights institutions in compliance (fully or partially) with the Paris Principles (0-1 dummy variable)



Note: All data are from 2017.

Annex to chapter 17

1. Data for SDG 17

SDG 17 comprises 19 targets and a total of 25 indicators, eight of which contain multiple subindicators). Fifteen of the indicators are tier I, three are tier II and seven are tier III for which data are not available as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of 15 indicators: 17.2.1 - Net official development assistance, total and to least developed countries, as a proportion of the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee donors' gross national income (GNI); 17.3.2 - Volume of remittances (in United States dollars) as a proportion of total GDP; 17.4.1 - Debt service as a proportion of exports of goods and services; 17.6.2 - Fixed Internet broadband subscriptions per 100 inhabitants, by speed; 17.8.1 - Proportion of individuals using the Internet; 17.9.1 - Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries; 17.10.1 - Worldwide weighted tariff-average; 17.11.1 - Developing countries' and least developed countries' share of global exports; 17.12.1 - Average tariffs faced by developing countries, least developed countries and small island developing States; 17.15.1 - Extent of use of country-owned results frameworks and planning tools by providers of development cooperation; 17.16.1 - Number of countries reporting progress in multi-stakeholder development effectiveness monitoring frameworks that support the achievement of the sustainable development goals; 17.18.2 - Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics; 17.18.3 - Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding; 17.19.1 - Dollar value of all resources made available to strengthen statistical capacity in developing countries; and 17.19.2 - Proportion of countries that (a) have conducted at least one population and housing census in the past 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration.

None of the provided data sets includes sex disaggregated data.

The data used in the analysis of SDG 17 was downloaded on 5 October 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations on 8 July 2019, the data series of 17.18.2 (Countries with national statistical legislation that complies with the Fundamental Principles of Official Statistics (0–1 dummy variable)) and the two data series of 17.18.3 (Countries with national statistical plans that are fully funded, and Countries with national statistical plans that are under implementation (0–1 dummy variable)) are replaced with amended data. Moreover, the data series of 17.16.1 is dropped due to insufficient data availability after the data update.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criteria of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 17.2.1, 17.10.1, 17.11.1, 17.12.1, 17.15.1, and 17.16.1, as well as three of the five series of 17.18.3. When there are many subindicators that mean the same but are expressed differently (as in the case of the two subindicators of 17.6.2 and the three pairs of series under indicator 17.19.2), we choose the subindicator that is more representative and easier to interpret, and has more data availability. Accordingly, we keep one of the two subindicators of 17.6.2, Fixed Internet broadband subscriptions per 100 inhabitants, by speed; and we keep three of the six series of 17.19.2 (i.e. countries with birth registration data that are at least 90 per cent complete, countries that have conducted at least one population and housing census in the past 10 years, and countries with death registration data that are at least 75 per cent complete) expressed as dummy variables and not as proportions since those expressed as proportions only cover a few regions, subregions or country-groups but do not cover any countries or territories.

Each of the two subindicators of 17.6.2 is disaggregated by Internet speed, whereby there exist three disaggregation categories by speed (>256kb <2mb; >2mb <10mb; and >= 10mb) and a fourth category being the aggregate (the total sum) of the other three categories. Therefore, for the preserved subindicator, we eliminate the three speed-disaggregated series and only keep the latter total series.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2018. Table 17.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 17.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
17.3.2 (Volume of remittances (in USD) as a proportion of total GDP)	170 (15)	2016
	2 (1)	2015
	2 (0)	2014
	1 (0)	2013
	1 (0)	2011
17.4.1 (Debt service as a proportion of exports of goods and services)	98 (8)	2016
	14 (2)	2015
	1 (1)	2014
	2 (0)	2013
	1 (1)	2010
17.6.2 (Fixed Internet broadband subscriptions per 100 inhabitants (aggregated))	193 (21)	2016
	14 (0)	2015
	2 (0)	2014
	1 (0)	2013
	1 (0)	2012
	3 (1)	2010
	2 (0)	2009
17.8.1 (Internet users per 100 inhabitants)	205 (22)	2016
	1 (0)	2015
	4 (0)	2012
	5 (0)	2011
	4 (0)	2009
17.9.1 (Total official development assistance (gross disbursement) for technical cooperation (millions of 2016 United States dollars)	144 (16)	2016
	2 (0)	2013
	5 (1)	2010

17.19.1 (Dollar value of all resources made available to strengthen statistical capacity in developing countries (current United States dollars))	109 (17)	2015
	28 (2)	2013
	6 (1)	2012
	3 (0)	2011
	1 (0)	2009
17.19.2 (Countries with birth registration data that are at least 90 per cent complete (0–1 dummy variable))	184 (16)	2016
	5 (1)	2015
17.19.2 (Countries that have conducted at least one population and housing census in the last 10 years (0–1 dummy variable))	25 (0)	2016
	15 (2)	2015
	11 (2)	2014
	9 (1)	2013
	20 (0)	2012
	62 (1)	2011
	41 (4)	2010
	12 (1)	2009
17.19.2 (Countries with death registration data that are at least 75 per cent complete)	179 (15)	2016
	5 (2)	2015

Finally, concerning indicator 17.18.2, and each of the two remaining series of indicator 17.18.3, no substitution was made since the original data provided by the United Nations Statistics Division is only for the year 2018. Therefore, we just consider this 2018 data as that of our base year (2017).

We note that we drop all eight series under 17.2.1 since they represent the net official development assistance to different categories of countries/territories (e.g. LDCs, landlocked countries, etc.) and as a total but merely by donor (OECD donors). Thus, they only cover 29–30 donor countries/territories each, not including any Arab countries/territories, which cannot be analysed using our methodology. The analysis that represents the other side of the coin for this indicator is, however, carried out through our evaluation of 17.9.1 which reflects the distribution of ODA to recipient countries or territories and thus the pattern of the ODA contribution of the donor countries or territories, knowing that donor countries/territories are in the driving seat in development financing. Therefore, the results of analysing indicator 17.9.1 can help with the formulation of policy recommendations as they indicate if there is need for donor countries or territories to alter the amount of ODA for biodiversity that they pledge or to reconsider the countries, territories, or regions that they target. We also note that, while three of the six series of 17.15.1 are dropped due to poor data availability for Arab countries or territories, the other three are dropped for the same reason of only covering the provider or donor countries or territories.

For indicator 17.9.1, the original data set provided by the United Nations Statistics Division only includes recipient countries or territories and omits the donor countries or territories that then take missing values which are considered as zeros when the series' regional and global aggregates are calculated using a total sum. Hence, we consider that 22 instead of 17 Arab countries become covered by data for this indicator, knowing that the GCC countries are donor countries whose missing data values in the original data set are equivalent to zeros (all of them but Oman which is the only GCC country that originally has a value in the data set and whose value is kept). The case is similar for indicator 17.19.1 which, according to the SDG Indicators Metadata Repository of the United Nations Statistics Division, "aims to provide a snapshot of the United States dollar value of ongoing statistical support in developing countries; by only capturing international support to statistics and not domestic resources". Accordingly, the donor countries/territories listed by the OECD (which is also one of the data sources for this indicator) all have missing values, except for Kuwait and the United Arab Emirates that have actual values like the rest of the GCC countries and Kazakhstan. The missing data values of the 31 other donor countries/territories are therefore equivalent to zeros when computing the global, regional and subregional aggregates of this indicator using a total sum. Since Bahrain is one of the GCC countries and has a missing value, we consider its missing value as equivalent to zero and thus that 21 instead of 20 Arab countries are covered by data for this indicator.

Finally, we note that, for the two preserved series of 17.18.3 which are dummy variables and are thus on the same scale, range and unit, the calculated aggregates are simple arithmetic means representing the share of countries with National Statistical Plans that are either fully funded or under implementation in a certain region/subregion. These two series are visualized and analysed separately but in the same bar chart. Similarly, for the three remaining series of 17.19.2 which are also on the same scale, range and unit, the calculated aggregates are simple arithmetic means representing the share of countries with birth and death registration data that are nearly complete or of countries that have conducted at least one population and housing census in the last 10 years in a certain region/subregion. These three series are also visualized and analysed separately but in the same bar chart.

This leaves us with 12 integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 17.1.

Box 17.1 **Summary list of preserved and examined indicators/subindicators**

- Indicator 17.3.2 – Volume of remittances (in United States dollars) as a proportion of total GDP
- Indicator 17.4.1 – Debt service as a proportion of exports of goods and services
- Indicator 17.6.2 – 1 series out of 8 – Fixed Internet broadband subscriptions per 100 inhabitants,
- by speed
- Indicator 17.8.1 – Proportion of individuals using the Internet
- Indicator 17.9.1 – Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries
- Indicator 17.18.2 – Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics
- Indicator 17.18.3 – 2 series out of 5 – Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding
- Indicator 17.19.1 – Dollar value of all resources made available to strengthen statistical capacity in developing countries
- Indicator 17.19.2 – 3 series out of 6 – Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration

However, we lose the ability to determine the region's position on the rest of the targets, indicators, and subindicators as noted in box 17.2, including those in table 17.2, but do not have sufficient data availability.

Box 17.2	Summary list of omitted targets

- 17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection
- 17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries
- 17.5 Adopt and implement investment promotion regimes for least developed countries
- 17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed
- 17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda
- 17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020
- 17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access
- 17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence
- 17.14 Enhance policy coherence for sustainable development
- 17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development
- 17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries
- 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

Annex 17.2 for a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional, and subregional aggregates of 17.9.1 and 17.19.1 are calculated using a total sum, whereas the aggregates of 17.18.2, the two preserved series of 17.18.3 and the three preserved series of 17.19.2 are calculated using a simple arithmetic mean. The aggregates of all the other series and indicators are calculated using a weighted average. The method of aggregation, in general, as well as the weighting variables to be used for the weighted averages and the weighting variables' properties are all chosen based on what is advised by the corresponding SDG Indicators Metadata Repository of the United Nations Statistics Division or by the original source of the corresponding data that is referred to by this metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the

most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables). The year of the weighting variable data is the most commonly used year for the data of the respective series/indicator. The following weights were actually used for the series/indicator whose global, regional, and subregional aggregates are weighted averages: Total Population in 2015 (from the World Population Prospects), Total GDP (current United States dollars) for the year 2016 (from the World Development Indicators Database), and Total exports of goods and services (current United States dollars) for the year 2016 (from the World Development Indicators Database). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We note that, when a series or indicator (namely 17.6.2 and 17.8.1) needs a population-related weighting variable in 2016 or 2017, we use the latest available data for this variable, i.e. data for 2015, from the World Population Prospects. Finally, we note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. As such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. This applies for 17.4.1, where 10 out of 12 Arab countries are covered after weighting. While this affects the global, regional and/or subregional aggregates, the country-year graph includes all the Arab countries that have data for the evaluated series/indicator, regardless of the data availability of the weighting variable.

We calculate the world, regional and subregional aggregates for each indicator. We are not able to include the target value to facilitate comparability for any of the analysed indicators/subindicators, except 17.8.1, since the official desired target values cannot be inferred from the official target descriptions. For 17.8.1, though, whose target aims to "fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology", we consider the target value as 100 per cent of individuals using the Internet. Therefore, only the target value for 17.8.1 is shown in the corresponding graph.

Table 17.2 Targets, indicators, tiers and data availability for Arab countries – SDG 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development)

Target	Indicator	Number of subindicators	Tier	Data availability*
FINANCE				
17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	17.1.1 Total government revenue as a proportion of GDP, by source	(No data)	Tier I	x
	17.1.2 Proportion of domestic budget funded by domestic taxes	(No data)	Tier I	x
17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries	17.2.1 Net official development assistance, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors' gross national income (GNI)	(Dropped) 8	Tier I	x

17.3 Mobilize additional financial resources for developing countries from multiple sources	17.3.1 Foreign direct investment (FDI), official development assistance and South-South cooperation as a proportion of total domestic budget	(No data)	Tier I	x
	17.3.2 Volume of remittances (in United States dollars) as a proportion of total GDP	1 chosen out of 1	Tier I	16
17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress	17.4.1 Debt service as a proportion of exports of goods and services	1 chosen out of 1	Tier I	12
17.5 Adopt and implement investment promotion regimes for least developed countries	17.5.1 Number of countries that adopt and implement investment promotion regimes for least developed countries	(No data)	Tier III	x
TECHNOLOGY				
17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	17.6.1 Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation	(No data)	Tier III	x
	17.6.2 Fixed Internet broadband subscriptions per 100 inhabitants, by speed	1 chosen out of 8	Tier I	22
17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	17.7.1 Total amount of approved funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies	(No data)	Tier III	x
17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	17.8.1 Proportion of individuals using the Internet	1 chosen out of 1	Tier I	22

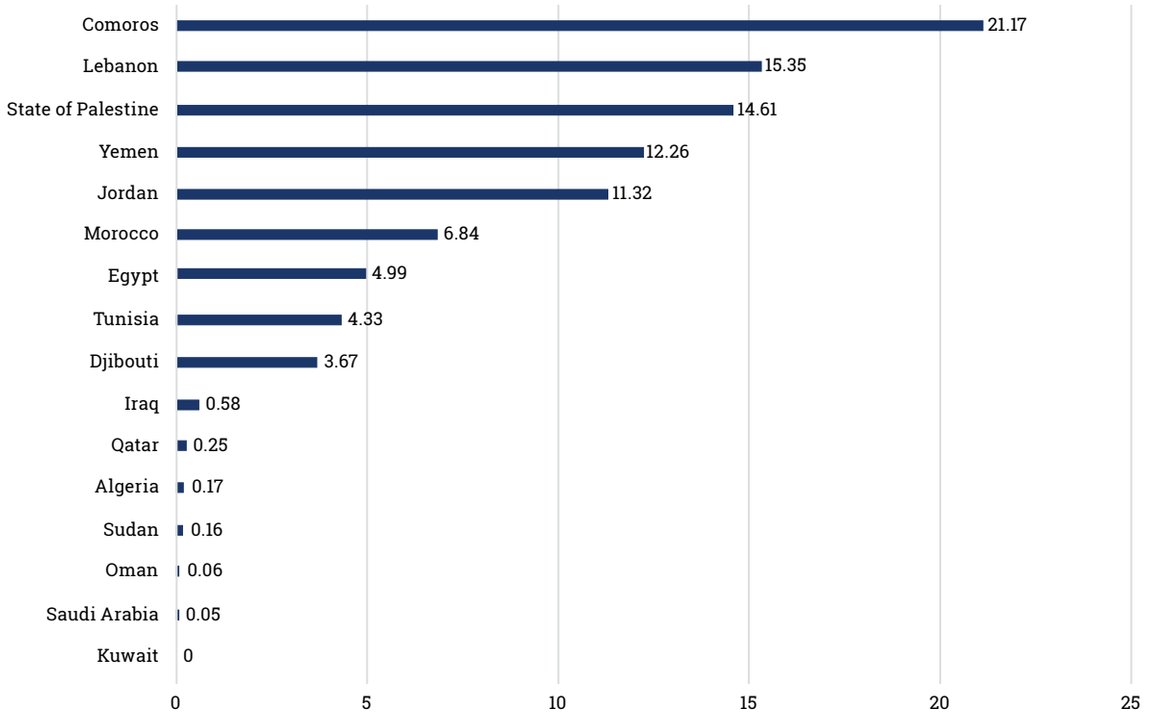
CAPACITY-BUILDING				
17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation	17.9.1 Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries	1 chosen out of 1	Tier I	22
TRADE				
17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda	17.10.1 Worldwide weighted tariff-average	(Dropped) 14	Tier I	x
17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020	17.11.1 Developing countries' and least developed countries' share of global exports	(Dropped) 4	Tier I	x
17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access	17.12.1 Average tariffs faced by developing countries, least developed countries and small island developing States	(Dropped) 6	Tier I	x
SYSTEMIC ISSUES				
Policy and institutional coherence				
17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence	17.13.1 Macroeconomic Dashboard	(No data)	Tier III	x
17.14 Enhance policy coherence for sustainable development	17.14.1 Number of countries with mechanisms in place to enhance policy coherence of sustainable development	(No data)	Tier III	x
17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	17.15.1 Extent of use of country-owned results frameworks and planning tools by providers of development cooperation	(Dropped) 8	Tier II	x

Multi-stakeholder partnerships				
17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	17.16.1 Number of countries reporting progress in multi-stakeholder development effectiveness monitoring frameworks that support the achievement of the sustainable development goals	(Dropped) 1	Tier II	x
17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	17.17.1 Amount of United States dollars committed to public-private and civil society partnerships	(No data)	Tier III	x
Data, monitoring and accountability				
17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	17.18.1 Proportion of sustainable development indicators produced at the national level with full disaggregation when relevant to the target, in accordance with the Fundamental Principles of Official Statistics	(No data)	Tier III	x
	17.18.2 Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics	1 chosen out of 1	Tier II	13
	17.18.3 Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding	2 chosen out of 5	Tier I	13, 15
17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries	17.19.1 Dollar value of all resources made available to strengthen statistical capacity in developing countries	1 chosen out of 1	Tier I	21
	17.19.2 Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration	3 chosen out of 6	Tier I	17, 17, 14

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
We note that the weighting variables sometimes prevent us from evaluating the series/indicator using the full data that are available or provided to us. As such, our final data coverage for the series/indicators is sometimes slightly undermined by the data availability of the weighting variable. While this affects the global, regional and/or subregional aggregates, the country-year graphs include all the Arab countries for the evaluated series/indicator that have data, regardless of the data availability of the weighting variable.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

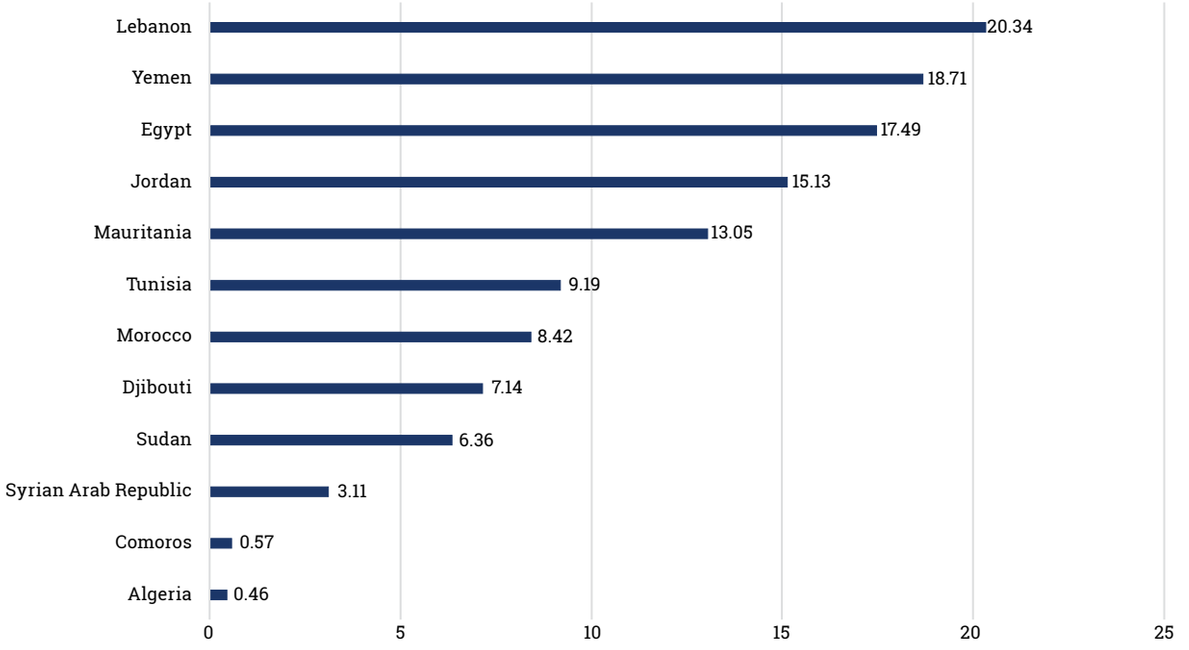
2. Country graphs

Figure 17.1 Indicator 17.3.2 - Volume of remittances (in United States dollars) as a proportion of total GDP
Volume of remittances (in United States dollars) as a proportion of total GDP (percentage)



Note: All data are from 2016 apart from Djibouti (2015).

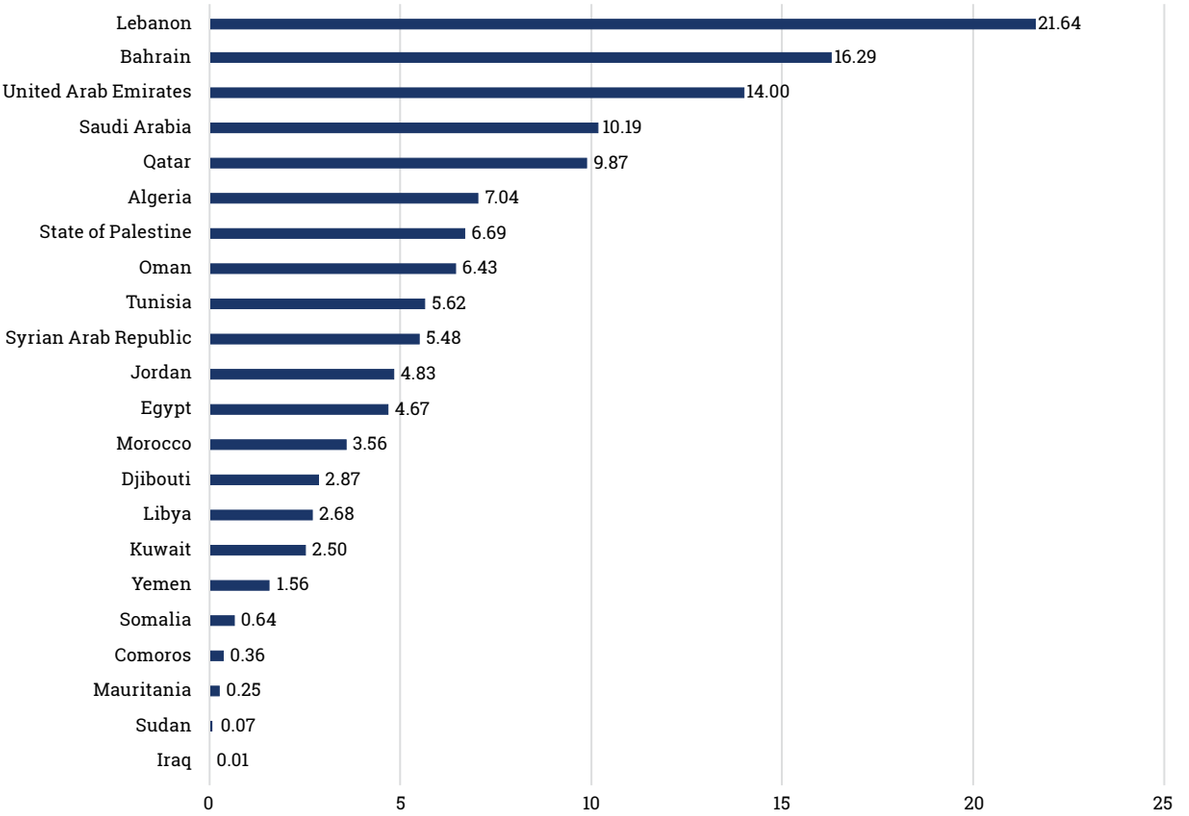
Figure 17.2 Indicator 17.4.1 - Debt service as a proportion of exports of goods and services
Debt service as a proportion of exports of goods and services (percentage)



Note: All data are from 2016 apart from the Syrian Arab Republic (2010), Comoros (2014), Djibouti, Yemen (2015).

Figure 17.3 Indicator 17.6.2 - Fixed Internet broadband subscriptions per 100 inhabitants, by speed

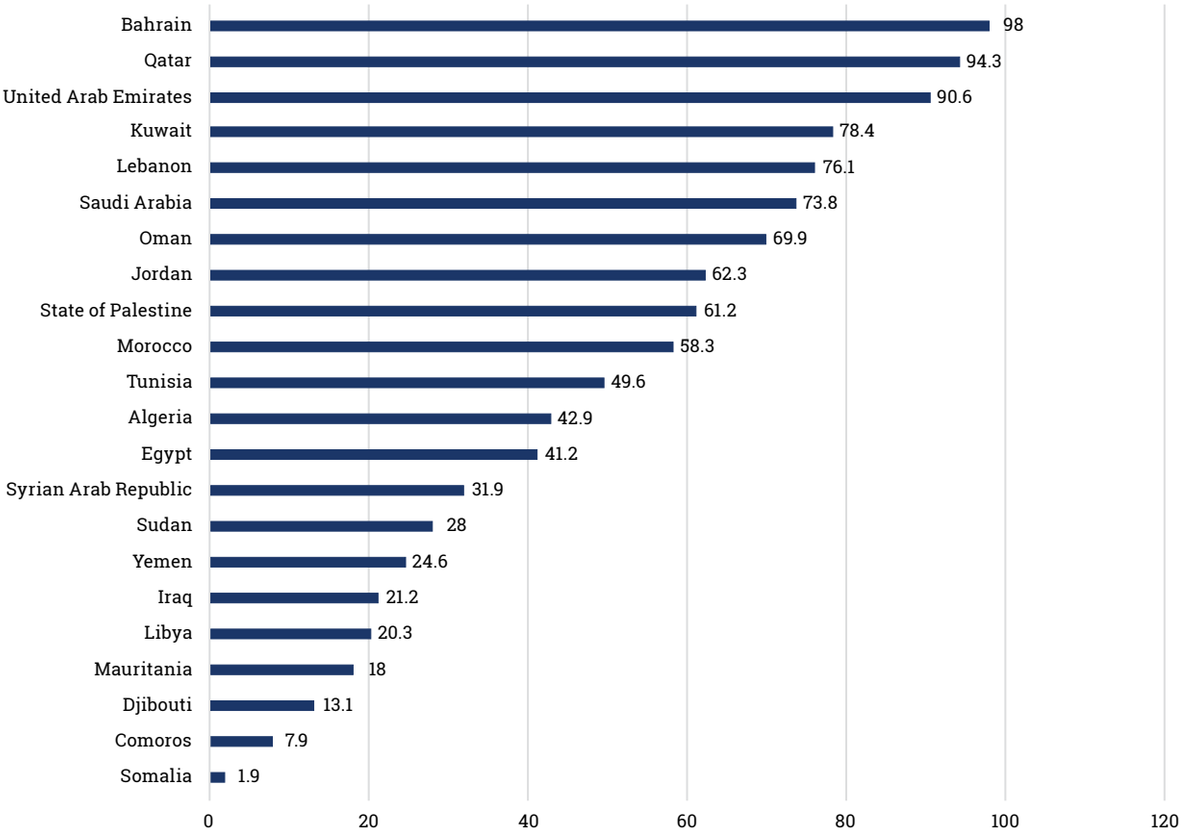
Fixed Internet broadband subscriptions per 100 inhabitants (percentage)



Note: All data are from 2016 apart from Iraq (2010).

Figure 17.4 Indicator 17.8.1 - Proportion of individuals using the Internet

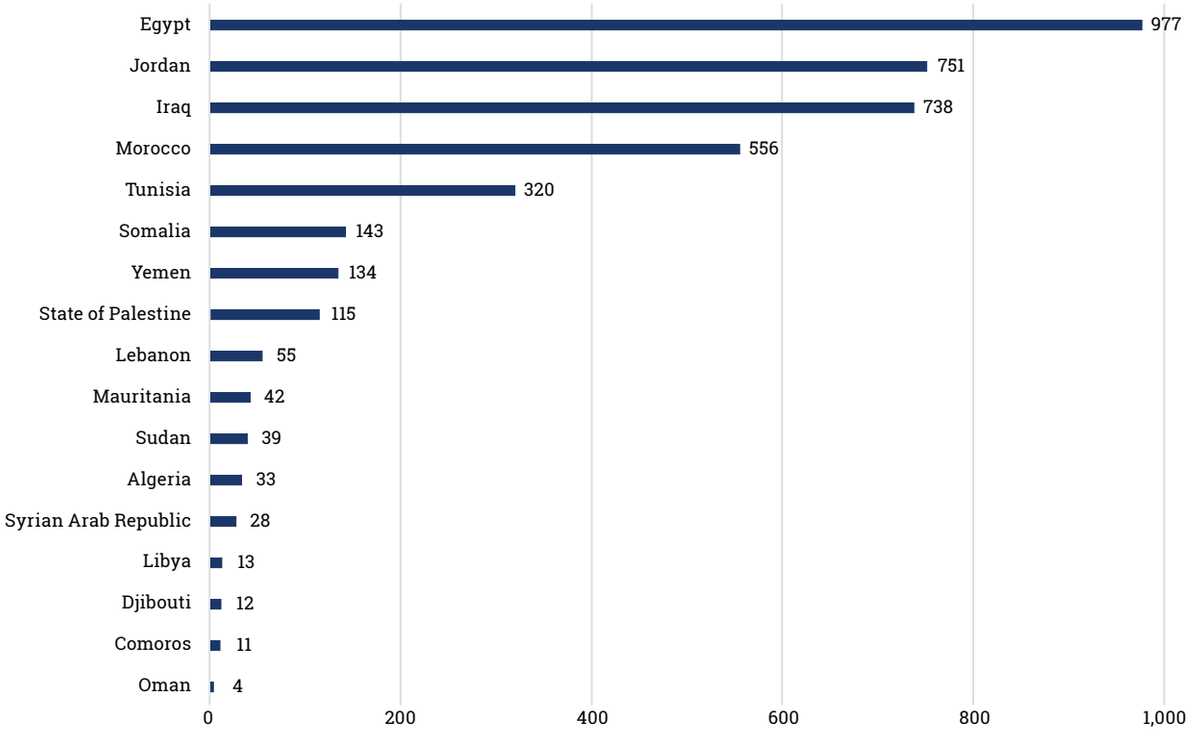
Internet users per 100 inhabitants (percentage)



Note: All data are from 2016.

Figure 17.5 Indicator 17.9.1 - Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries

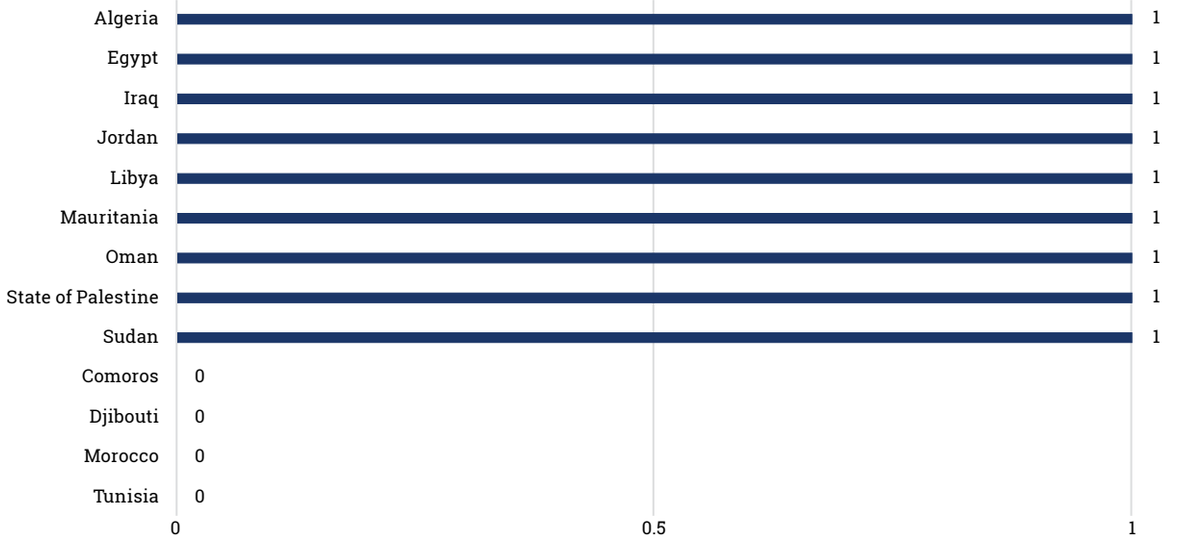
Total Official Development Assistance (gross disbursement) for technical cooperation (millions of constant 2016 United States dollars)



Note: All data are from 2016 apart from Oman (2010).

Figure 17.6 Indicator 17.18.2 - Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics

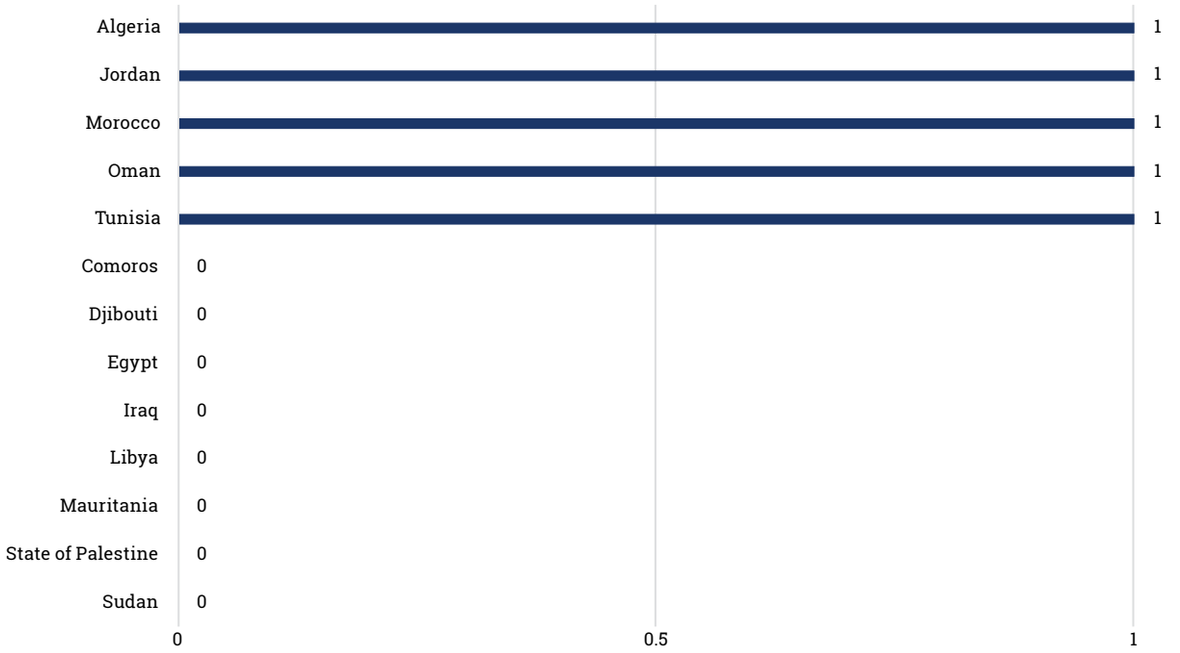
Countries with national statistical legislation that complies with the Fundamental Principles of Official Statistics (0–1 dummy variable)



Note: All data are from 2018.

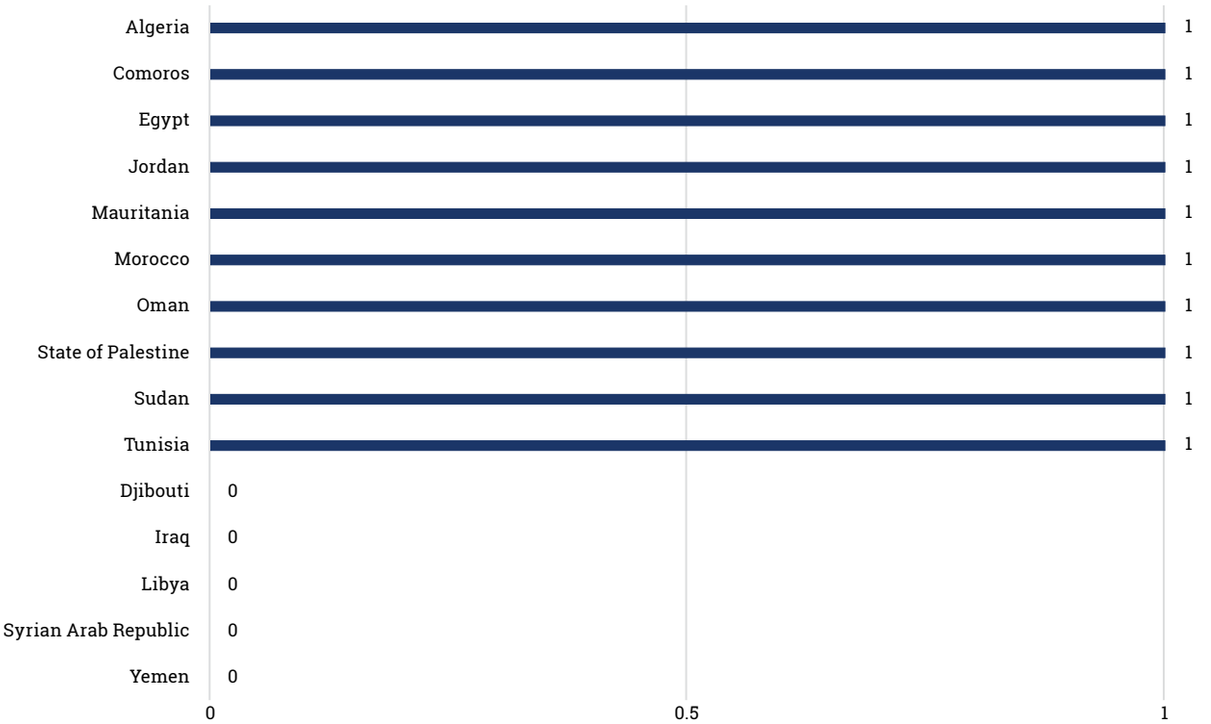
Figure 17.7 Two series of indicator 17.18.3 - Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding

Countries with national statistical plans that are fully funded (0–1 dummy variable)



Note: All data are from 2018.

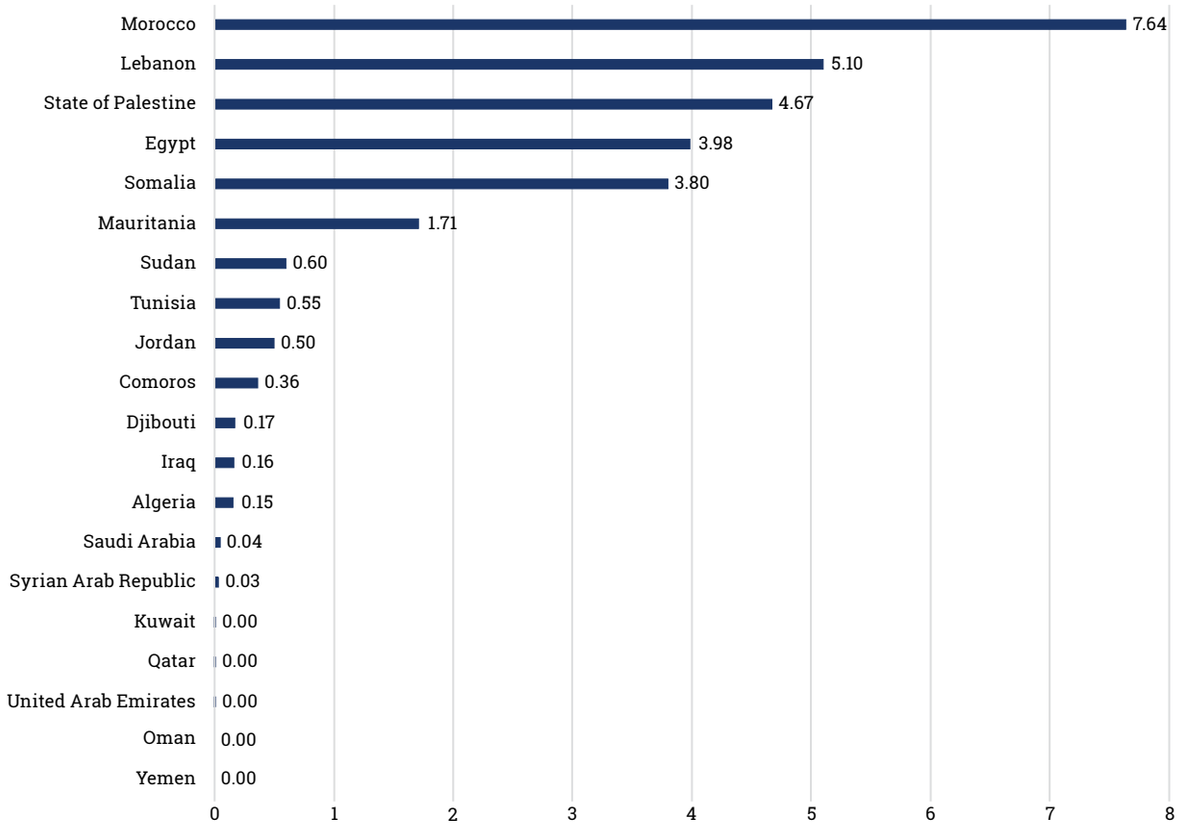
Countries with national statistical plans that are under implementation (0–1 dummy variable)



Note: All data are from 2018.

Figure 17.8 Indicator 17.19.1 - Dollar value of all resources made available to strengthen statistical capacity in developing countries

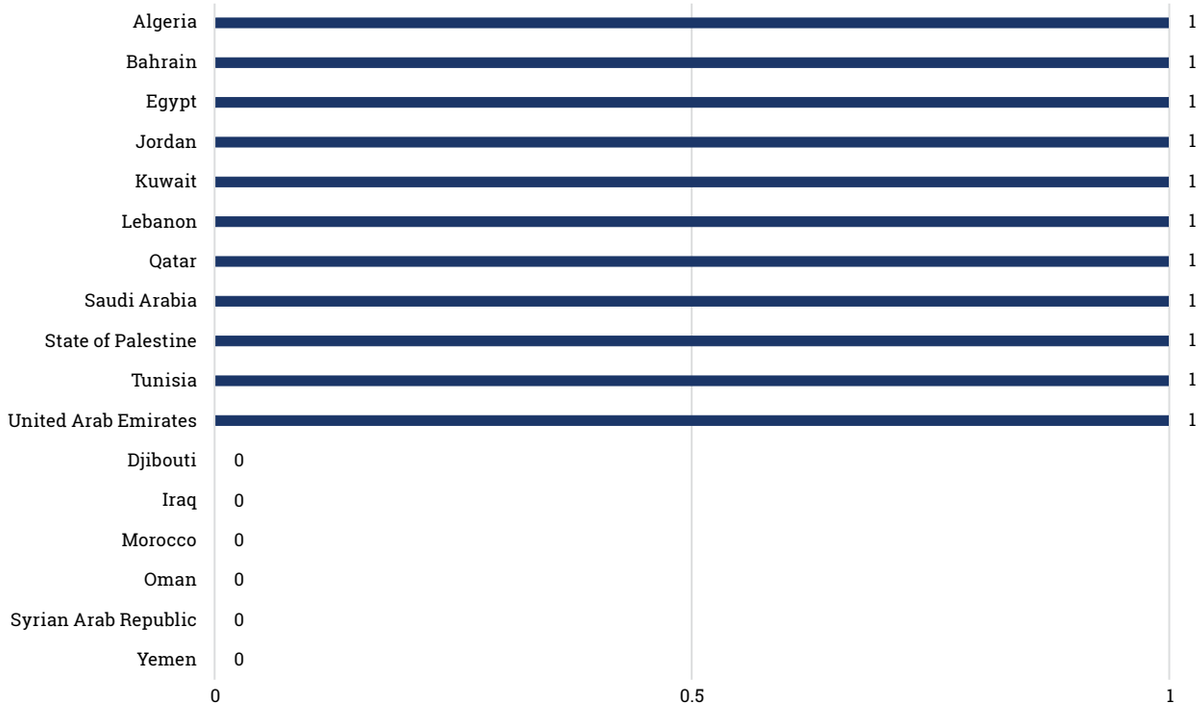
Dollar value of all resources made available to strengthen statistical capacity in developing countries (millions of current United States dollars)



Note: All data are from 2015 apart from Syrian Arab Republic (2012), Comoros and Saudi Arabia (2013).

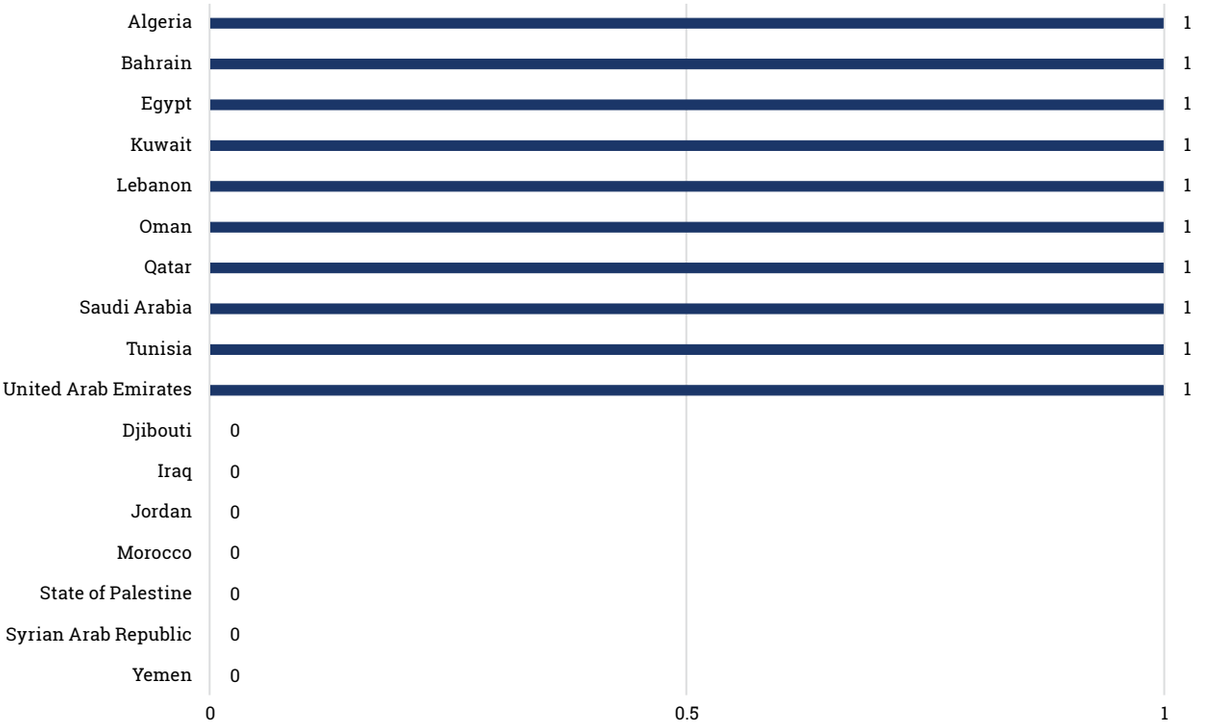
Figure 17.9 Three series of indicator 17.19.2 - Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration

Countries with birth registration data that are at least 90 per cent complete (0–1 dummy variable)



Note: All data are from 2016 apart from Syrian Arab Republic (2015).

Countries with death registration data that are at least 75 per cent complete (0–1 dummy variable)



Note: All data are from 2016 apart from Djibouti and the Syrian Arab Republic (2015).

Countries that have conducted at least one population and housing census in the last 10 years (0–1 dummy variable)

Note: Data are from various years as follows: Djibouti (2009), Bahrain, Oman, Saudi Arabia, United Arab Emirates (2010), Kuwait (2011), Mauritania (2013), Morocco, Tunisia (2014), Jordan, Qatar (2015), Comoros, Egypt, State of Palestine (2017).