

## Annex to chapter 11

### 1. Data for SDG 11

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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	<b>Number of people affected by disaster</b>	
Series 2	Number of injured or ill people attributed to disasters	
Series 3	Number of people whose livelihoods were disrupted or destroyed, attributed to disasters	Included in the first series
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	<b>Number of missing persons due to disaster</b>	
Series 8	<b>Number of deaths due to disaster</b>	
Series 9	Number of deaths and missing persons attributed to disasters, <b>by hazard type</b>	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	<b>Number of damaged dwellings attributed to disasters</b>	
Series 13	Number of damaged dwellings attributed to disasters, <b>by hazard type</b>	With disaggregation by hazard type
Series 14	<b>Number of destroyed dwellings attributed to disasters</b>	
Series 15	Number of destroyed dwellings attributed to disasters, <b>by hazard type</b>	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 lose 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 11.5.1 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
	13 (0)	2016
	6 (0)	2015
	13 (1)	2014
11.5.1 (Number of people affected by disaster (number))	7 (1)	2013
	5 (1)	2012
	3 (1)	2011

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

	9 (0)	2016
	8 (0)	2015
	14 (1)	2014
11.5.2 (Direct economic loss attributed to disasters (millions of current United States dollars))	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.

<b>Box 11.1</b>	<b>Summary list of preserved and examined indicators/subindicators</b>
	<ul style="list-style-type: none"> <li>Indicator 11.1.1 – Proportion of urban population living in slums, informal settlements or inadequate housing</li> <li>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</li> <li>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</li> <li>Indicator 11.6.2 – Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)</li> </ul>

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.

<b>Box 11.2</b>	<b>Summary list of omitted targets</b>
	<ul style="list-style-type: none"> <li>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</li> </ul>

- 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.

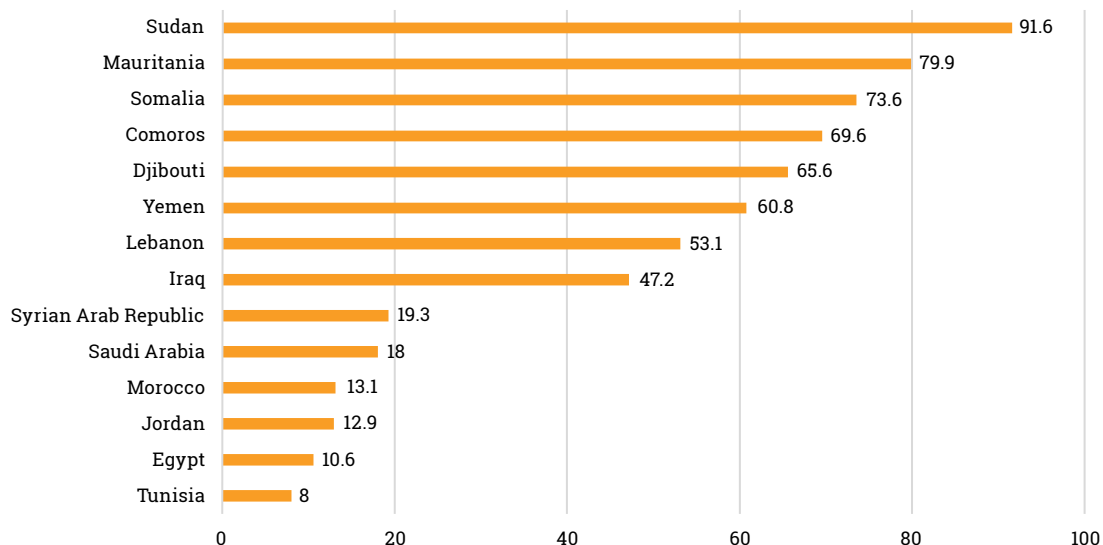
Source: <https://unstats.un.org/sdgs/indicators/indicators-list/> and author's calculations.



## 2. Country graphs

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

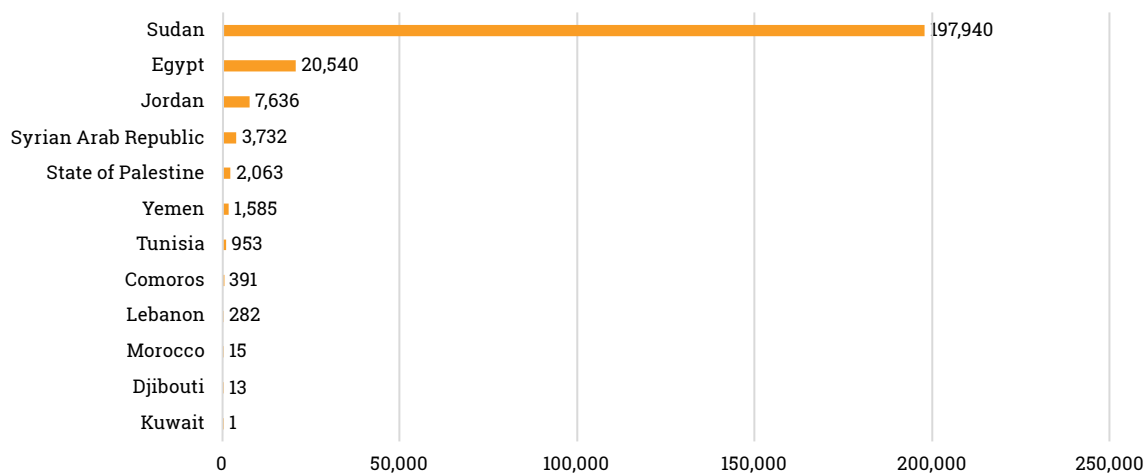
Proportion of urban population living in slums, informal settlements or inadequate housing



Note: All data are from 2014.

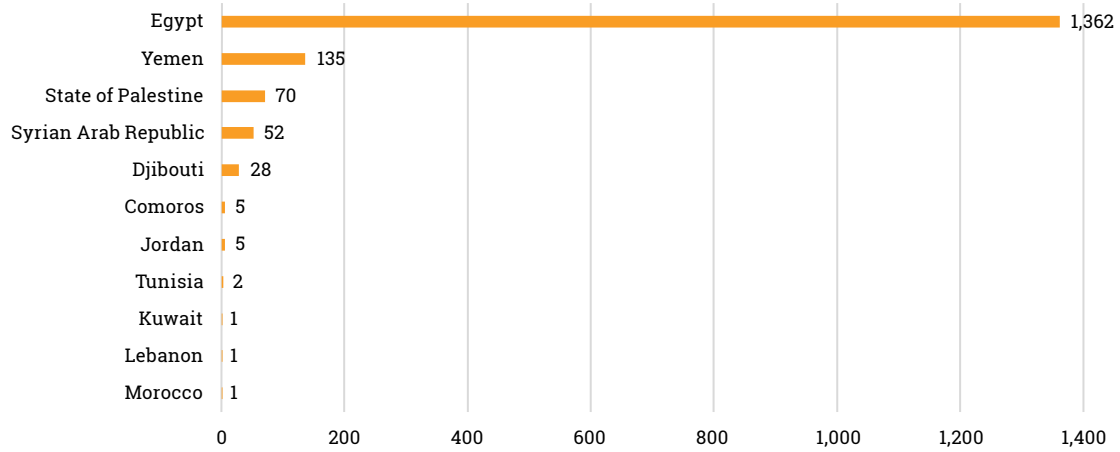
**Figure 11.2 Five series of indicator 11.5.1 - Number of deaths, missing persons and persons affected by disaster per 100,000 people**

Number of people affected by disaster (number)



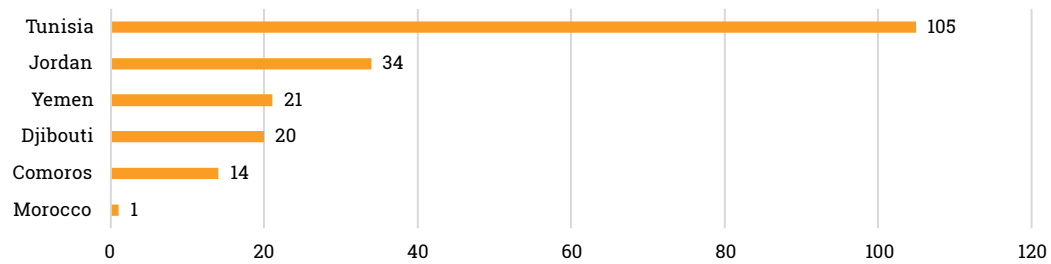
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013) and Morocco (2014).

### Number of deaths due to disaster (number)



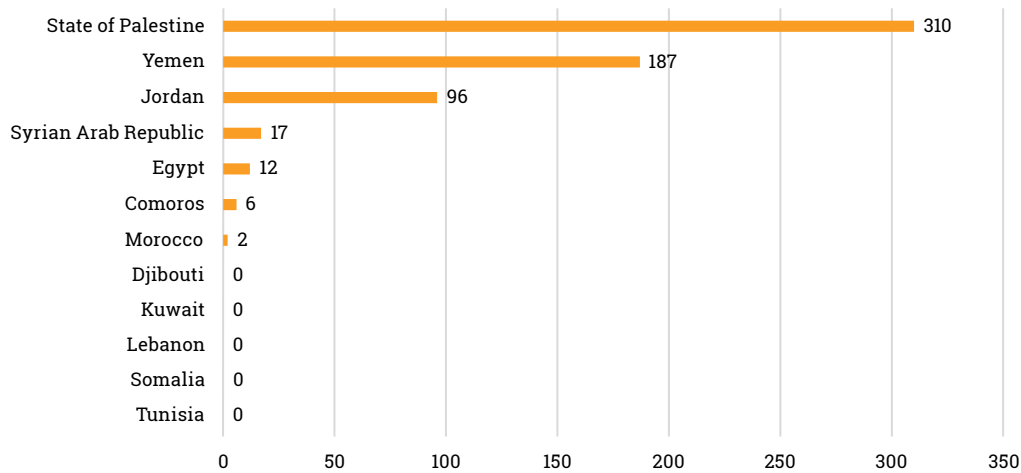
Note: Data are from 2017 apart from Syrian Arab Republic (2009), Yemen (2010), Kuwait (2011), Djibouti (2012), Tunisia (2013), Morocco (2014) and Lebanon (2016).

### Number of missing persons due to disaster (number)



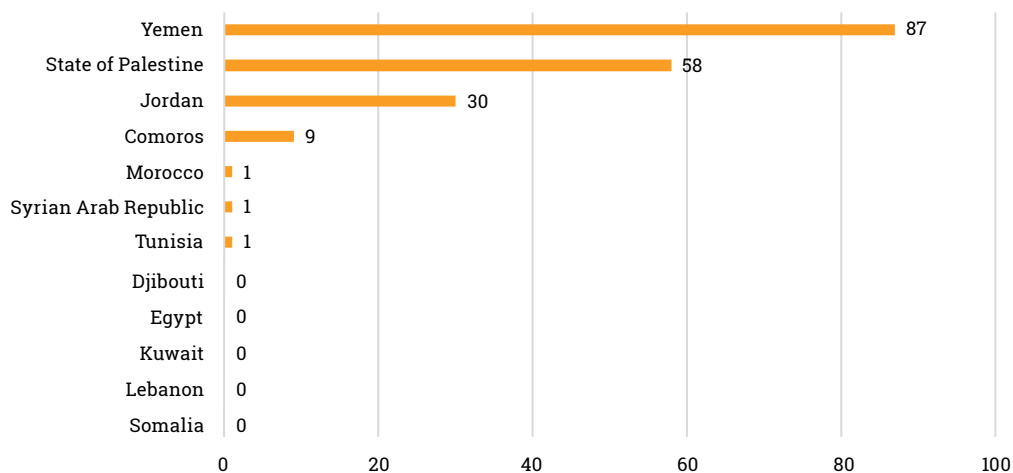
Note: Data are from various years as follows: Tunisia (2009); Jordan and Yemen (2010); Djibouti and Morocco (2011); Comoros (2017).

### 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).

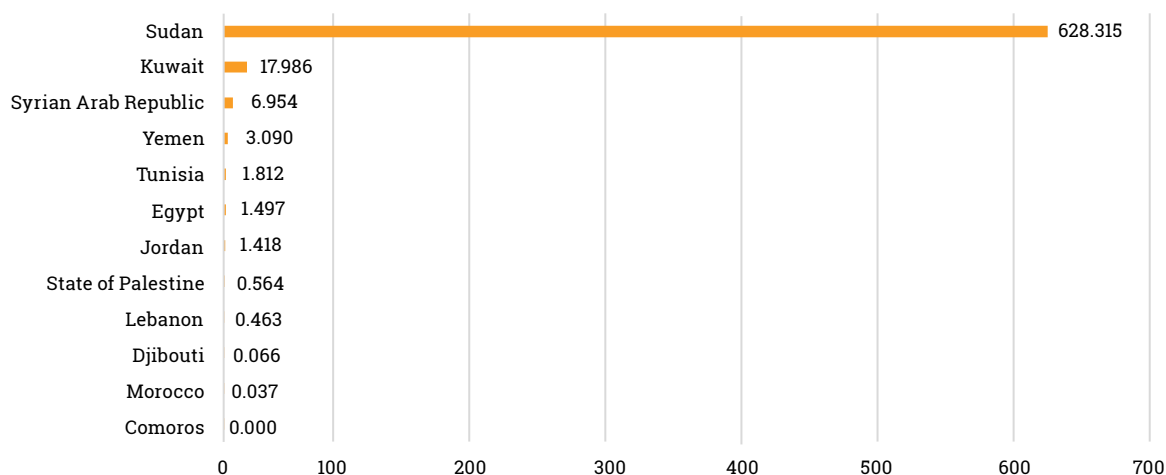
Number destroyed dwellings attributed to disasters (number)



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)**

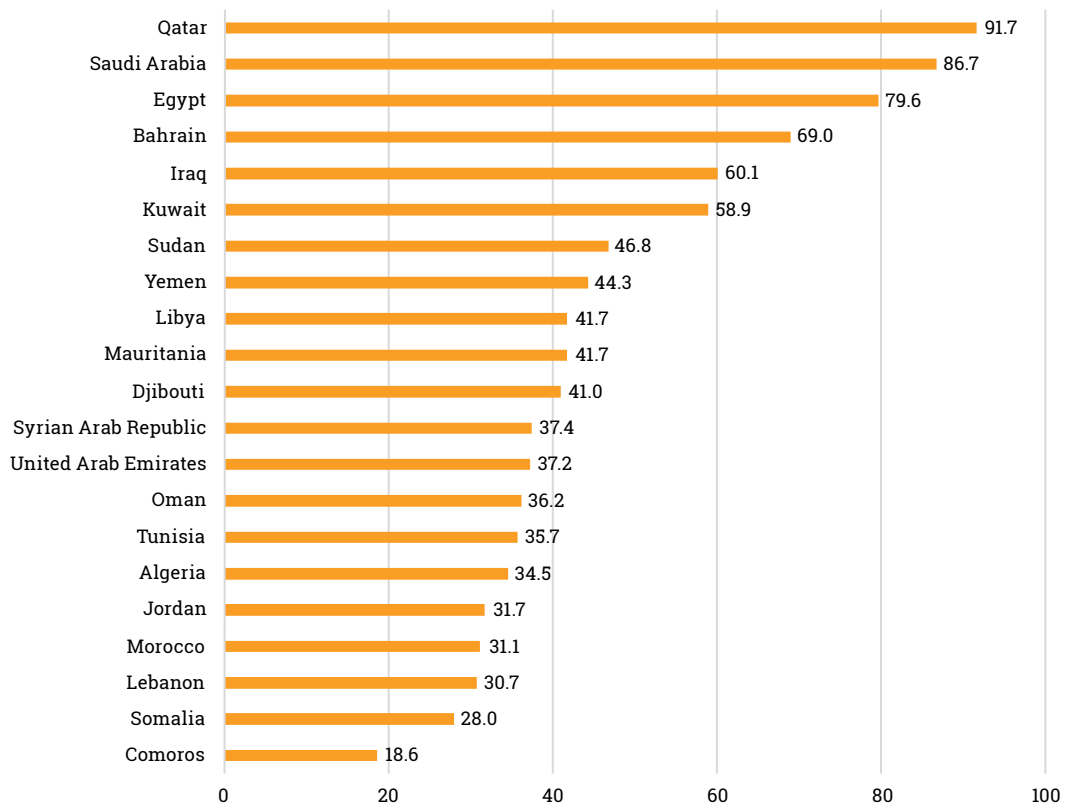
Direct economic loss attributed to disasters (millions of current United States dollars)



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.