Distr.
LIMITED
E/ESCWA/CL1.CCS/2020/TP.10
24 December 2020
ORIGINAL: ENGLISH

Economic and Social Commission for Western Asia (ESCWA)

Assessment of Sustainable Consumption and Production in the Arab Region 2020

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20-00571

Acknowledgments

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The report benefited from discussions that took place during the Expert Group Meeting on "Resource Efficiency in the Arab Region: Monitoring Progress of SDG 12 and Building Back Better from COVID-19" organized by ESCWA, UNEP/ROWA and the League of Arab States from 7 to 8 October 2020 (https://www.unescwa.org/egm-resource-effiency-arab-region).

1. Background

The United Nations Economic and Social Commission (UNESCWA) has been collaborating with its regional partners since 2008 to support regional work on sustainable consumption and production (SCP). This has supported implementation of the Ten-Year Framework of Programmes on Sustainable Consumption and Production (10YFP) as well as SCP-related goals and targets from the Sustainable Development Goals (SDGs), in particular Goal 12 on responsible consumption and production.

In 2017, UNESCWA commissioned a baseline assessment report of regional, sub-regional and national progress and challenges for achieving SCP and the SDGs[1]. The report provided a baseline on regional implementation of the 10YFP, the Arab Regional Strategy for Sustainable Consumption and Production as well as SCP-related targets of the SDGs. This included a baseline assessment of 21 SCP-related indicators, including official SDG indicators and proxies. The latest data points available for indicators were generally for 2013-14.

There has been considerable progress globally in terms of refining indicators, finalising methodologies, data compilation and evaluations of progress on the SDGs. This provides a rich source of data and methods for evaluating progress on SCP in the Arab region. This study draws upon the latest available data and methods to provide an updated quantitative assessment of progress on SCP in the Arab region. The study provides analysis of progress and constraints faced by the Arab region in achieving SCP targets and indicators.

Given the restricted data availability in the choice of indicators, the proposed indicators still cover a wide spectrum of issues which allow an in-depth analysis on SCP and circular economy and can support the identification of relevant policy options as an ultimate objective of this assessment.

The cross-sectoral nature of the selected indicators covers priority issues in the region, namely SDG 12 (responsible consumption and production), SDG 3 (health), SDG 6 (water), SDG 7 (energy), SDG 9 (infrastructure and industry), and SDG 11 (cities).

This cross sectoral approach captures key trends in SCP which can be linked to the systemic level for triggering a policy reform for SCP and the ramifications of SCP policies can influence priority aspects of the national, regional and global development agenda such as health (water and air quality) and climate change.

2. Methods

The method for the assessment was developed in consultation with UNESCWA and was based on the 2017 SCP study as well as more recent SDG-related assessments [2-8]. Important methodological considerations for the assessment related to the selection of indicators, the setting of 2030 target values, and the methods applied to evaluate progress towards the SDGs.

In terms of the selection of indicators, a priority set of 14 official SDG indicators relating to SCP were selected (**Table 1**) drawing from broader set of 21 indicators developed for the 2017 study. The indicators were selected based on their relevance for SCP in the Arab region, alignment with the official set of indicators adopted for monitoring the SDGs [9], and indicators for which data was available for most Arab countries. All data for the assessment was sourced from the UN Statistics Division SDG database[1] or other official databases of the UN. Five indicators correspond to SDG 12 on responsible consumption and production, with the remaining indicators corresponding to SDG 3

[1] https://unstats.un.org/sdgs/indicators/database/

(health), SDG 6 (water), SDG 7 (energy), SDG 9 (infrastructure and industry), and SDG 11 (cities). All baseline data used in the analysis is provided in the attached **Annex 1** (Excel table).

A key challenge for evaluating progress on the SDGs relates to the availability of quantitative target values. The official SDGs framework lacks target values for most indicators, and the intention is that countries define national targets guided by the global level of ambition and national circumstances. Target-setting is challenging and can be subjective in terms of different perspectives on the desired level of ambition, priorities and feasibility. However, it is important because it enables a more robust assessment of progress on the SDGs, highlights strengths and weaknesses, and provides insights on the scale and pace of transformations needed to achieve the goals by 2030. For the purposes of this assessment, 2030 target or benchmark values were identified for all 14 indicators drawing from the following sources (**Table 1**):

- Numerical SDG targets from the official SDG framework;
- Benchmarks set based on technical optimum performance (e.g. 100% waste collected);
- Targets or benchmarks based on a comparison with top-performing peer countries (e.g. an average of the top five performing Arab countries) or global averages;
- Targets or benchmarks sourced from international guidelines (e.g. WHO) or other global and regional assessments of the SDGs, global SDG Index [3].

A range of different methods for evaluating progress on targets and aggregating results across countries were reviewed and considered for the analysis. Given the lack of adequate timeseries data for most indicators, the assessment focused on the latest data point available for each indicator and each country compared against the 2030 target value. Common approaches used in the expert literature include rescaling and normalisation approaches which enables easy comparison across indicators and countries as well as aggregation of progress using a common scale and metric. This includes normalisation based on minimum and maximum values across countries for each indicator [4] as well as the standardised distance or z-score approach which uses the standard deviation of values across countries [2].

In consultation with UNESCWA, the z-score method was adopted for this study to provide an assessment of progress based on peer group comparison across countries in the Arab region. For each indicator, the following formula was applied:

$$\text{P} = MAX(\frac{T-x}{sd}, 0)$$

Where:

P: distance to target

T: value of the 2030 target for each indicator

x: current value achieved for each indicator

sd: standard deviation

The final progress value can be Interpreted as the distance from a target value, in standard deviations. For ease of interpretation, the results were trimmed and rescaled to 0-100, where 100 represents target achieved and 0 represents $\geq$3 standard deviations from a target. A limitation of this approach is that it relies on countries sharing enough commonalities to make a comparative normalization method meaningful. Where there is considerable variation among countries, the higher standard deviation will result in shorter distances to targets. For example, for indicator 6.4.1 on the level of

water stress, there is considerable variation between Arab countries (e.g. very high values as a result of desalination). To address this effect, extreme outliers were removed from the calculation of the standard deviation. It is important to note that the results are best interpreted as an inter-country comparison of progress on SCP between Arab countries.

The data was cleaned and analyzed in PowerBI to evaluate progress at the regional, sub-regional and national levels across all indicators individually. An advantage of using normalized scales is that progress can also be aggregated across indicators. For this study, simple arithmetic averages were also calculated for countries, sub-regions and the Arab region as a whole based on their performance for all 14 SCP indicators. Averages at the regional or sub-regional level were weighted by population. For sub-regional averages, the following country groupings were used as advised by UNESCWA:

- Gulf Cooperation Council (GCC) countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates;
- Middle Income Countries (MICs): Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia;
- Conflict-affected Countries (CACs): Iraq, Libya, Palestine, the Syrian Arab Republic and Yemen;
- Least developed countries (LDCs): the Comoros, Djibouti, Mauritania, Somalia and the Sudan

Finally, to support interpretation of the results, the progress values for each indicator were also evaluated using dashboard of traffic lights and thresholds as follows:

● On Track (score >90)
● Needs Improvement (score 50-90)
● Breakthrough Needed (score 10-50)
● Off Track (score <10)

Table 1. Indicators and target/benchmark values used in the assessment

Indicator	Description	Desired Direction	Target/ Benchmark Value	Target Source
3.9.2	Mortality rate attributed to unsafe water, sanitation and lack of hygiene (per 100,000 population)	Decrease	5	SDG target 3.9
6.3.1	Proportion of wastewater safely treated (%)	Increase	85.8	Average top 5 performers
6.4.2	Level of water stress (% of available water)	Decrease	25	Technical optimum
7.1.1	Proportion of population with access to electricity (%)	Increase	100	SDG target 7.1
7.2.1	Renewable energy share in total final energy consumption (%)	Increase	20	SDG Index green threshold
7.3.1	Energy intensity level of primary energy (MJ per 2011 GDP PPP)	Decrease	3.5	SDG Index green threshold
9.4.1	CO2 emission per unit of GDP (kg CO2 per 2010 USD)	Decrease	0.25	Average developed countries

11.6.1	Proportion of urban solid waste regularly collected and with adequate final discharge (%)	Increase	100	All waste collected/disposed
11.6.2	Annual mean levels of fine particulate matter in cities (micrograms per m3)	Decrease	10	WHO guideline
12.2.1	Material footprint per capita (t)	Decrease	12	World average
12.2.2	Domestic material consumption per capita (t)	Decrease	10.6	World average
12.4.1	Parties meeting their commitments and - hazardous waste, and other chemicals (0-100, average all treaties)	Increase	100	All countries reporting
12.c.1	Fossil-fuel pre-tax subsidies (% GDP)	Decrease	0.35	Average Top 5 performers
12.a.1	Installed renewable energy-generating capacity in developing countries (in watts per capita)	Increase	3870	Average Top 5 performers

There are additional aspects which can be investigated in future assessments if the data collection is expanded to cover a larger spectrum of associated indicators such as:

- The Water-Energy-Food (WEF) Nexus linkages to the adoption of SCP principles in the Arab region can be identified if SDG indicators related to agriculture/food are provided and will allow the assessment of relevant cross-sectoral SCP policy options to strengthen the WEF Nexus

- Indicators related to agriculture/food can also strengthen linkages between SCP and adaptation to climate change, similarly to the indicators used in this assessment which provide linkages between SCP and mitigation of CC. The identification of SCP policy options related to adaptation to climate change can be inform important aspects such as strengthening resilience of the agriculture sector, food security and the risks facing the agriculture sector from CC and its impact on the region.

3. Results/Discussion

The assessment results are summarized here as well as on a web-based dynamic dashboard that allows exploration of the data.

3.1 SCP progress and priorities at the Arab regional level

Figure 1 provides the results for each indicator at the Arab regional level. The values represent weighted average progress scores (0-100) for each indicator. Based on this analysis, key SCP challenges where the Arab region has made the least progress as a whole correspond to exposure to fine particulate air pollution (11.6.2), renewable energy share in total final energy consumption (7.2.1), installed renewable energy capacity (12.a.1), reporting on hazardous waste (12.4.1), fossil fuel subsidies (12.c.1), treatment of wastewater (6.3.1) and urban solid waste collection (11.6.1). All of these indicators were assessed as 'Breakthrough Needed' to achieve the SDG targets. No indicators were assessed as 'Off Track' for the Arab region as a whole, highlighting that some progress has been made across all thematic areas of SCP. At the other end of the spectrum, the region as a whole has

made good progress on material footprint per capita (12.2.1), water and sanitation (3.9.2) and domestic material consumption (12.2.2). Each of these indicators were assessed as 'On Track'. On average, across all indicators and all countries, the Arab region received a weighted score of 65/100 or 'Needs Improvement'.

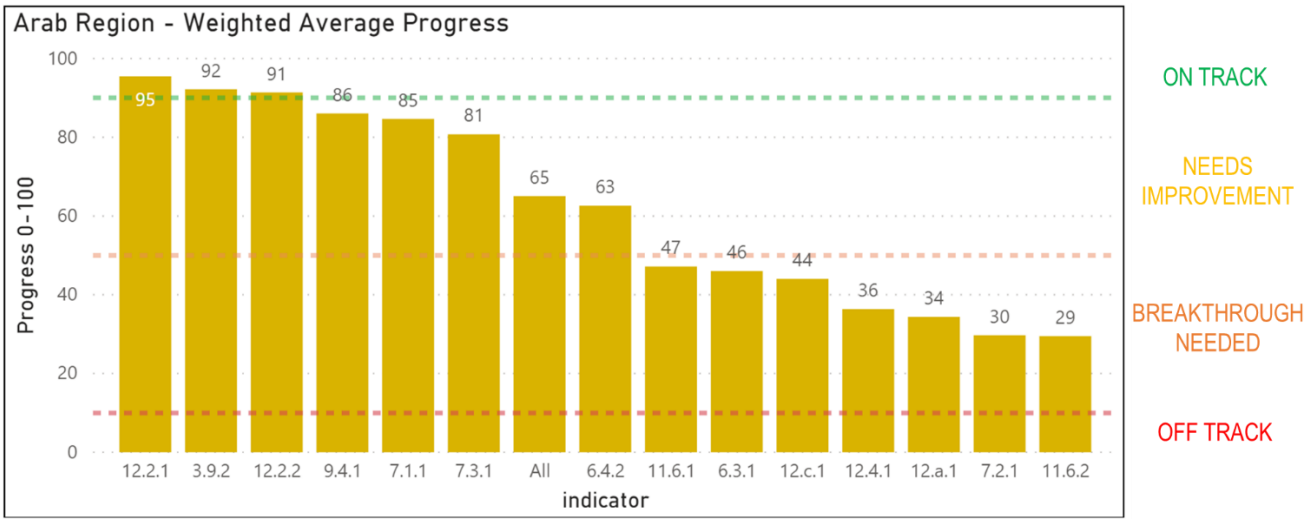


Figure 1. Weighted average progress scores for the Arab region on a scale of 0 to 100, where 100=target achieved and 0 is ≥3 standard deviations from the target. On the x-axis, 'All' corresponds to the average for the region across all indicators.

3.2 SCP progress and priorities at the sub-regional level

The results at the Arab regional level hide the considerable sub-regional and national heterogeneity. **Figure 2** provides weighted averages for each of the four Arab sub-regions across all 14 indicators. Based on this analysis, progress on SCP is evident across all four sub-regions. The average progress scores by sub-region range from 70/100 in the MICs grouping to 56/100 in the GCC grouping. This equates to an overall assessment of 'Needs Improvement'. However, considerable variation can be seen at the indicator-level for each sub-region (**Figure 3**). The full picture on SCP progress in the Arab region cannot however be considered complete given that data is still missing on many SCP-related indicators.

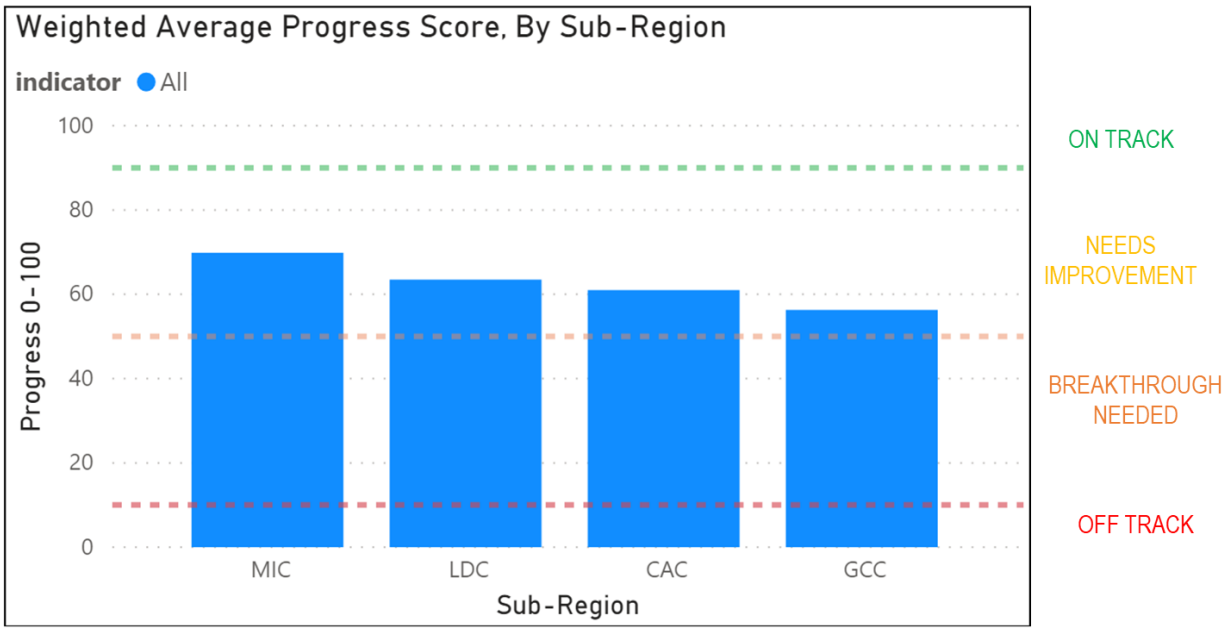


Figure 2. Weighted average progress scores for all 14 indicators, by sub-region

The MIC, CAC and LDC subregions are on track to achieve targets relating to resource consumption metrics such as material footprint (12.2.1) and domestic material consumption (12.2.2). In addition to national efforts, other socio-economic factors can also contribute to reducing material footprint and domestic consumption. This is not the case for the GCC subregion which was assessed as 'Needs Improvement' or 'Breakthrough Needed' on these metrics. These results aligned with the resource-intensive economies and greater affluence which result in increased consumption of resources. These findings are consistent with recent global studies [10, 11] that associate higher resource footprints with more affluent lifestyles and serves to highlight a tension in the SDGs between achieving goals and targets associated with economic growth and improved living standards and SCP-related targets on resource consumption.

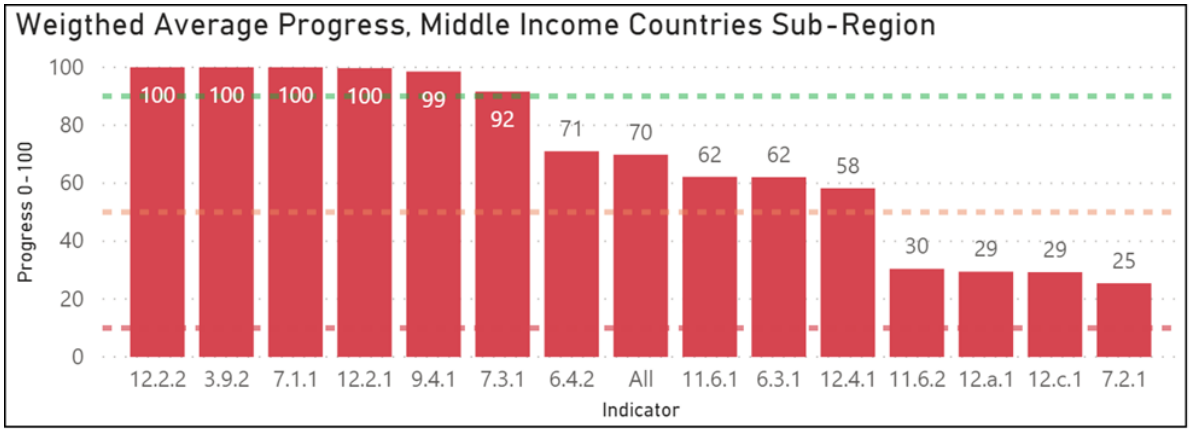
In terms of the SCP targets that relate to social objectives, all sub-regions except for the LDCs have made good progress on water and sanitation (3.9.2) and access to electricity (7.1.1). Both the MIC and GCC sub-regions are on track to achieve these targets. The LDCs sub region and, to a lesser degree, the CACs lag behind on access to electricity, which was assessed as 'Breakthrough Needed' and 'Needs Improvement', respectively.

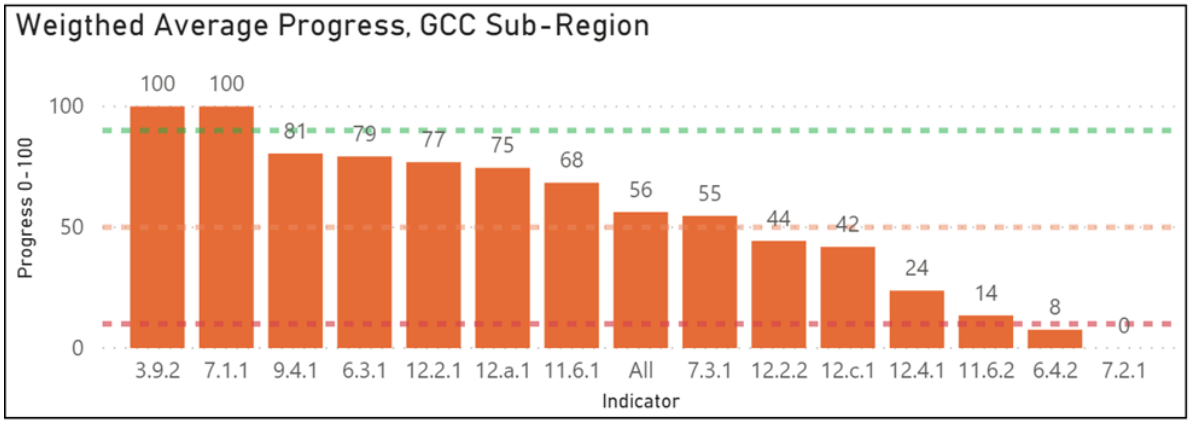
For the MICs sub-region, priority indicators where progress lags behind and which are assessed as 'Breakthrough Needed' including renewable energy (7.2.1 and 12.a.1), fossil fuel subsidies (12.c.1) and fine particulate air pollution (11.6.2). The sub-region was assessed as 'On Track' for six out of the 14 indicators including those on resource consumption (12.2.1, 12.2.2) and social objectives (3.9.3, 7.1.1), as well as greenhouse gas emissions (9.4.1) and energy intensity (7.3.1).

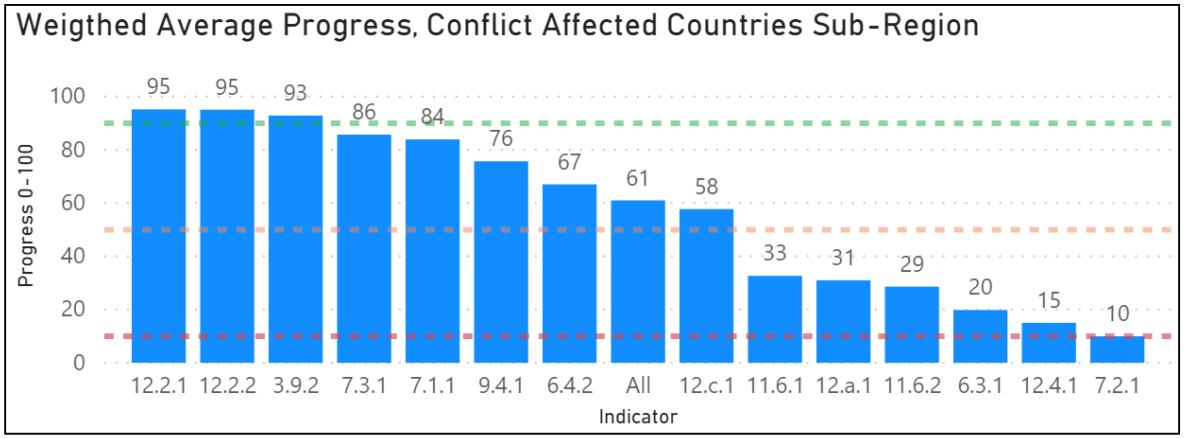
The CACs sub-region was assessed as 'Off Track' on renewable energy (7.2.1) and 'Breakthrough Needed' on hazardous chemicals reporting (12.4.1), treatment of wastewater (6.3.1), fine particular air pollution (11.6.2), installed renewable capacity (12.a.1) and waste management (11.6.1). The sub-region was assessed as 'On Track' for three indicators relating to resource consumption (12.2.1, 12.2.2) and water and sanitation (3.9.2).

The GCC sub-region was assessed as 'Off Track' for renewable energy in final energy consumption (7.2.1) and water stress (6.4.2). However, the sub-region did perform better in terms of installed renewable energy capacity per capita which reflects some progress in this area (12.a.1 assessed as 'Needs Improvement'). Indicators assessed as 'Breakthrough Needed' included fine particulate air pollution (11.6.2), hazardous waste reporting (12.4.1), fossil fuel subsidies (12.c.1) and domestic resource consumption (12.2.2). Only two of the 14 indicators were assessed as 'On Track', both corresponding to social objectives (3.9.2 and 7.1.1).

For the LDCs subregion, priority SCP indicators assessed as 'Off Track' included waste management (11.6.1), wastewater treatment (6.3.1), and hazardous waste reporting. Other priority indicators assessed as 'Breakthrough Needed' included installed renewable energy capacity (12.a.1), and access to electricity (7.1.1). The sub-region was assessed as 'On Track' for three indicators including renewable energy share in total final energy consumption (7.2.1), however the limited progress on indicator 12.a.1 on installed renewable energy capacity highlights that much of this is sourced from biomass.







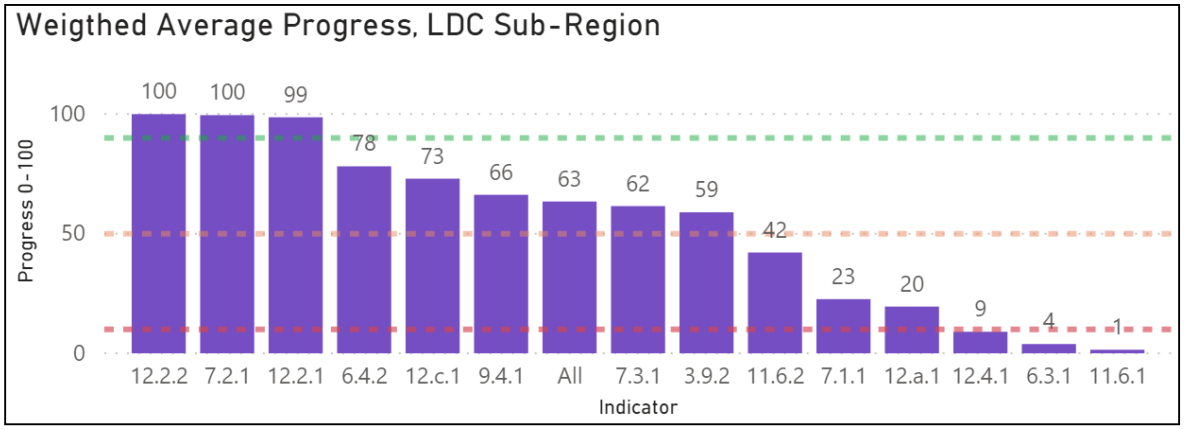


Figure 3. Weighted average scores fore each SCP indicator, by sub-region (MIC, GCC, CAC, and LDC)

3.3 SCP progress and priorities at the national level

Figure 4 provides average national progress scores across all of the 14 SCP indicators. Overall, it can be seen that several countries in the MICs grouping achieved greater progress on the SCP targets compared to other Arab countries, in particular Morocco, Tunisia and Jordan. **Figure 5** provides a scatter plot of the average SCP progress scores for each country (y-axis) and per capita GDP (x-axis). The size of the bubbles are scaled based on total population. The chart highlights that there is a negative correlation between per capita GDP and progress on SCP (-0.43) – i.e. countries with the highest GDP per capita tended to perform worse on average across the SCP indicators. The results at the national level by indicator are presented in the dashboard in **Table 2** as well as the subsequent charts which provide national progress scores for each of the 14 indicators. Again, considerable heterogeneity in performance can be seen for countries in the region. No Arab country is currently on track to achieve all SDG indicators, and no country is completely off track for all indicators. Overall, MICs and LDCs tend to perform better on average on SCP, with GCC and CACs lagging somewhat behind.

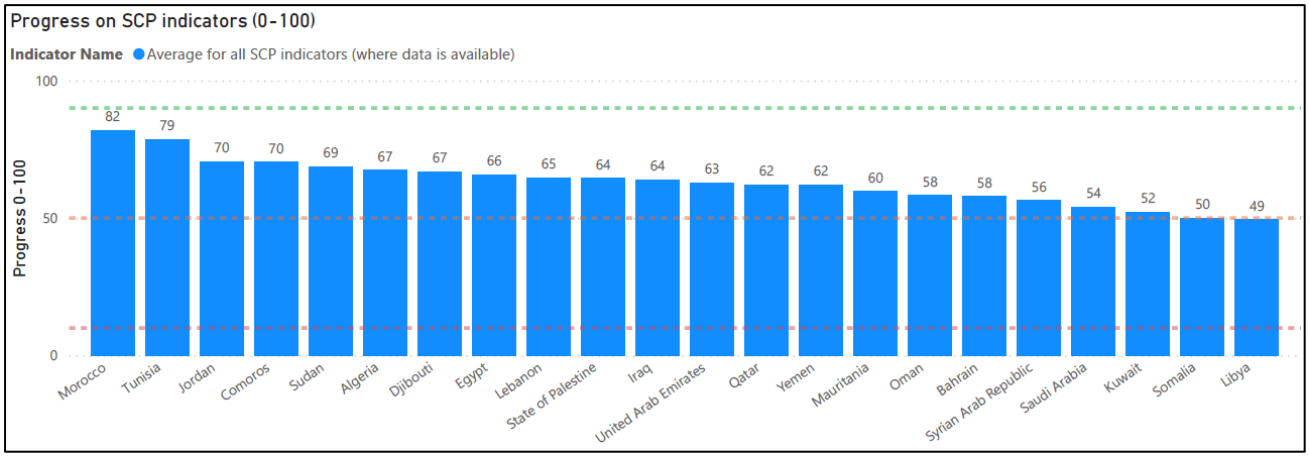


Figure 4. Average progress score across all 14 SCP indicators (where data is available), by country

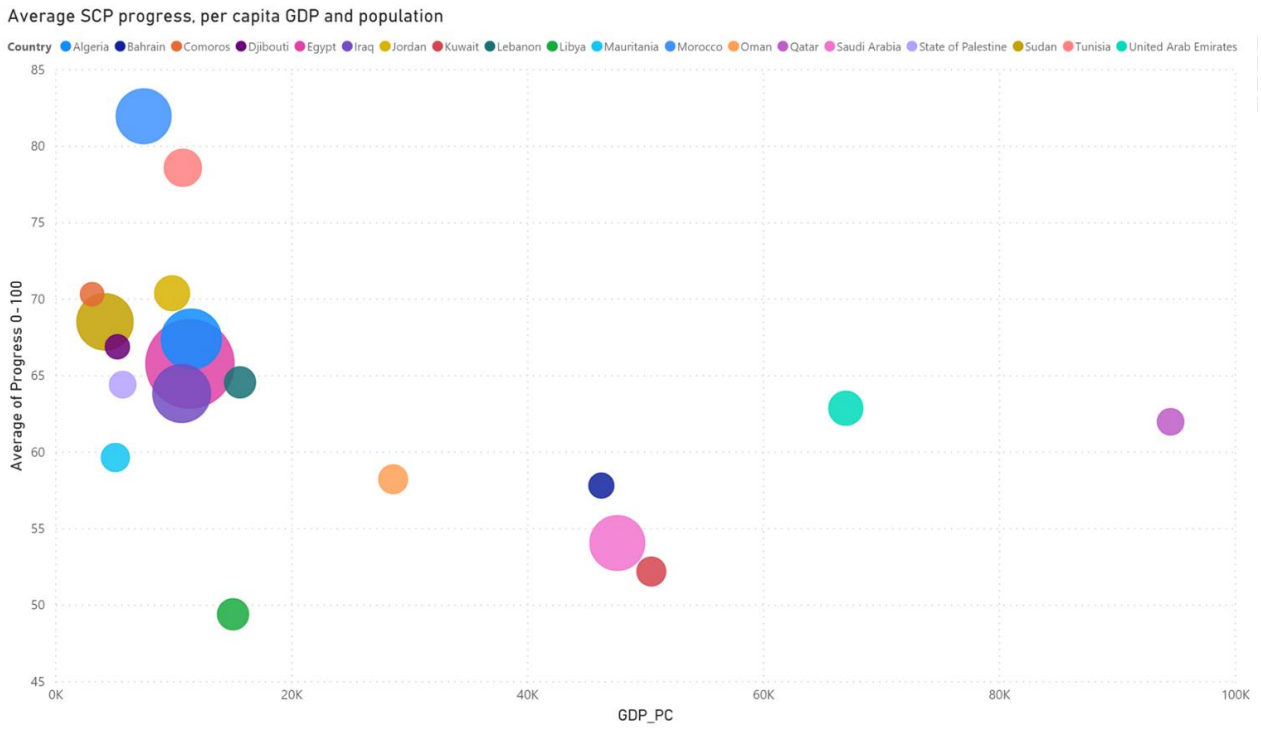


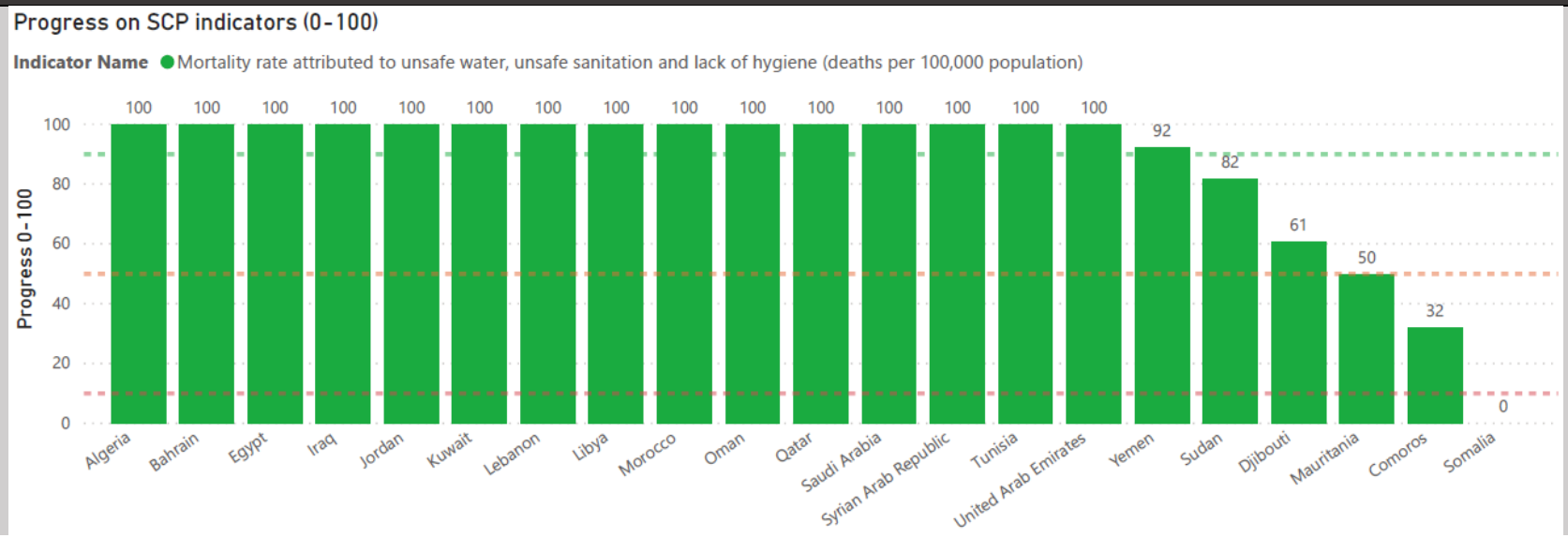
Figure 5. Scatter plot: average progress on SCP indicators versus GDP per capita (size = population)

Table 2. Country Dashboard for SCP Indicators

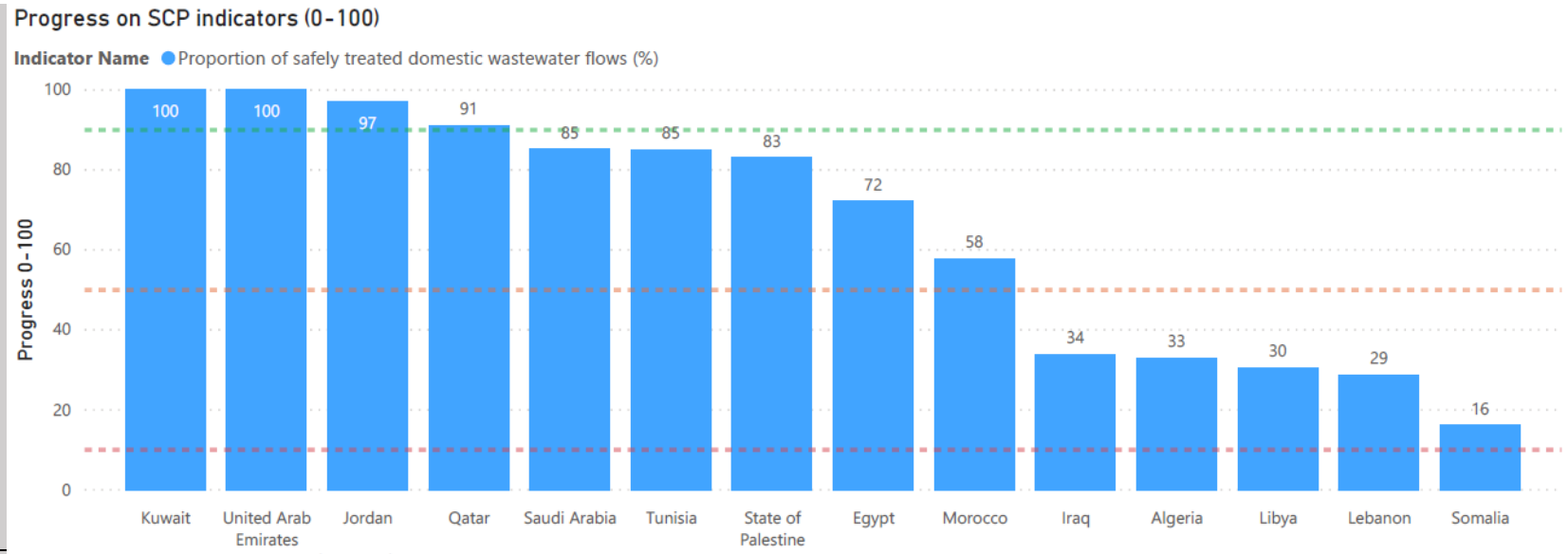
		3.9.2	6.3.1	6.4.2	7.1.1	7.2.1	7.3.1	9.4.1	11.6.1	11.6.2	12.2.1	12.2.2	12.4.1	12.a.1	12.c.1	ALL
MICs	Algeria	🟢	🟠	🟡	🟢	🔴	🟡	🟢	🟡	🟡	🟢	🟢	🟡	🟠	🟠	67
	Egypt	🟢	🟡	🟡	🟢	🟠	🟢	🟢	🟡	🔴	🟢	🟢	🟠	🟠	🔴	66
	Jordan	🟢	🟢	🟡	🟢	🟠	🟡	🟡	-	🟡	🟢	🟢	🟠	🟠	🟠	70
	Lebanon	🟢	🟠	🟢	🟢	🟠	🟡	🟡	-	🟡	🟢	🟢	🟡	🟠	🟠	65
	Morocco	🟢	🟡	🟢	🟢	🟡	🟢	🟢	-	🟡	🟢	🟢	🟡	🟠	🟢	82
	Tunisia	🟢	🟡	🟡	🟢	🟡	🟢	🟢	🟢	🟡	🟢	🟢	🟡	🟠	🟡	79
CACs	Iraq	🟢	🟠	🟡	🟢	🔴	🟡	🟢	🟠	🟠	🟢	🟢	🟠	🟠	🟡	64
	Libya	🟢	🟠	🔴	🟡	🔴	🟡	🟡	-	🟠	🟢	🟢	🟠	🟡	🔴	49
	Palestine	🟢	🟡	🟢	🟢	🟡	🟢	-	-	-	-	-	🔴	🟠	-	64
	Syria	🟢	-	🟡	🟡	🔴	🟡	🔴	🟡	🟠	🟢	🟢	🔴	🟠	-	56
	Yemen	🟢	-	🟠	🟡	🟠	🟢	🟢	🔴	🟠	🟢	🟢	🟠	🟠	🟡	62
GCC	Bahrain	🟢	-	🟡	🟢	🔴	🔴	🟡	🟢	🔴	🟢	🟠	🟡	🟢	🟠	58
	Kuwait	🟢	🟢	🔴	🟢	🔴	🟡	🟡	🟢	🟠	🟠	🟠	🔴	🟢	🟠	52
	Oman	🟢	-	🟡	🟢	🔴	🟠	🟡	-	🟠	🟢	🟠	🟠	🟡	🟠	58
	Qatar	🟢	🟢	🔴	🟢	🔴	🟠	🟢	🟢	🔴	🟢	🔴	🟠	🟢	🟢	62
	Saudi Arabia	🟢	🟡	🔴	🟢	🔴	🟡	🟡	🟡	🔴	🟢	🟠	🔴	🟡	🟠	54
	UAE	🟢	🟢	🔴	🟢	🔴	🟡	🟡	-	🟠	🔴	🟠	🟡	🟡	🟡	63
LDCs	Comoros	🟠	-	🟢	🟡	🟢	🟢	-	-	🟡	-	🟢	🔴	🟠	🟢	70
	Djibouti	🟡	-	🟢	🟠	🟡	🟢	-	-	🟠	🟢	🟢	🔴	🟠	🟢	67
	Mauritania	🟠	-	🟢	🔴	🟢	🟡	-	🟠	🟠	🟢	🟢	🔴	🟠	🟡	60
	Somalia	🔴	🟠	🟢	🔴	🟢	-	-	-	🟡	🟢	🟢	🔴	🟠	-	50
	Sudan	🟡	-	🟡	🟠	🟢	🟡	🟢	-	🟠	🟢	🟢	🟠	🟠	🟢	69

National progress scores – by SCP Indicator

3.9.2



6.3.1


Progress on SCP indicators (0-100)
Indicator Name
Proportion of safely treated domestic wastewater flows (%)
Progress 0-100
100
80
60
40
20
0
100
100
97
91
85
85
83
72
58
34
33
30
29
16
Kuwait
United Arab Emirates
Jordan
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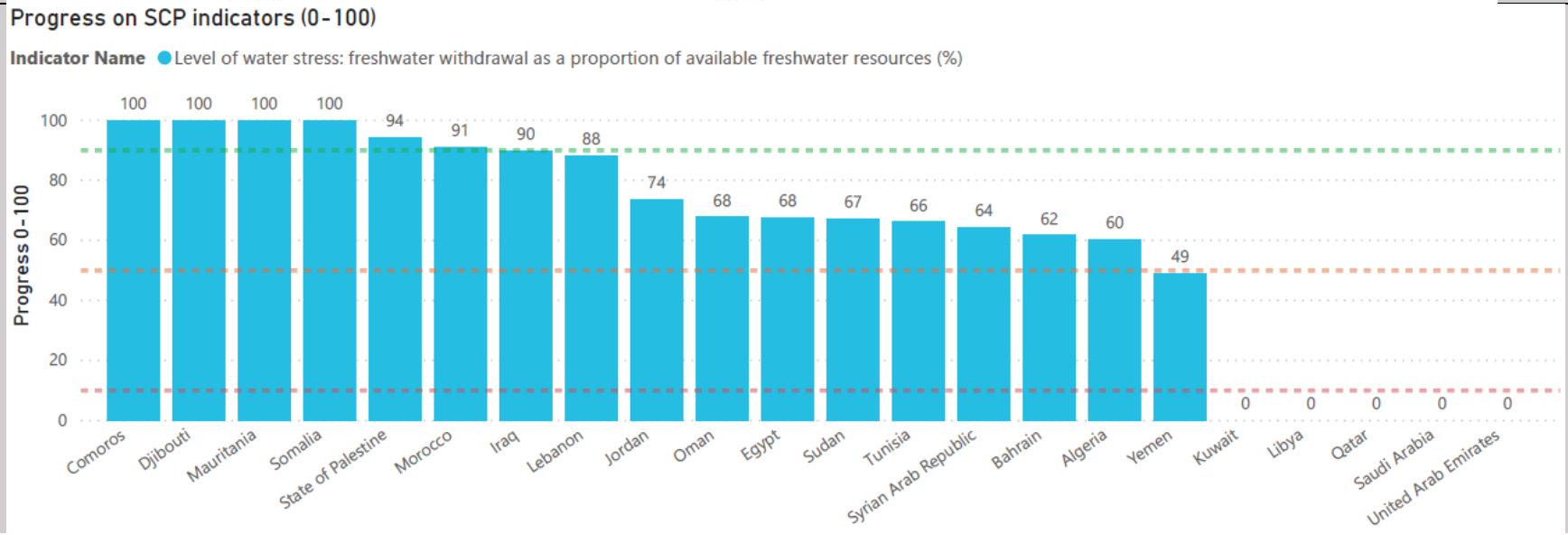
6.4.2


Progress on SCP indicators (0-100)
Indicator Name
Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (%)
Progress 0-100
100
80
60
40
20
0
100
100
100
100
94
91
90
88
74
68
68
67
66
64
62
60
49
0
0
0
0
0
Comoros
Djibouti
Mauritania
Somalia
State of Palestine
Morocco
Iraq
Lebanon
Jordan
Oman
Egypt
Sudan
Tunisia
Syrian Arab Republic
Bahrain
Algeria
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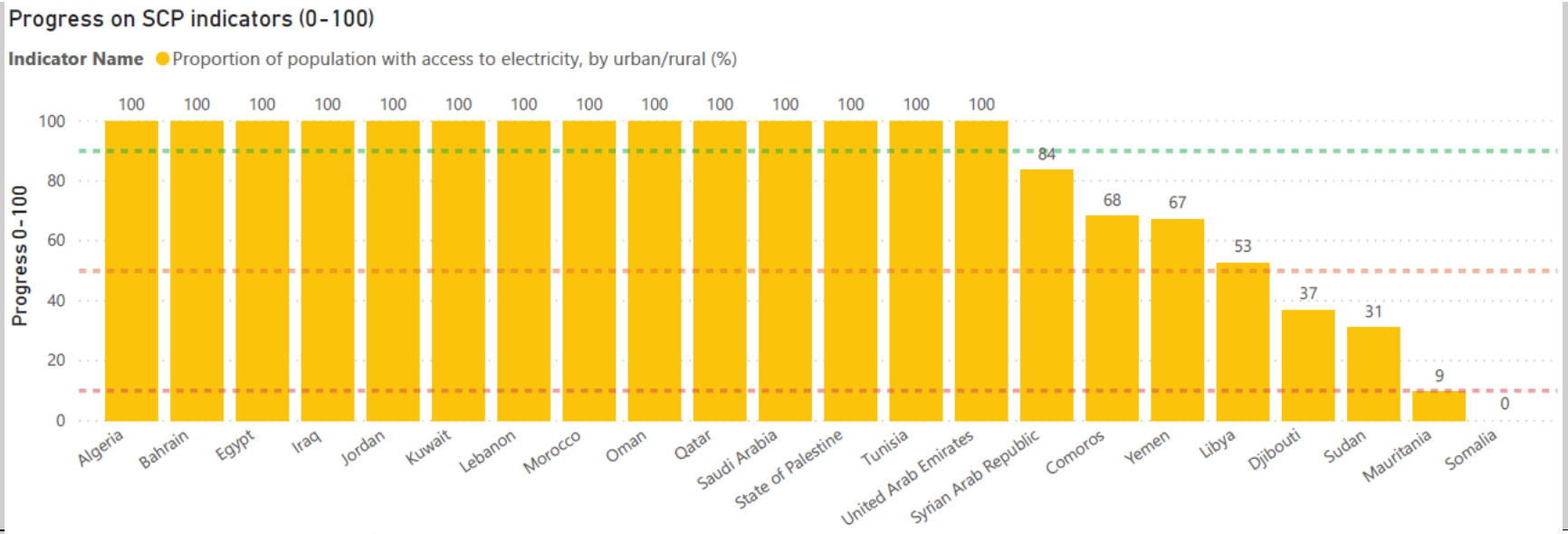
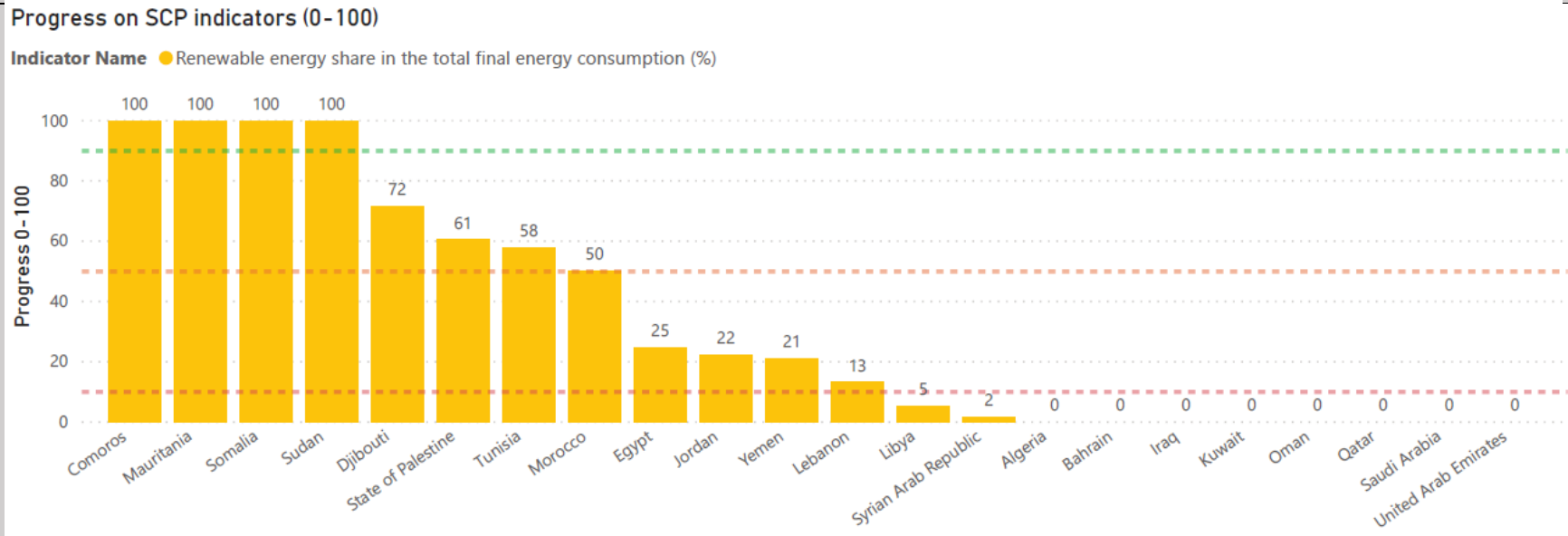
Libya
Qatar
Saudi Arabia
United Arab Emirates

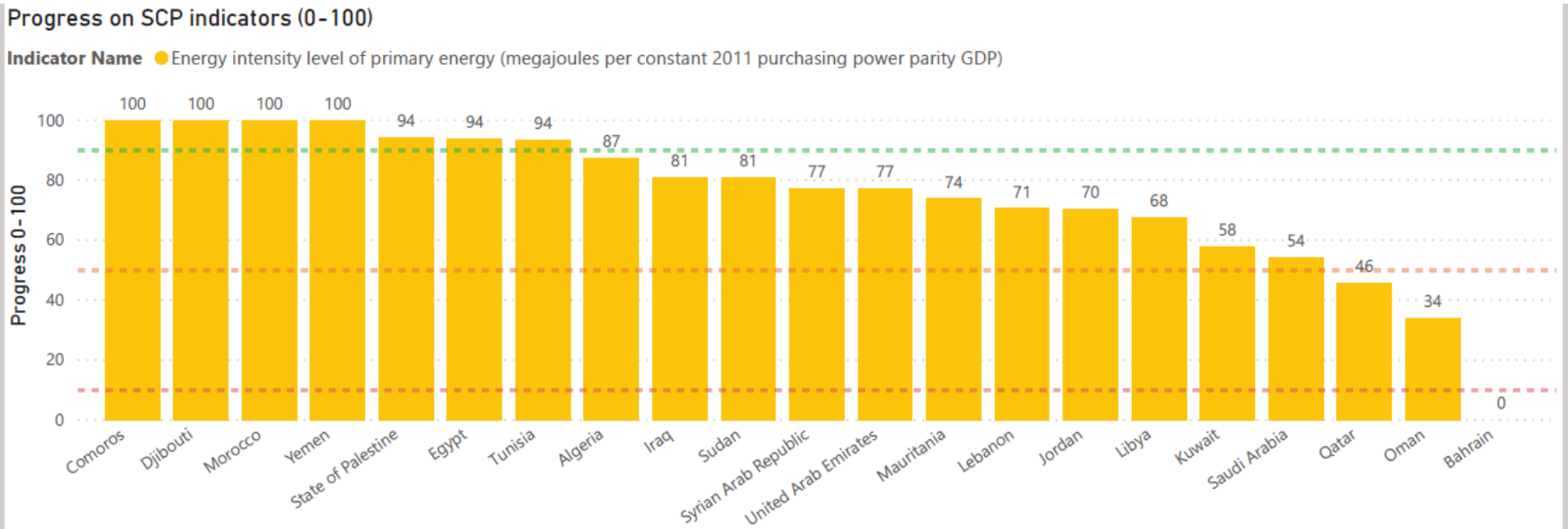
7.1.1


Progress on SCP indicators (0-100)
Indicator Name
Proportion of population with access to electricity, by urban/rural (%)
Progress 0-100
100 100 100 100 100 100 100 100 100 100 100 100 100 100 84 68 67 53 37 31 9 0
Algeria Bahrain Egypt Iraq Jordan Kuwait Lebanon Morocco Oman Qatar Saudi Arabia State of Palestine Tunisia United Arab Emirates Syrian Arab Republic Comoros Yemen Libya Djibouti Sudan Mauritania Somalia

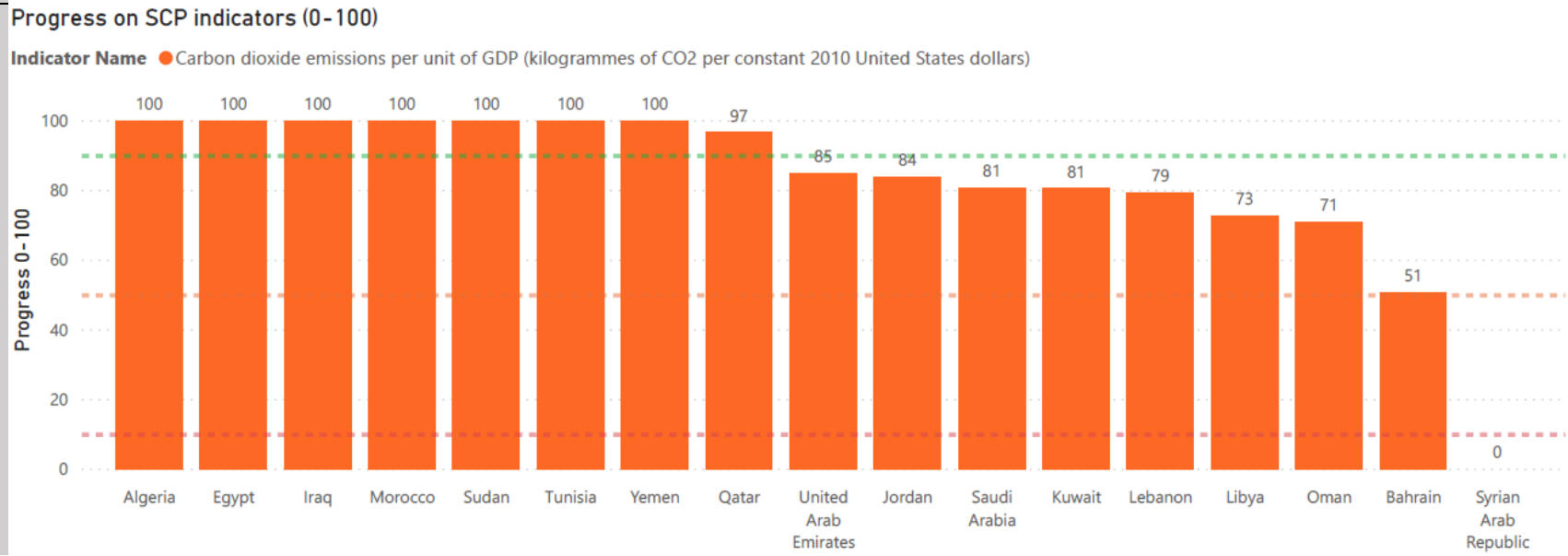
7.2.1


Progress on SCP indicators (0-100)
Indicator Name
Renewable energy share in the total final energy consumption (%)
Progress 0-100
100 100 100 100 72 61 58 50 25 22 21 13 5 2 0 0 0 0 0 0 0 0
Comoros Mauritania Somalia Sudan Djibouti State of Palestine Tunisia Morocco Egypt Jordan Yemen Lebanon Libya Syrian Arab Republic Algeria Bahrain Iraq Kuwait Oman Qatar Saudi Arabia United Arab Emirates

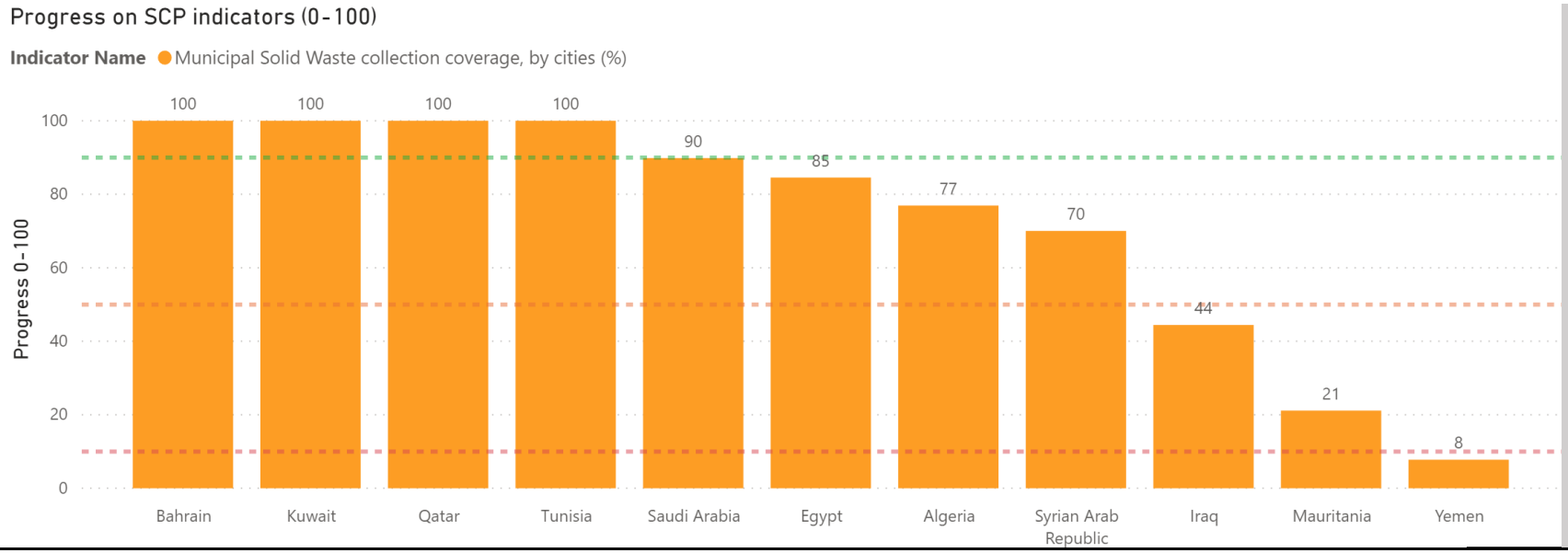
7.3.1


Progress on SCP indicators (0-100)
Indicator Name
Energy intensity level of primary energy (megajoules per constant 2011 purchasing power parity GDP)
Progress 0-100
100 100 100 100 94 94 94 87 81 81 77 77 74 71 70 68 58 54 46 34 0
Comoros
Djibouti
Morocco
Yemen
State of Palestine
Egypt
Tunisia
Algeria
Iraq
Sudan
Syrian Arab Republic
United Arab Emirates
Mauritania
Lebanon
Jordan
Libya
Kuwait
Saudi Arabia
Qatar
Oman
Bahrain

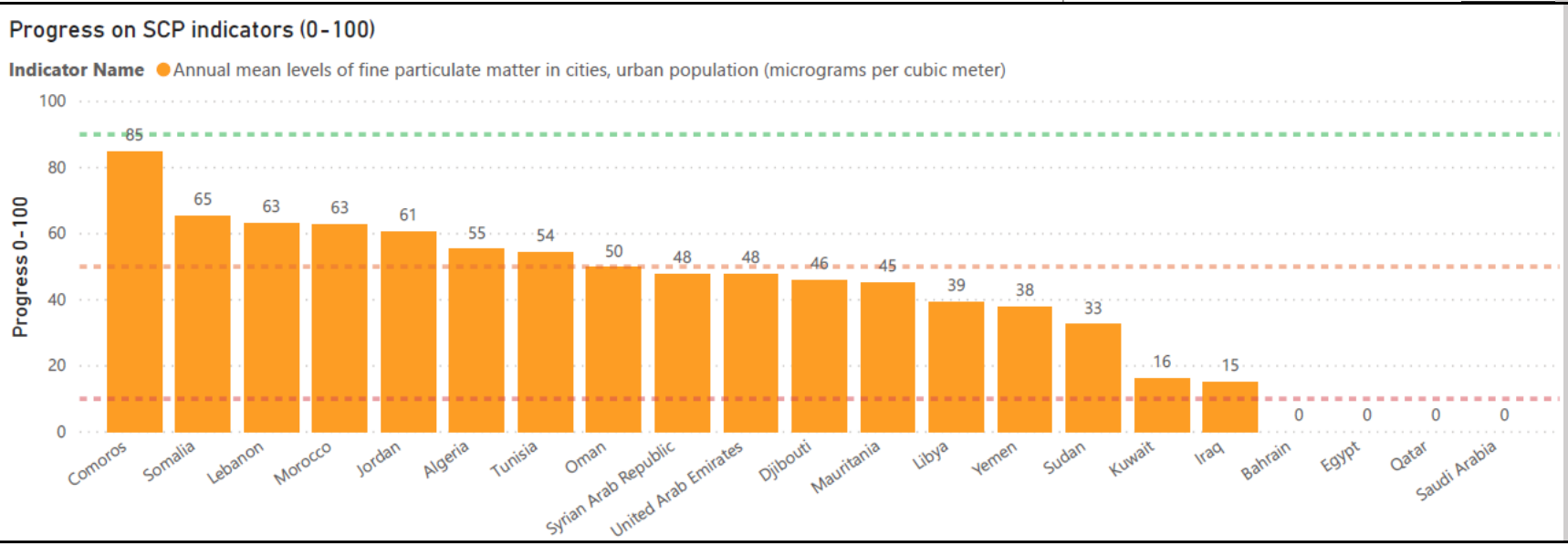
9.4.1


Progress on SCP indicators (0-100)
Indicator Name
Carbon dioxide emissions per unit of GDP (kilogrammes of CO2 per constant 2010 United States dollars)
Progress 0-100
100 100 100 100 100 100 100 97 85 84 81 81 79 73 71 51 0
Algeria
Egypt
Iraq
Morocco
Sudan
Tunisia
Yemen
Qatar
United Arab Emirates
Jordan
Saudi Arabia
Kuwait
Lebanon
Libya
Oman
Bahrain
Syrian Arab Republic

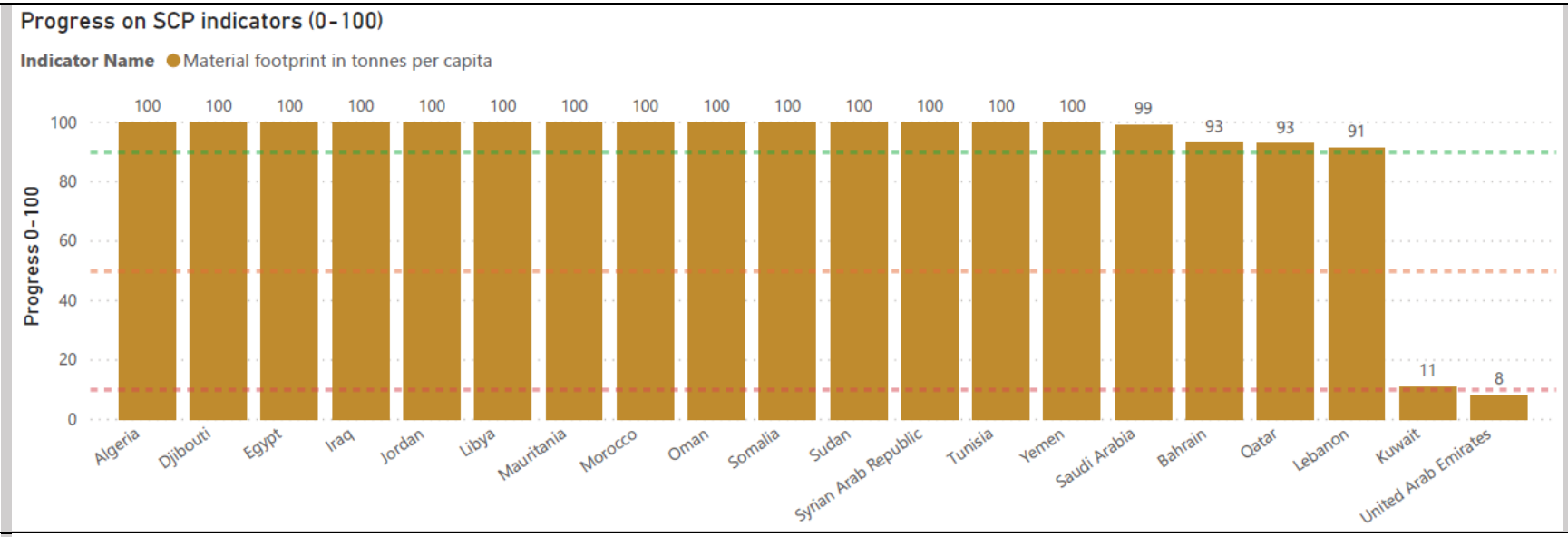
11.6.1


Progress on SCP indicators (0-100)
Indicator Name
Municipal Solid Waste collection coverage, by cities (%)
Progress 0-100
100
80
60
40
20
0
100
100
100
100
90
85
77
70
44
21
8
Bahrain
Kuwait
Qatar
Tunisia
Saudi Arabia
Egypt
Algeria
Syrian Arab Republic
Iraq
Mauritania
Yemen

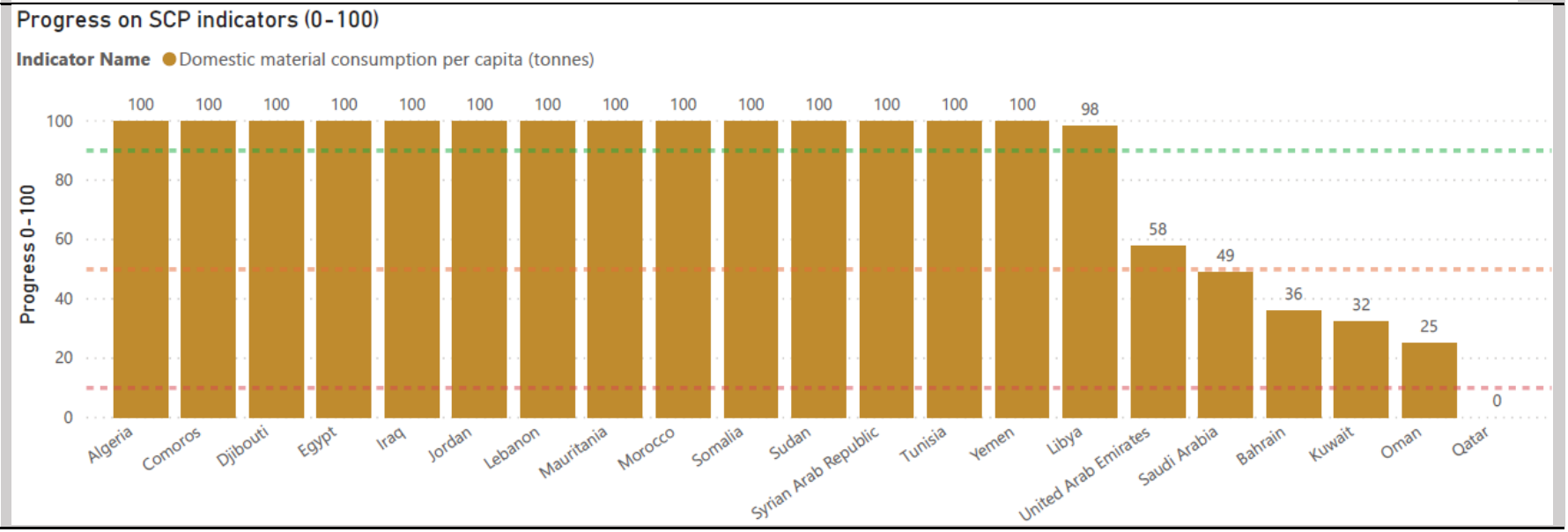
11.6.2


Progress on SCP indicators (0-100)
Indicator Name
Annual mean levels of fine particulate matter in cities, urban population (micrograms per cubic meter)
Progress 0-100
100
80
60
40
20
0
85
65
63
63
61
55
54
50
48
48
46
45
39
38
33
16
15
0
0
0
0
Comoros
Somalia
Lebanon
Morocco
Jordan
Algeria
Tunisia
Oman
Syrian Arab Republic
United Arab Emirates
Djibouti
Mauritania
Libya
Yemen
Sudan
Kuwait
Iraq
Bahrain
Egypt
Qatar
Saudi Arabia

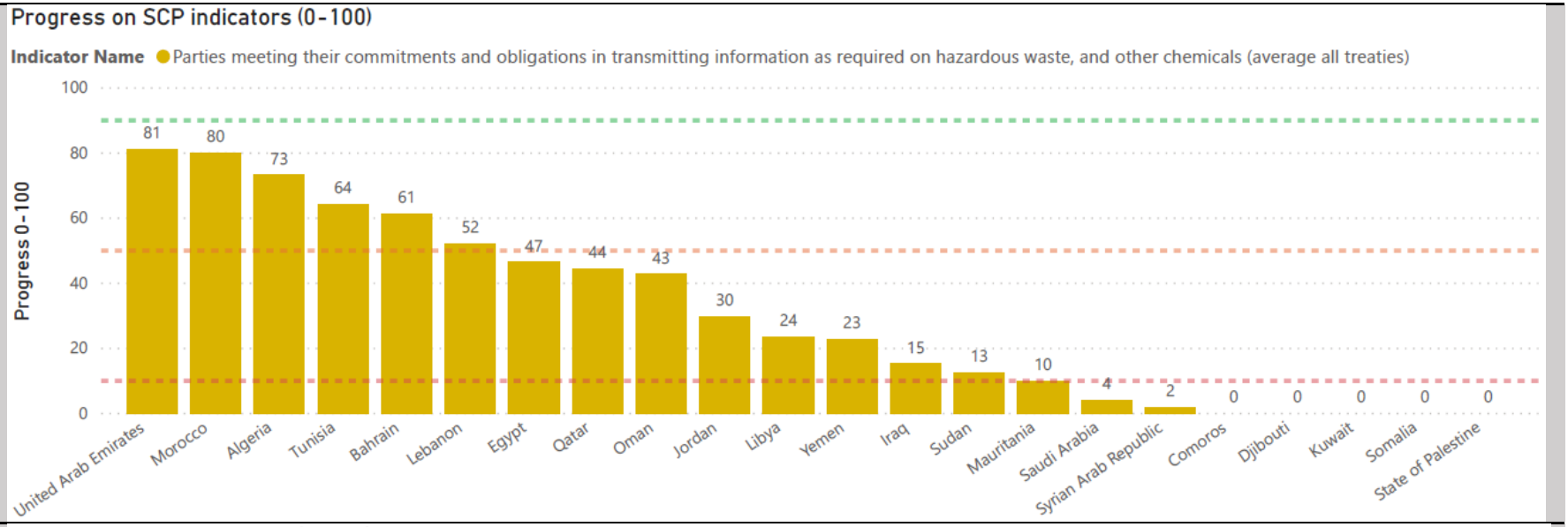
12.2.1


Progress on SCP indicators (0-100)
Indicator Name
Material footprint in tonnes per capita
Progress 0-100
0
20
40
60
80
100
100 100 100 100 100 100 100 100 100 100 100 100 100 100 99 93 93 91 11 8
Algeria
Djibouti
Egypt
Iraq
Jordan
Libya
Mauritania
Morocco
Oman
Somalia
Sudan
Syrian Arab Republic
Tunisia
Yemen
Saudi Arabia
Bahrain
Qatar
Lebanon
Kuwait
United Arab Emirates

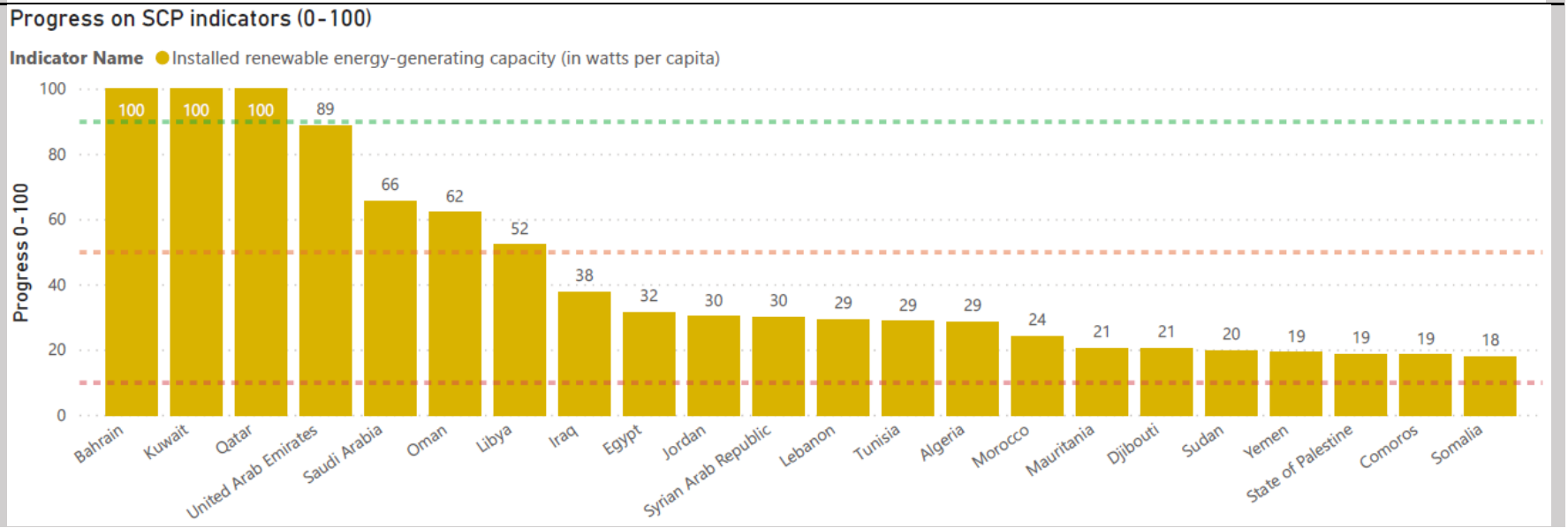
12.2.2


Progress on SCP indicators (0-100)
Indicator Name
Domestic material consumption per capita (tonnes)
Progress 0-100
0
20
40
60
80
100
100 100 100 100 100 100 100 100 100 100 100 100 100 100 98 58 49 36 32 25 0
Algeria
Comoros
Djibouti
Egypt
Iraq
Jordan
Lebanon
Mauritania
Morocco
Somalia
Sudan
Syrian Arab Republic
Tunisia
Yemen
Libya
United Arab Emirates
Saudi Arabia
Bahrain
Kuwait
Oman
Qatar

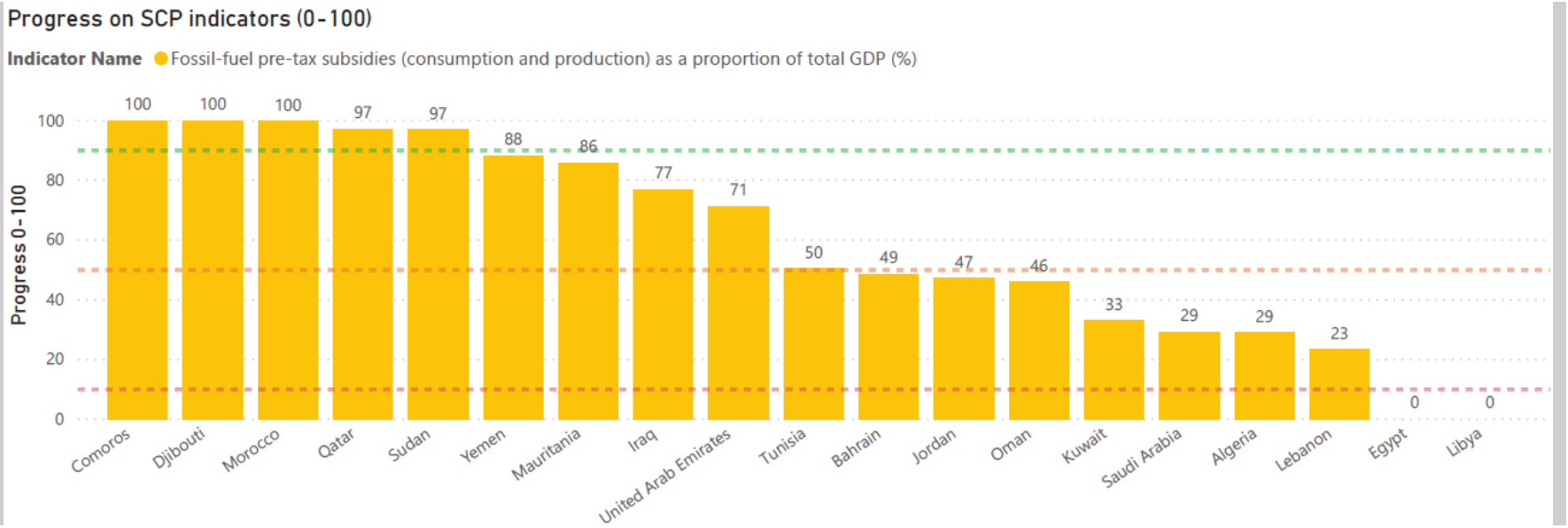
12.4.1


Progress on SCP indicators (0-100)
Indicator Name
Parties meeting their commitments and obligations in transmitting information as required on hazardous waste, and other chemicals (average all treaties)
Progress 0-100
100
80
60
40
20
0
81
80
73
64
61
52
47
44
43
30
24
23
15
13
10
4
2
0
0
0
0
0
United Arab Emirates
Morocco
Algeria
Tunisia
Bahrain
Lebanon
Egypt
Qatar
Oman
Jordan
Libya
Yemen
Iraq
Sudan
Mauritania
Saudi Arabia
Syrian Arab Republic
Comoros
Djibouti
Kuwait
Somalia
State of Palestine

12.a.1


Progress on SCP indicators (0-100)
Indicator Name
Installed renewable energy-generating capacity (in watts per capita)
Progress 0-100
100
80
60
40
20
0
100
100
100
89
66
62
52
38
32
30
30
29
29
29
24
21
21
20
19
19
19
18
Bahrain
Kuwait
Qatar
United Arab Emirates
Saudi Arabia
Oman
Libya
Iraq
Egypt
Jordan
Syrian Arab Republic
Lebanon
Tunisia
Algeria
Morocco
Mauritania
Djibouti
Sudan
Yemen
State of Palestine
Comoros
Somalia

12.c.1


Progress on SCP indicators (0-100)
Indicator Name
Fossil-fuel pre-tax subsidies (consumption and production) as a proportion of total GDP (%)
Progress 0-100
100
80
60
40
20
0
Comoros 100
Djibouti 100
Morocco 100
Qatar 97
Sudan 97
Yemen 88
Mauritania 86
Iraq 77
United Arab Emirates 71
Tunisia 50
Bahrain 49
Jordan 47
Oman 46
Kuwait 33
Saudi Arabia 29
Algeria 29
Lebanon 23
Egypt 0
Libya 0

4. Options for the Use of this Assessment for Policy Recommendations

Findings of this assessment are relevant for developing policy instruments for SCP and provide a needed basis for the identification of policy tools for advancing a life cycle analysis in different sectors to promote circular economy principles.

In addition to the assessment of the trends at the level of specific sectors, the findings of the SCP assessment can be consolidated at the level of several indicators in order to provide a cross-sectoral analysis for the identification of relevant policy options for SCP. As an example, policy options which can be identified based on the SCP assessment can address, among others, the following priorities:

- SCP policy tools for responding to environmental priorities such as reducing air pollution and mitigating GHG emission which are highly relevant to the region. Based on the consolidation of the different indicators across several SDGs (indicated in Table 3 below), it is possible to identify relevant SCP policy options to advance environmental priorities

Table 3. Indicators of the SCP assessment for identification of policy options for promoting SCP principles in the energy sector

SDG Indicator	Description
7.1.1	Proportion of population with access to electricity (%)
7.2.1	Renewable energy share in total final energy consumption (%)
7.3.1	Energy intensity level of primary energy (MJ per 2011 GDP PPP)
9.4.1	CO2 emission per unit of GDP (kg CO2 per 2010 USD)
11.6.2	Annual mean levels of fine particulate matter in cities (micrograms per m3)
12.c.1	Fossil-fuel pre-tax subsidies (% GDP)
12.a.1	Installed renewable energy-generating capacity in developing countries (in watts per capita)

- SCP policy tools for improving consumers' perception of the environmental health ramifications of public services (including environmental services such as wastewater management and solid waste management). These services are often viewed as non-essential by the general public which affects the sustainability of public investments which requires SCP policy options for triggering a consumer's behavioral change to advance aspects such as cost recovery of these services (as indicated in Table 4 below).

Table 4. Indicators of the SCP assessment for triggering a consumer behavioral change for the sustainability of public environmental investments

3.9.2	Mortality rate attributed to unsafe water, sanitation and lack of hygiene (per 100,000 population)
6.3.1	Proportion of wastewater safely treated (%)
6.4.2	Level of water stress (% of available water)

11.6.1	Proportion of urban solid waste regularly collected and with adequate final discharge (%)
12.2.1	Material footprint per capita (t)
12.2.2	Domestic material consumption per capita (t)
12.4.1	Parties meeting their commitments and - hazardous waste, and other chemicals (0-100, average all treaties)

Other key considerations to for designing policy options for SCP in the Mashreq sub-region include:

- Experience and know-how developed under the SwitchMed initiative which aims at achieving a circular economy in the southern Mediterranean and which has developed a large spectrum of tools and services to support an enabling policy environment and facilitated exchange of information among partners and key stakeholders[2].
- Reference can be made to the World Bank's report on "Responsible Consumption and Production" which provides a large spectrum of best practices in more than 50 countries on regulations, guidance, standards, or other policies for the implementation of Sustainable Development Goal 12.[3]
- While the SCP assessment has identified Iraq, Palestine, the Syrian Arab Republic as Conflict-affected Countries (CACs), the World Bank had considered all Mashreq countries, for the exception of Jordan, as Fragility, Conflict & Violence (FCV) countries, and which could be taken into consideration in the context of policy development.
- Specificities to the countries/region should be taken into consideration while developing policy options for SCP namely: the presence of a large number of refugees population in Lebanon, Jordan and Iraq; the political, economic, social and environmental situation in Palestine cannot be approached from a conventional perspective; and the population dynamics in the region which includes a large proportion of youth and which is an important asset for triggering a behavioral change for SCP.

[2] https://switchmed.eu/

[3] https://elibrary.worldbank.org/doi/full/10.1596/978-1-4648-1080-0_ch12

Specific Case studies which are relevant for SCP policy options in Lebanon:

Economic instruments for recycling in Lebanon

A study conducted in 2016 on Economic Instruments to Create Incentives for Recycling in Lebanon has assessed the recycling trends in Lebanon and causes for the limited extent of recycling. The study concluded that direct subsidies for recycling are not fiscally or economically justifiable, and noted that several mechanisms are of particular interest as strategies for encouraging more recycling and/or increasing funds available for solid waste management, such as:

- Mainstreaming a high landfill tipping fee will create an incentive to recycle in order to reduce the amount paid
- Pay as you throw waste management charges could be initiated for commercial enterprises to see how they may work.
- Packaging taxes (on plastic bags) and deposit / refund system (on bottles) are both relatively simple and effective ways to reduce material use, reduce trash in the environment, and encourage recycling. However, they may not actually raise revenues for government as they are often set at a cost not higher than the cost of their implementation.
- Extended Producer Responsibility (EPR) systems, while somewhat more complex, may also be useful to ensure recycling of specific packaging material.

(Source: MoE/EU. 2016. Economic Instruments to Create Incentives for Recycling in Lebanon.)

Availability of research on factors that influence the propensity and behavioral change to adopt SCP approach

Although limited research has been conducted in Lebanon to establish a 'benchmark' or 'baseline' for behavioral change for the adoption of SCP approaches, existing research on behavioral change in Lebanon can be used in the formulation of policy recommendations at the consumers' level. In this context, reference can be made to a study which investigated socio-demographic, socio-cultural and social-psychological profiles of a representative sample of Lebanese youth. The study provides a first assessment of youth in Lebanon and indicates that the Lebanese youth are highly educated, with over 41% of the population holding a university degree. This study confirms an important potential for behavioral change for the adoption of SCP approaches among the youth in Lebanon, building upon the following findings of the research:

- Lebanese youth are of the most educated populations in the region, an asset that constitutes an important basis for understanding SCP approaches.
- Language proficiency is closely associated with exposure to foreign cultures, a fact that is mirrored by the youth's media consumption preferences and indicates a substantial amount of cultural variation and diversity and thus access to new consumption patterns.
- Value hierarchies that emerged from the research indicated that Lebanese youth reflects a clear preference for the derived values (honor and hospitality), closely followed by values of self-transcendence (benevolence and universalism). The latter are the values that capture idealism and strong concern with the well-being of the community and the environment and can trigger a shift towards the adoption of SCP approaches if the relevant information is made available.

Source: Charles Harb, 2010. Describing the Lebanese Youth: A National and Psycho-Social Survey.

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