# 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)**

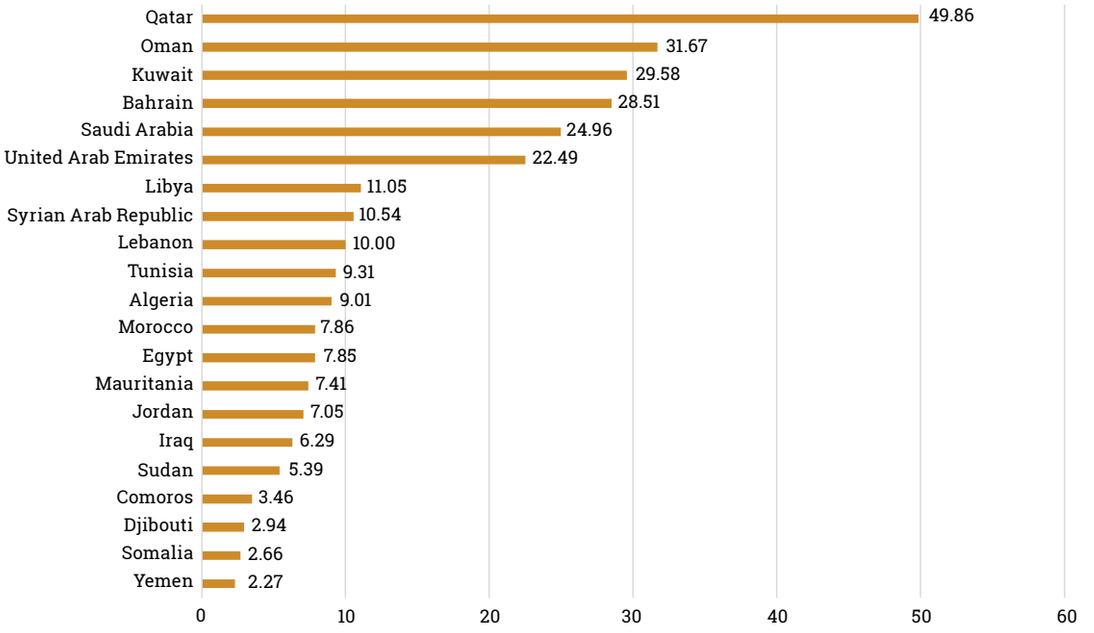
| Target | Indicator | Number of subindicators | Tier | Data availability* |
|---|---|---|---|---|
| 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development 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

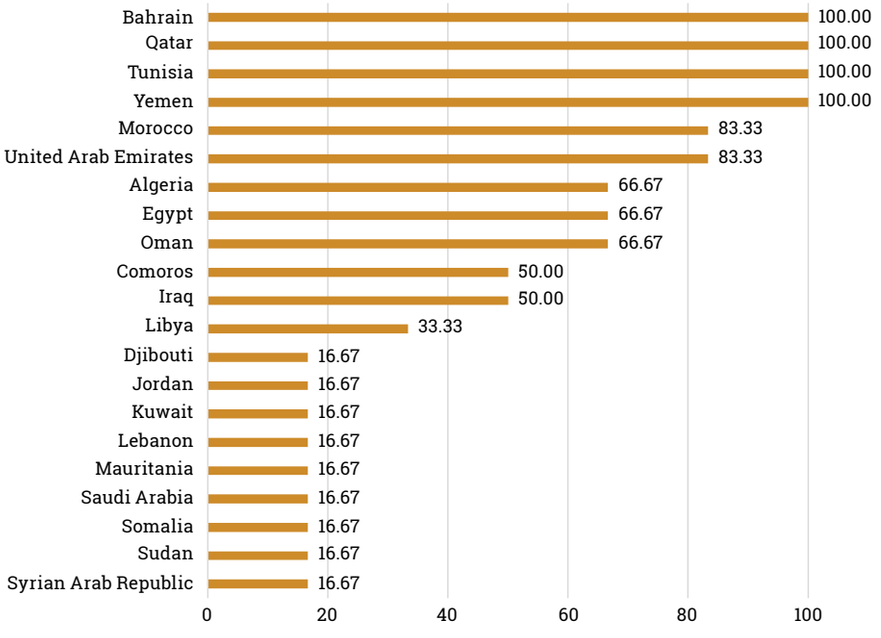
**Figure 12.1 Indicator 12.2.2 - Domestic material consumption per capita, by type of raw material**
Domestic material consumption per capita (metric tons)



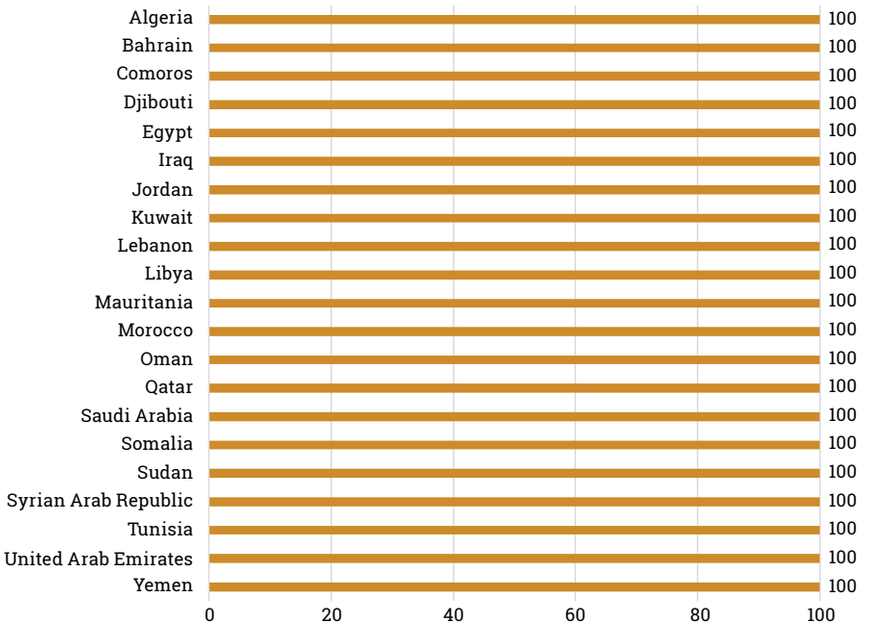

Note: All data are from 2017.

**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)

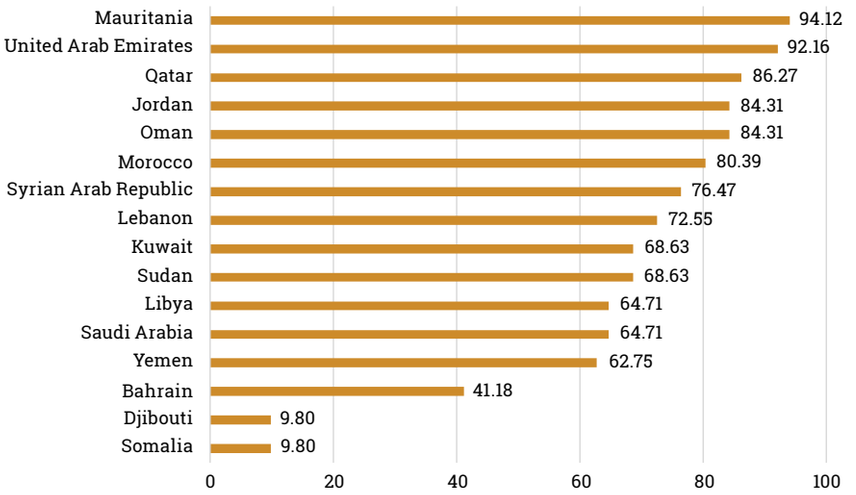
Compliance with the Basel Convention on hazardous waste and other chemicals



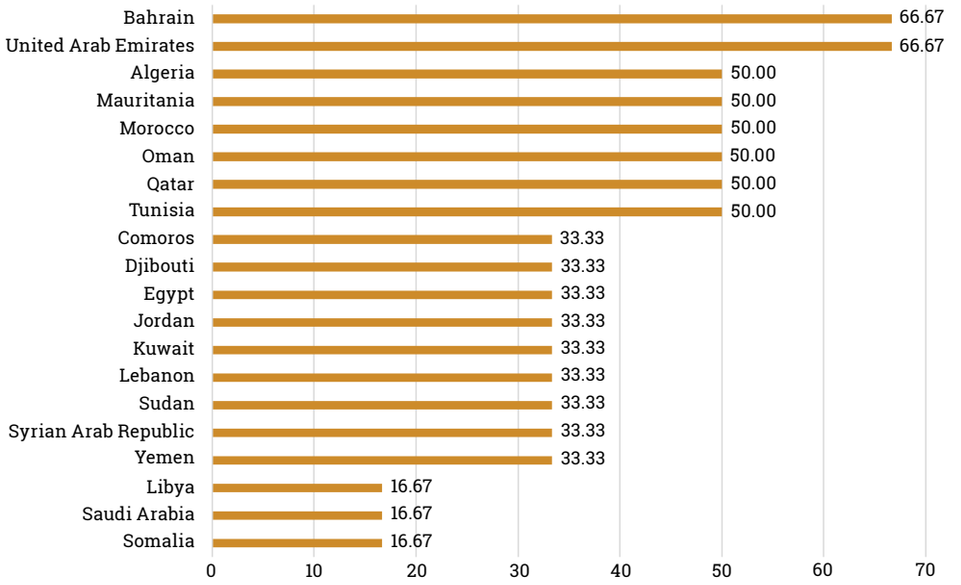
Compliance with the Montreal Protocol on hazardous waste and other chemicals




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.