

SDG INDEX AND
DASHBOARDS REPORT 2019

ARAB REGION



Executive Summary

The *Arab Region SDG Index and Dashboards* are intended as a tool for governments and other stakeholders to measure progress on the Sustainable Development Goals (SDGs), and to highlight gaps in both implementation and data. The 2019 Arab Region SDG Index is the first in its kind and is therefore also intended as a conversation-opener about priority areas, policies and actions.

The 2019 Arab Region SDG Index comprises 105 indicators, each of which have an assigned score (0–100) and a traffic light colour (green, yellow, orange, or red) to indicate performance. In addition, arrows indicate trends in progress towards achieving the goals for those indicators where data for multiple years are available.

Compared to the *Sustainable Development Report 2019*, which contains the SDG Index and Dashboards for all UN Member States, the Arab Region Index introduces 30 new indicators that reflect regional priorities and challenges. The selection of these indicators, along with related thresholds, was greatly informed by two rounds of regional expert consultations, which were conducted in May and August 2019 and collected more than 200 comments from more than 40 individuals. The regional Index also removes indicators that are not useful or relevant for the region or where data coverage is currently insufficient.

In addition, the 2019 Arab Region Index includes Palestine, which has so far not been included in the global SDG Index reports. It also provides a total SDG achievement score for two countries – Libya and Somalia – that did not receive one in the global Index due to low data availability.

The main findings of the study are:

- 1. The region displays a wide range of sustainable development outcomes, with common challenges around sustainable food production systems and gender equality, among others.** The variances between the 22 Arab countries reflect their very significant differences in performance on many socio-economic indicators. Only a few common denominators are universal in the region, including poor performance on SDGs 2 (Zero Hunger) and 5 (Gender Equality). There are also significant challenges in SDGs 3 (Good Health and Well-being), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 8 (Decent Work and Economic Growth), 9 (Industry, Innovation and Infrastructure), 14 (Life below Water) and 16 (Peace, Justice and Strong Institutions), which cut across the region. Other SDGs show more variation, which makes overarching policy recommendations difficult – responses and solutions need to be country- and context-specific.
- 2. Five countries are two-thirds of the way to achieving the SDGs.** In 2019, five countries emerge as regional leaders, with a total index score of 65 or above. These are Algeria, the United Arab Emirates, Morocco, Tunisia and Jordan, in descending order. Taken as a whole, the Arab region does not score high in terms of SDG attainment, with an average score of 58 out of 100. With only a decade left to achieve the 2030 Agenda the region needs to accelerate efforts in all areas of sustainable development.

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3. **Poor and conflict-affected countries face the highest risk of falling behind.** Overall, the 22 Arab countries receive a red score for 51% of all the 17 SDGs. The region's six Least Developed Countries (LDCs) and two other countries suffering from conflict, Syria and Iraq, each have more than 10 SDGs in 'red' in the SDG Dashboard, indicating that they are far from achieving these Goals. These countries will require tremendous efforts both domestically and by their regional and international partners to ensure they are not left behind.
 4. **There is positive momentum in two important areas relating to environmental sustainability, water and climate change.** Several countries are on track to achieving SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action), and there are moderate increases in performance across several SDGs. From an environmental security perspective, achieving sustainable water systems and addressing climate change are crucial. Overall, however, only a total of four of the 17 SDGs have so far been achieved in three countries of the region (Iraq, Jordan and Lebanon). This means that 19 countries have not yet achieved a single SDG.
 5. **Significant gaps remain in data necessary to measure sustainable development performance in the region, particularly relating to income and wealth distribution.** The most significant data gaps are currently found on SDG 1 (No Poverty) and SDG 10 (Reduced Inequalities). In both areas, the gaps are the result of lack of data on income and wealth distribution. No publicly-available regional datasets were identified in the process of developing the 2019 Arab Region SDG Index. The Arab region should urgently invest more attention and resources to generating and making available data in the areas outlined above. This will be essential not only for tracking SDG performance but also to enable data-driven, science-based planning and decision-making.

PART 1

THE SDG INDEX AND DASHBOARDS



PART 1

The SDG Index and Dashboards

1.1. Introduction

The SDG Index and Dashboards

The 17 Sustainable Development Goals (SDGs) are an ambitious agenda. All countries in the world are expected to reach them by 2030. This will require unprecedented efforts from everyone. It will require transformational policies and investments, supporting the poorest and most vulnerable, engaging everyone in implementation and, last but not least, data. Implementing the SDGs, as any policy agenda, requires high-quality, accessible data. In order to make well-informed decisions, governments, businesses and other stakeholders need data on all aspects of the 2030 Agenda. In 2019, the global community is four years into implementation of this 15-year agenda, but data availability remains a major challenge (see Box 1).

In order to address this gap, the UN Sustainable Development Solutions Network (SDSN) and Bertelsmann Stiftung developed the SDG Index and Dashboards methodology and, since 2016, have published annual, global-level *SDG Index and Dashboards* reports that provide a detailed and up-to-date view of progress by countries worldwide on the SDGs. The SDG Index is not an official monitoring tool for the SDGs, but is as closely aligned as possible with the official SDG indicators. It fills remaining gaps with relevant data from reputable sources, which include international data providers (the World Bank, World Health Organization, International Labour Organization and others), research centres and non-governmental organisations.

Figure 1 | The Sustainable Development Goals



Box 1. The 2030 Agenda for Sustainable Development and the Role of Data

The 17 Sustainable Development Goals (SDGs), adopted in 2015 as part of the 2030 Agenda for Sustainable Development, form a common roadmap for all countries to achieve progress in critical areas for both humans and the planet. The SDGs are a universal, indivisible and integrated agenda. In other words, all countries are expected to work towards them, taking into account their different national circumstances, capacities and priorities. All countries are expected to strive to achieve all SDGs. And the Goals have interlinkages – either synergies or trade-offs – that need to be taken into account and understood in policy development and implementation.

The SDGs seek to ensure improvement in the three dimensions of sustainable development: economic, social and environmental, underpinned by good governance and partnerships. They are grounded in the Millennium Development Goals (2000–2015), but introduce several new areas of policy action, in particular relating to environmental sustainability. The SDGs also place partnerships at the heart of the agenda: the 2030 Agenda emphasises both the need to support the poorest and most vulnerable ('leaving no-one behind') and the importance of engaging all stakeholders, at various levels, from the global and regional levels, through national and subnational levels to the individual, in implementing the Agenda.

The SDGs form an aspirational agenda. They are not politically-binding on countries. At the same time, they are the only major globally-agreed set of common goals for development for the next decade for all UN Member States.

Data is an important enabler of SDG implementation. SDG 17 has two data-related targets:

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.

17.19 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.

Governments have the primary responsibility for following up and reviewing progress on the SDGs at national, regional and global levels. The UN provides mechanisms for supporting this work at both global (High-level Political Forum on Sustainable Development) and regional (work under the Regional Commissions) levels.

The UN has also developed a set of official SDG indicators to support this work. The global indicator framework, which includes 232 indicators, was adopted by the UN General Assembly in 2017. Indicators are classified in three tiers according to whether it has an internationally-established methodology and data is regularly produced by countries. As of May 2019, there were 104 Tier I indicators, meaning that less than half of the official indicators have an established methodology and data for at least 50% of countries in every region where the indicator is relevant (UNSD 2019a). Another challenge is that almost half of the 169 SDG Targets are not quantified, which makes their tracking difficult (SDGC/A and SDSN 2019, ix).

As stressed in the 2030 Agenda, 'quality, accessible, timely and reliable disaggregated data will be needed to help with the measurement of progress and to ensure that no one is left behind. Such data is key to decision-making' (UNGA 2015).



The Arab Region SDG Index and Dashboards

Similarly to the Global SDG Index, the Arab Region SDG Index is intended as a tool for governments and other stakeholders to measure progress on the SDGs, to highlight areas where further emphasis is needed to speed up implementation, to demonstrate data gaps and to spur conversations about priorities and actions.

The 2019 Arab Region SDG Index and Dashboards comprises 105 indicators, each of which have an assigned score (0–100) and a traffic light colour (green, yellow, orange, or red) to indicate performance. In addition, arrows indicate trends in goal achievement for those indicators where data for multiple years are available.

Inspired by the Africa SDG Index and Dashboards report, the Arab Region Index makes two important amendments to the Global Index:

- Introducing new indicators that reflect regional priorities and challenges; and
- Removing indicators that are not useful or relevant for the region or where data coverage is currently insufficient.

As a result, the 2019 Arab Region SDG Index provides a total SDG achievement score for two countries that did not receive one in the Global Index due to low data availability – Libya and Somalia. In addition, the Arab Index includes Palestine, which has so far not been included in the Global Index reports.

It is important to stress that, as a result of the changes introduced, the results of the Arab Region SDG Index are not comparable with the Global SDG Index or other regional index reports. As new data become available on further

indicators, the Arab Region Index will evolve accordingly to always provide the most comprehensive and up-to-date picture possible. For this reason, future editions of the Arab Region Index may not be directly comparable with the 2019 edition.

The Arab Region SDG Index is not an official SDG measurement tool. Important work is conducted in this regard by the UN Economic and Social Commission for Western Asia (ESCWA), which has been mandated by its member states to prepare a regional report on the 2030 Agenda, called *The Arab Sustainable Development Report*, every four years to support follow-up and review at the regional level (ESCWA 2019). The Arab Region SDG Index is intended as a complementary tool for policymakers and stakeholders at all levels aimed at informing policy discussions and helping accelerate the implementation of the 2030 Agenda in the region.

Structure of the Report

This report contains five major parts. Part 1 introduces and analyses the results of the 2019 Arab Region SDG Index and Dashboards. Part 2 presents case studies authored by regional scholars and practitioners that highlight SDG-related priorities, challenges and success stories both related to thematic areas (water governance, food-energy-water nexus and stabilisation), policymaking (policy integration of the SDGs and green growth) and data (leveraging big data and improving statistical capacities).

Part 3 presents detailed profiles for each of the 22 Arab countries, containing information at indicator and SDG level as well as trends in SDG achievement. Part 4 presents the results of the index per indicator, and Part 5 provides a thorough explanation of the SDG Index and Dashboards methodology, including changes introduced in the 2019 Arab Region edition.

1.2. 2019 Arab Region SDG Index

The 2019 Arab Region SDG Index describes the Arab region countries' progress towards achieving the SDGs and indicates areas requiring faster progress. The SDG Index score and scores by goal can be interpreted as a percentage of achievement. The difference between 100 and countries' scores is therefore the percentage improvement that needs to be completed to achieve the SDGs and goals.

Overall SDG Scores

In 2019, the Arab region exhibits a diversity of sustainable development outcomes, reflecting its vast differences on many socioeconomic indicators. Only a few common denominators cut across the region, including poor performance on SDGs 2 and 5, which measure sustainable food production systems and gender equality, respectively. Many other SDGs show more variation. However, as a whole, the Arab region does not score high in terms of SDG attainment, with an average score of 58 out of 100.

In 2019, five countries emerge as regional leaders, with a total score of 65 or above – meaning that they are approximately two-thirds of the way to achieving the SDGs. These are Algeria, the United Arab Emirates, Morocco, Tunisia and Jordan. Three countries lag behind, having achieved less than 50% of the SDGs: Comoros, Yemen and Somalia. These countries will require tremendous efforts both domestically and by their regional and international partners to ensure they are not left behind. Palestine is featured for the first time in the SDG Index, but due to low data availability (55% of all indicators have data for Palestine), it does not receive a total score in the Index. (See Table 1.)

The SDGs are a unique toolkit for measuring development, which is reflected in the results of the 2019 Arab SDG Index. High performance on the SDGs does not correlate fully with either of the two broadly-used measures of development: gross domestic product (GDP) per capita and the Human Development Index (HDI). As is shown by Table 2, a high GDP per capita does not automatically indicate a high regional ranking in the SDG index (a correlation of 0.34). However, there is a stronger correlation between SDG achievement and GDP per capita among the lower-performing 11 countries (0.87), which indicates a link between economic performance and sustainable development outcomes.

As for the UN Development Programme's HDI, which was developed in response to a perceived need to measure development also by a country's progress in social metrics, the correlation is higher for the entire group of 22 countries (0.80). The correlation between the HDI and SDG achievement among the lower-performing 11 countries is even higher (0.90).

Conflict and political instability are generally understood to have a negative effect on development outcomes in the region. However, the SDG Dashboards do not indicate a significant correlation between a country's overall SDG score and the indicators on political stability and battle-related deaths (0.54 and -0.26, respectively). However, none of the countries in the region suffering from conflict scores in the top-half of the ranking.

It is also important to keep in mind the great variations in population sizes. In 2019, the total population of the 22 Arab countries was 431 million people. There are 11 countries with a population of more than 10 million, together comprising 89% of the Arab region's population. Egypt alone accounts for 23% of the region's total population. Figure 2 shows the SDG dashboard scores of the countries of the Arab region combined with a graphic illustration of the number of people living in each country.

New Indicators

The 2019 Arab Index introduces a total of 30 new indicators compared to the 2019 Global Index (see Table 3). The indicators were selected based on their relevance for the region, in consultation with regional experts, and availability of data. Also, some of the indicators from the 2019 Global Index were removed or replaced due to low data availability. A detailed list of all changes is presented in Part 5 (Methodology).

As a result of these changes, the Arab Index scores in 2019 are lower overall than in the 2019 Global Index. The share of SDGs in red (major challenges) in the 2019 Arab Dashboards (51%) is also higher than that in the 2019 Global Dashboards (42%), which covers 21 out of the 22 Arab countries. These differences can be explained with the inclusion of indicators that focus on areas where the region's countries face sustainable development challenges and the overall higher number of indicators: a red score for a goal is applied if at least two underlying indicators have a red score.



Table 1 | The 2019 Arab Region SDG Index

	<u>RANK</u>	<u>COUNTRY</u>	<u>SCORE</u>	<u>RANK</u>	<u>COUNTRY</u>	<u>SCORE</u>	
	1	ALGERIA	66.69	12	SAUDI ARABIA	59.72	
	2	UNITED ARAB EMIRATES	66.17	13	IRAQ	55.49	
	3	MOROCCO	65.77	14	LIBYA	53.90	
	4	TUNISIA	65.33	15	MAURITANIA	52.75	
	5	JORDAN	65.28	16	SUDAN	52.11	
	6	LEBANON	63.09	17	SYRIAN ARAB REPUBLIC	51.86	
	7	OMAN	62.84	18	DJIBOUTI	51.04	
	8	EGYPT	61.59	19	COMOROS	48.26	
	9	KUWAIT	61.08	20	YEMEN	46.89	
	10	QATAR	60.57	21	SOMALIA	43.41	
	11	BAHRAIN	59.82				

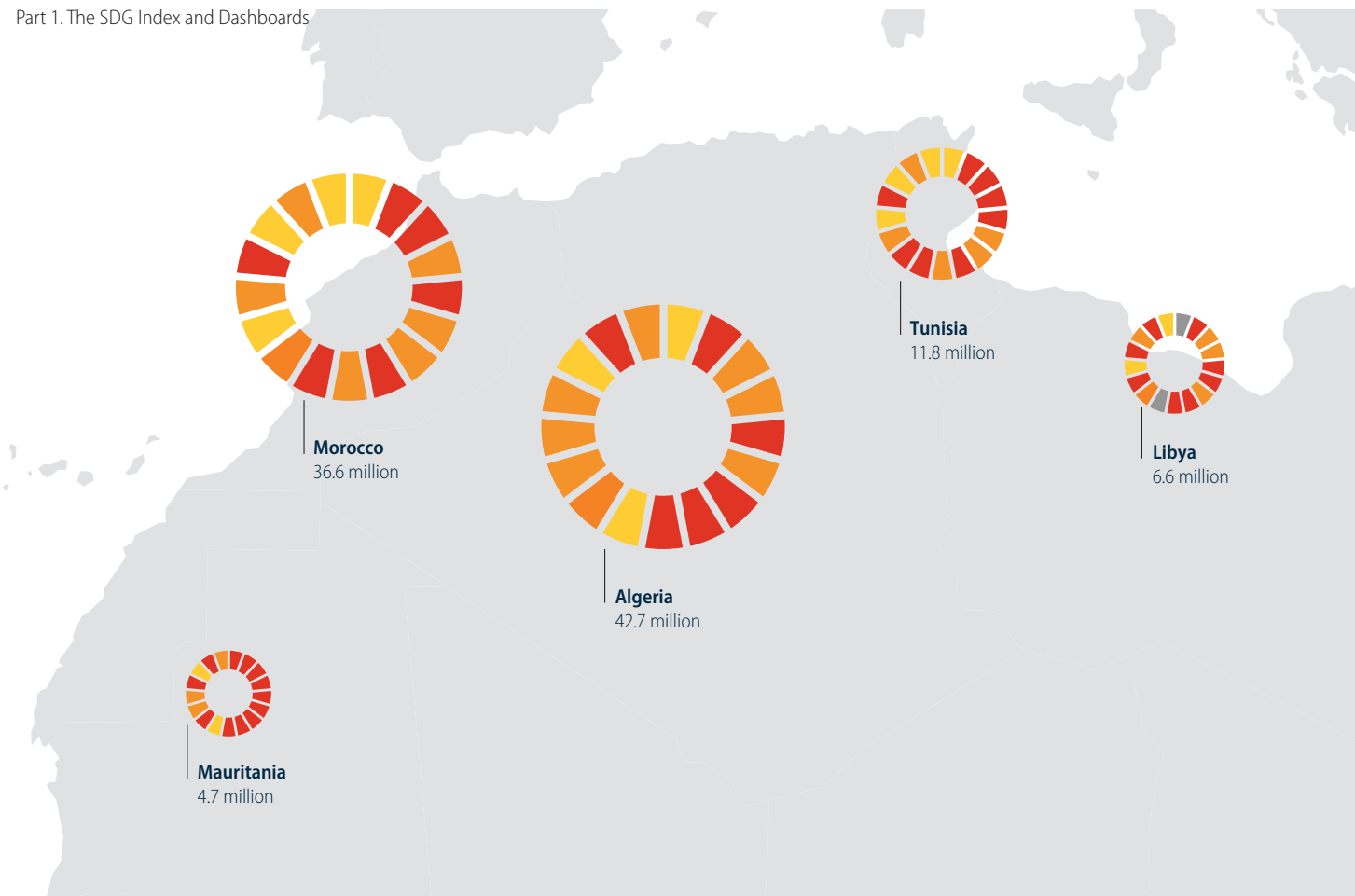


Figure 2

The Arab Region: Comparative Populations and SDG Performance by Country in 2019

This graphic presents the SDG dashboard scores of the 22 countries of the Arab region in 2019, with the size of the SDG rings proportional to the number of people living in each country.¹

1. Source: 2019 Arab Region SDG Index metadata.



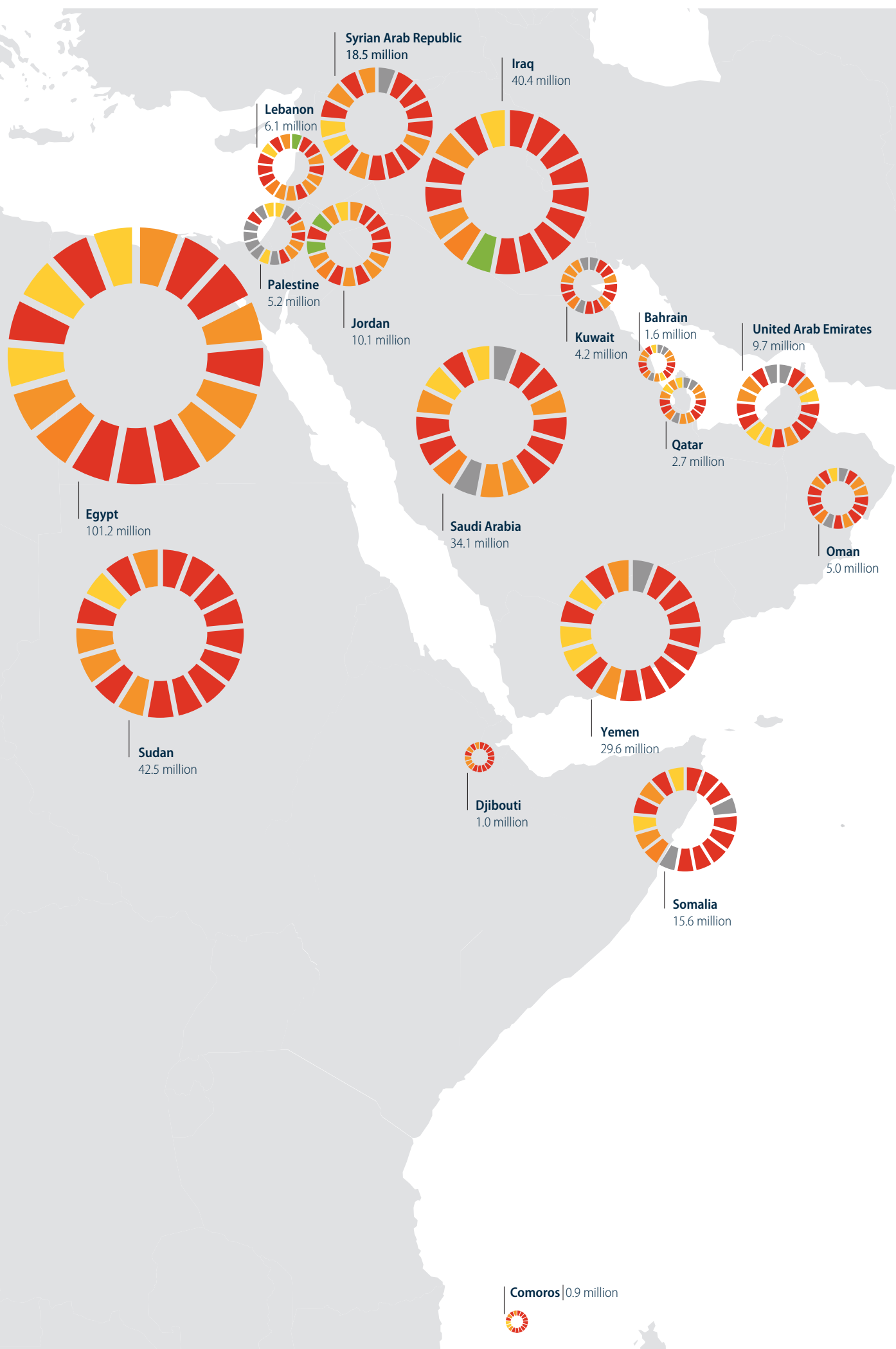


Table 2 | SDG Achievement, GDP Per Capita and the Human Development Index in the 22 Arab countries

Country	2019 Arab SDG Index score	Arab SDG Index rank	GDP per capita (PPP) 2018, US\$	GDP per capita rank	Human Development Index score 2017	Human Development Index rank
Algeria	66.69	1	15,622	9	0.754	8
United Arab Emirates	66.17	2	74,943	2	0.863	1
Morocco	65.77	3	8,587	14	0.667	15
Tunisia	65.33	4	12,484	11	0.735	10
Jordan	65.28	5	9,348	13	0.735	9
Lebanon	63.09	6	13,058	10	0.757	7
Oman	62.84	7	41,435	6	0.821	5
Egypt	61.59	8	12,390	12	0.696	12
Kuwait	61.08	9	73,705	3	0.803	6
Qatar	60.57	10	126,598	1	0.856	2
Bahrain	59.82	11	47,220	5	0.846	4
Saudi Arabia	59.72	12	55,120	4	0.853	3
Iraq	55.49	13	17,510	8	0.685	14
Libya	53.90	14	20,706	7	0.706	11
Mauritania	52.75	15	4,190	17	0.52	17
Sudan	52.11	16	4,759	16	0.502	19
Syrian Arab Republic	51.86	17	n/a	n/a	0.536	16
Djibouti	51.04	18	2,744*	19	0.476	20
Comoros	48.26	19	2,828	18	0.503	18
Yemen	46.89	20	2,571	20	0.452	21
Somalia	43.41	21	n/a	n/a	n/a	n/a
Palestine	n/a	n/a	5,148	15	0.686	13

Sources: GDP per capita data from World Bank World Development Indicators and HDI data from UNDP, retrieved in October 2019.

* GDP per capita data for Djibouti is for 2011 (latest available year).

Most new indicators were added to SDGs 16 (Peace, Justice and Strong Institutions), SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth) and SDG 12 (Responsible Consumption and Production). The new indicators under SDG 16 measure conflict and instability, including related negative consequences. They also measure the protection of human rights and funds spent on imports of major conventional weapons. Under SDG 5, the Arab Index adds indicators that measure gender-based

income equality, women married before the age of 15, female ministers and duration of maternity leave.

Under SDG 8, the indicators draw attention to youth unemployment, enabling environments for businesses, diversification of exports and labour freedom. New indicators under SDG 12 add depth to understanding how Arab countries manage their natural resources and waste, including through per capita fossil fuel pre-tax subsidies,



Table 3 | Arab Countries' Performance on the New Indicators

[illegible]

the quality of natural resource governance and compliance with major multilateral environmental agreements on hazardous waste and other chemicals.

In addition, the 2019 Arab Region Index adds indicators that complement the picture with regionally-relevant indicators, including on SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 6 (Clean Water and Sanitation) and SDG 7 (Affordable and Clean Energy). These include diabetes prevalence, pre-primary and tertiary school enrolment, student test achievement, implementation of Integrated Water Resources Management, renewable energy generation and energy intensity.

Data Gaps

Due to insufficient data coverage, several indicators from the 2019 Global Index are not included in the 2019 Arab Index. These include prevalence of modern slavery (SDG 8), The Times Higher Education Universities Ranking (SDG 9), access to an improved water source among urban populations (SDG 11) and development assistance and government revenue (SDG 17). Other areas excluded due to low data availability are protected freshwater sites and deforestation (SDG 15).

At the goal level, the most significant data gaps are currently found in data on SDG 1 (No Poverty) and SDG 10 (Reduced Inequalities). In both areas, the gaps are the result of lack of data on income and wealth distribution. In order to enable at least some of the region's countries to receive a Goal-level score on SDGs 1 and 10, the Index includes data for poverty headcount and the Gini coefficient despite low coverage (13 countries and 15 countries out of 22, respectively).

Data availability on statistical capacity, measured by the World Bank's capacity score is also low (16 countries covered). This composite indicator assesses the capacity of a country's statistical system in three areas: methodology,

data sources, and periodicity and timeliness. It highlights the important role of statistical offices in supporting SDG implementation (also discussed in a case study in section 2.6 of this report). For the six Least Developed Countries (LDCs) in the Arab region, there is an extremely high correlation between SDG achievement and statistical capacity (0.94), reminding both governments and development partners of the need to provide support to building statistical capabilities in these countries.

Despite an extensive search, no publicly-available regional datasets were identified in the process of developing the 2019 Arab Region SDG Index. As a result, all new indicators rely on global datasets, many of which have important gaps for the Arab region and do not include data for Palestine. Indeed, there are also major gaps in data availability for Palestine – the 2019 Arab Index only has data for 55% of the indicators for the country.

Regional databases, including by the Arab Development Portal and Islamic Development Bank, were found to contain either data from international databases or from national statistical offices (with data from the latter not being comparable across countries).

Subregional databases, such as GCC-Stat, in turn, only contain data for a smaller number of countries. Some of the data made available by specialised regional agencies, including in the areas of agriculture and water, was found to be outdated. Opinion surveys, including the Arab Barometer and the Arab Youth Survey, either do not cover all Arab countries or disclose scarce information about their methodologies.

The Arab region should urgently invest more attention and resources to generating and making available data in the areas outlined above. This will be essential for enabling not only for tracking of SDG performance but also data-driven, science-based planning and decision-making.



1.3. 2019 Arab Region SDG Dashboards

The 2019 Arab Region SDG Dashboards present an analysis of Arab countries' current situation relating to SDG achievement. The Arab Region SDG Dashboards use the same data as the Arab Region SDG Index after censoring and rescaling (see section 5 for a detailed explanation). A green colour indicates achievement of an SDG, yellow indicates challenges remaining, orange significant challenges remaining and red major challenges remaining.

In addition, the Dashboards present trends both at SDG and indicator level: an arrow sign indicates whether a country is on track or maintaining achievement (green), moderately increasing its performance (yellow), on a flat trajectory (orange) or decreasing/declining in performance (red).

The Arab Region

As indicated in the following dashboard, many Arab countries still face major challenges in achieving the SDGs. On SDG 2 (Zero Hunger) and SDG 5 (Gender Equality), all countries measured have a red score. In addition, two-thirds or more countries receive a red score on SDGs 3 (Good Health and Well-being), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 8 (Decent Work and Economic Growth), 9 (Industry, Innovation and Infrastructure), 14 (Life below Water) and 16 (Peace, Justice and Strong Institutions). There is only one SDG on which no country in the region scores red – SDG 17 (Partnerships for the Goals).

Fifty-one percent of all SDGs for all Arab countries are in red, 29% are in orange, 12% in yellow and only 1% in green. For 7% of the SDGs, it was not possible to generate a dashboard colour due to insufficient data availability. Eight countries have ten or more SDGs in red.

As for trends in SDG achievement, several Arab countries are on track to achieving SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action), while there are moderate increases in performance across several SDGs, including on SDGs 3, 7 and 9.

For the purposes of this Dashboard analysis, the Arab region was divided into four sub-regions based on income status and geographic location. Of these sub-regions, North Africa has the highest average SDG Index score (63), followed by the Gulf Cooperation Council countries (62), the Levant and Iraq (59) and the Least Developed Countries (49). The analysis on the next pages follows this order.

Figure 3 | SDG Dashboard for the Arab Region

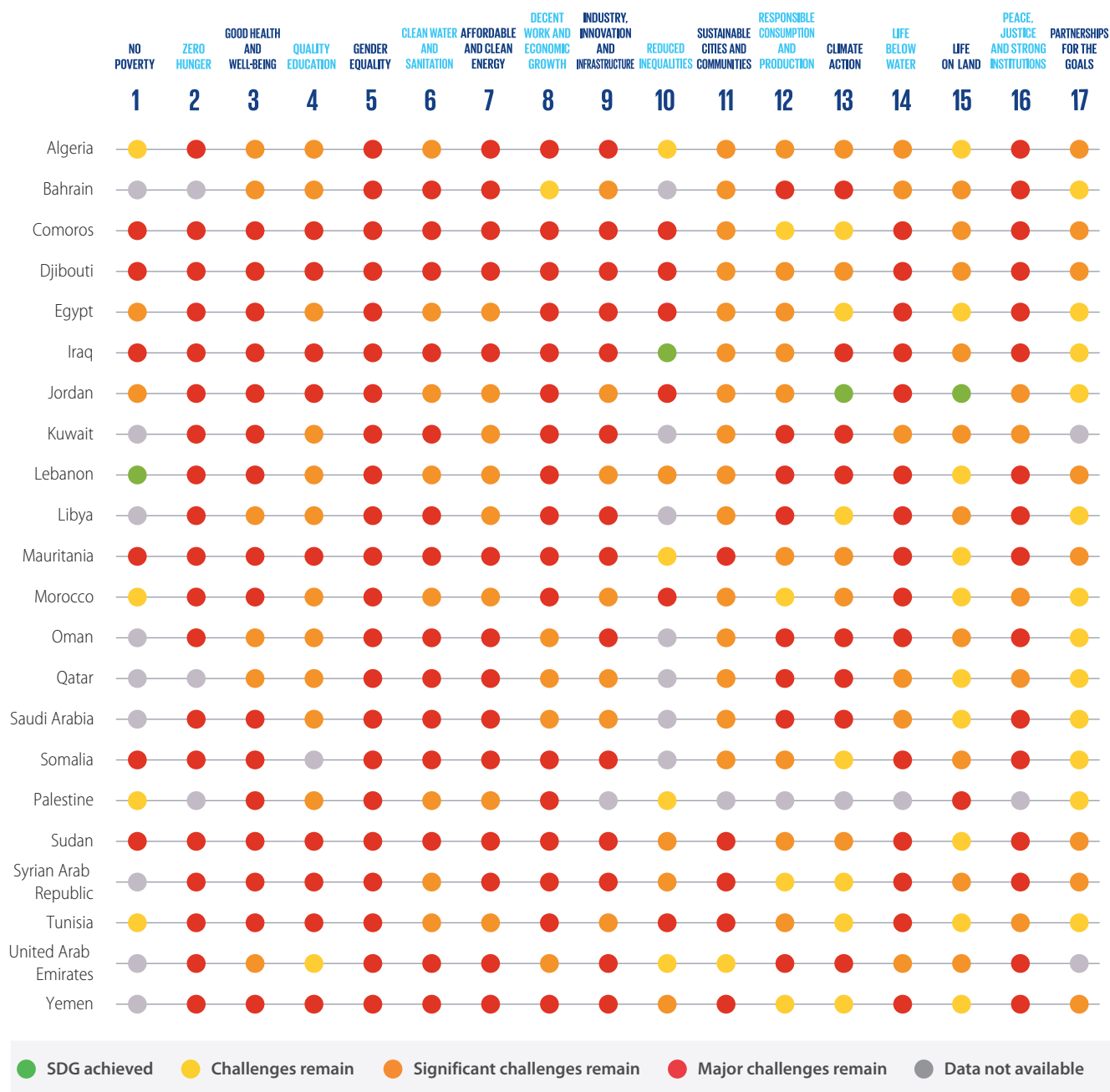


Figure 4 | SDG Trend Dashboard for the Arab Region

	NO POVERTY	ZERO HUNGER	GOOD HEALTH AND WELL-BEING	QUALITY EDUCATION	GENDER EQUALITY	CLEAN WATER AND SANITATION	AFFORDABLE AND CLEAN ENERGY	DECENT WORK AND ECONOMIC GROWTH	INDUSTRY, INNOVATION AND INFRASTRUCTURE	REDUCED INEQUALITIES	SUSTAINABLE CITIES AND COMMUNITIES	RESPONSIBLE CONSUMPTION AND PRODUCTION	CLIMATE ACTION	LIFE BELOW WATER	LIFE ON LAND	PEACE, JUSTICE AND STRONG INSTITUTIONS	PARTNERSHIPS FOR THE GOALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Algeria	↗	→	↗	↗	↗	↗	↗	→	↗	..	↗	..	→	→	↗	↗	↗
Bahrain	..	..	↗	↗	→	↑	↗	↗	→	..	→	..	↑	↗	↓	→	..
Comoros	→	→	→	↓	→	↓	↗	↗	→	..	→	..	↑	↓	↓	↗	↓
Djibouti	↑	→	→	→	↗	→	→	→	↑	..	↓	..	↑	↓	↓	→	↑
Egypt	↗	↗	↗	↗	→	↗	↗	↗	↗	..	→	..	↑	→	↗	→	↑
Iraq	↗	→	→	..	→	↗	↗	→	→	..	→	..	→	→	↓	→	↓
Jordan	→	→	↗	↓	→	↑	↗	→	↗	..	↗	..	↑	→	↑	↗	→
Kuwait	..	↗	↗	→	→	↑	→	↗	↗	..	↓	..	↗	↓	→	→	..
Lebanon	↑	→	↗	↗	→	↑	↗	→	↗	..	↓	..	↑	→	↗	→	↓
Libya	..	↓	→	..	→	↗	↗	→	→	..	↓	..	↗	→	↗	↓	↗
Mauritania	↑	↓	→	→	→	↗	↗	→	→	..	↓	..	↑	→	↗	→	↓
Morocco	↗	→	↗	→	↗	↑	↗	→	↗	..	→	..	↑	→	↓	↗	↓
Oman	..	→	↑	↗	→	↑	↗	↗	↗	..	↓	..	↗	→	↓	↗	..
Qatar	..	..	↗	↗	↗	↑	↗	↗	↗	..	↓	..	↓	→	↓	↗	..
Saudi Arabia	..	→	↗	↗	↓	↑	↗	↗	↑	..	→	..	↓	→	↗	↓	..
Somalia	→	→	→	..	↗	↓	→	↗	→	..	↓	..	↑	→	↓	→	↗
Palestine	→	..	↗	↗	→	→	↗	→	..	..	..	..	..	..	..	..	↓
Sudan	↓	↗	↗	→	→	→	↗	↗	↗	..	↓	..	↑	↗	↑	↗	↑
Syrian Arab Republic	..	↓	↗	↓	↓	→	→	↗	→	..	↓	..	↓	→	↗	→	↓
Tunisia	↗	↗	↗	→	→	↑	↗	→	→	..	↓	..	↑	→	↗	↗	↓
United Arab Emirates	..	↗	↗	↗	→	↑	↗	↑	↑	..	→	..	↓	↗	→	↗	..
Yemen	..	↓	→	→	→	↑	→	→	↗	..	↗	..	↑	→	↓	↓	↓

↑ On track or maintaining SDG achievement ↗ Moderately Increasing → Stagnating ↓ Decreasing .. Data not available

North Africa

The three most challenging SDGs for Algeria, Egypt, Libya, Morocco and Tunisia are SDG 2 (Zero Hunger), SDG 5 (Gender Equality), and SDG 8 (Decent Work and Economic Growth). On SDG 2, all five countries score red on the obesity indicator. In addition, major challenges remain in indicators of sustainable agriculture (nitrogen management) in Algeria, Morocco and Tunisia, and nutrition (stunting among children) in Egypt and Libya. On SDG 5, all five countries score red in female to male labour force participation and income ratios. Other challenging areas include women's participation in top-levels of decision-making (proportion of ministerial positions), marriage among girls under 15 years of age (Morocco scoring red) and maternity leave (Tunisia scoring red), among others.

Although challenges remain, Arab countries of Northern Africa score better on two environmental SDGs, namely SDG 13 (Climate Action) and SDG 15 (Life on Land), as well as SDG 17 on (Partnerships for the Goals). There are also less challenges on SDG 1 (No Poverty). There is a wide difference between the overall SDG performance of the highest-performing country in the group (Algeria, Index score of 67) and the lowest-performing country (Libya, Index score of 54).

The Trends Dashboard indicates a rising trend on two SDGs for Morocco and Tunisia, namely SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action). Trends in the subregion are deteriorating on SDGs 2, 11 (Sustainable Cities and Communities), SDG 15, 16 (Peace, Justice and Strong Institutions) and 17.

Figure 5 | SDG Dashboard for North Africa

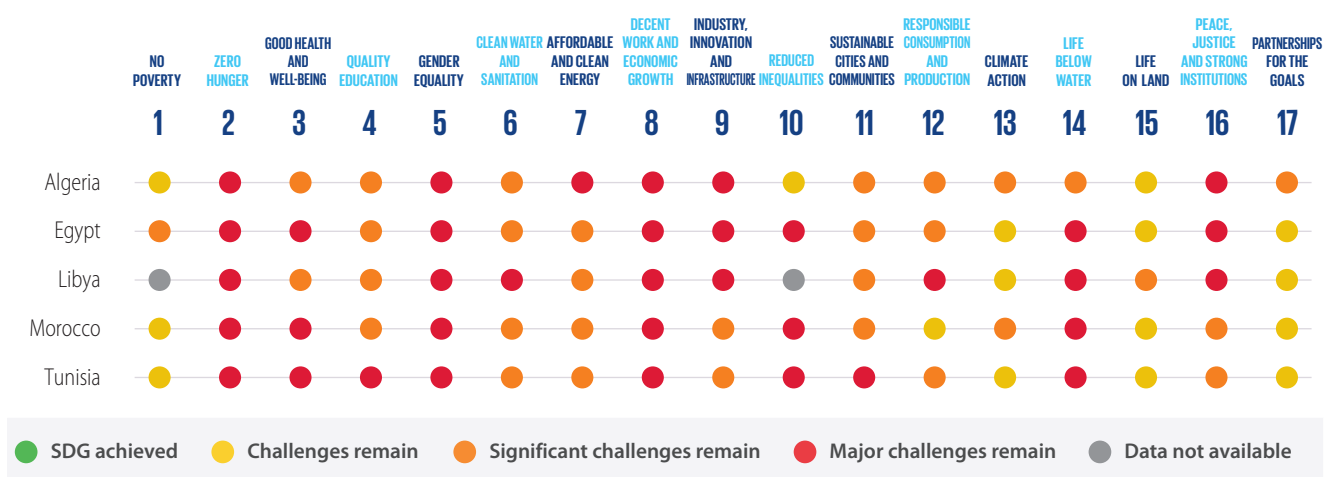


Figure 6 | SDG Trend Dashboard for North Africa



Gulf Cooperation Council

The six Gulf Cooperation Council (GCC) member countries, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE), face major challenges on SDGs 5 (Gender Equality), 6 (Clean Water and Sanitation), 12 (Responsible Consumption and Production) and 13 (Climate Action). Significant data gaps in SDGs 1 (Zero Poverty) and 10 (Reduced Inequalities) complicate assessing these countries' performance on these social equity-related SDGs. Other major data gaps at SDG level are found in SDG 2 (Zero Hunger) and SDG 17 (Partnerships for the Goals). The most important indicator-level data gaps include ones related to children and youth: stunting and wasting; marriage among girls below the age of 15; child labour; and birth registrations with a civil authority.

On SDG 5, all GCC countries score red on female-male income ratios and duration of maternity leaves. All except the UAE score red also on shares of women parliamentarians and ministers. On SDG 6, GCC countries perform well on several indicators (sanitation and drinking water services

and safety), but score red on freshwater withdrawal rates and imported groundwater depletion, which results in a red SDG-level score for all six countries.

On SDG 12, GCC countries' SDG performance is held back by red scores on municipal and electronic waste generation rates and fossil fuel subsidies. On SDG 13, the six countries face major challenges due to high per capita carbon dioxide emissions from energy consumed and exported. In imported emissions and climate vulnerability, most GCC countries score green, however.

The GCC countries perform better on SDGs 4 (Quality Education), 11 (Sustainable Cities and Communities) and 15 (Life on Land) where no country scores in red.

Despite the current challenges, the Trends Dashboard shows that all six countries are on track to achieving SDG 6. Positive trends are also visible on SDGs 3 (Good Health and Well-being), 4, 7 (Affordable and Clean Energy), 8 (Decent Work and Economic Growth) and 9 (Industry, Innovation and Infrastructure).

Figure 7 | SDG Dashboard for the Gulf Cooperation Council

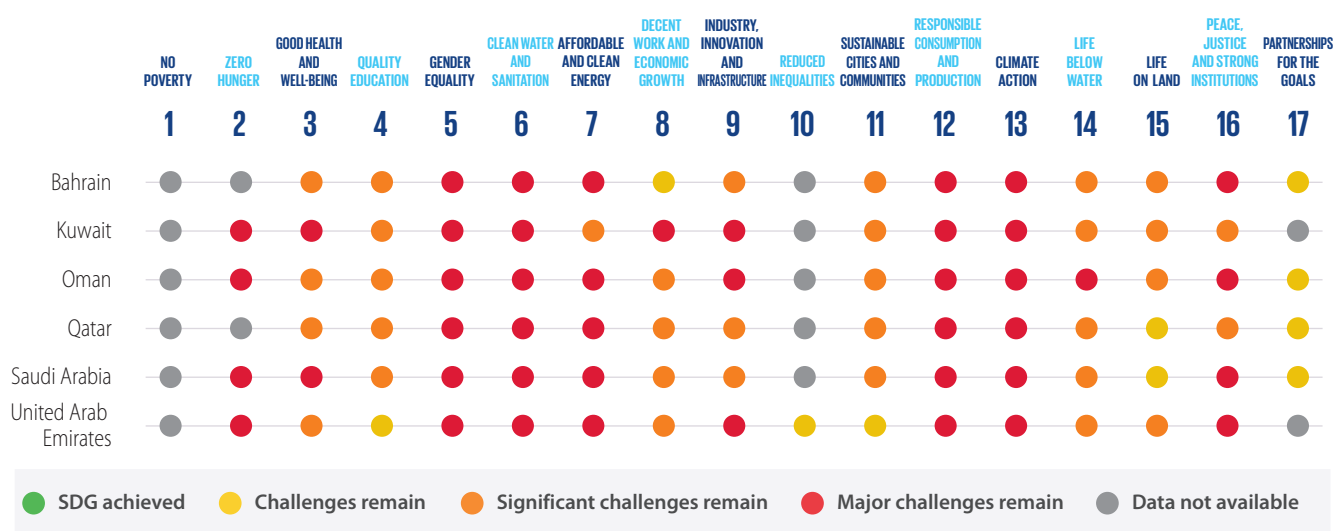


Figure 8 | SDG Trend Dashboard for the Gulf Cooperation Council



Levant and Iraq

The five Levantine countries (Jordan, Lebanon, Palestine and Syrian Arab Republic) and Iraq are the only group with green goals in the SDG Dashboard. Jordan scores green on SDGs 13 (Climate Action) and 15 (Life on Land), Lebanon receives a green score on SDG 1 (No Poverty) and Iraq scores a green for SDG 10 (Reduced Inequalities).

However, all five have red scores on SDGs 3 (Good Health and Well-being), 5 (Gender Equality) and 8 (Decent Work and Economic Growth). Most challenges on these three SDGs relate to subjective wellbeing and traffic deaths (SDG 3), female labour force participation and income in relation to males, and share of women ministers (SDG 5), and bank account ownership, economic growth and unemployment (SDG 8).

Among the countries of the Levant and Iraq, there is a significant difference between the highest-performing country overall (Jordan, Index score of 65) and the lowest-performing country (Syria, Index score of 52). The lack of sufficient data in international databases, indices and major studies presents important challenges for measuring Palestine's SDG performance: the country only receives an SDG dashboard colour for 10 out of 17 SDGs.

The Trends Dashboard presents a similarly mixed picture for the subregion where some countries are improving on some SDGs while others' performance is declining. Overall, performance among the Levantine countries and Iraq is declining on SDG 17 (Partnerships for the Goals) and stagnating on SDGs 2 (Zero Hunger), 5, 8 and 14 (Life below Water).

Figure 9 | SDG Dashboard for Levant and Iraq

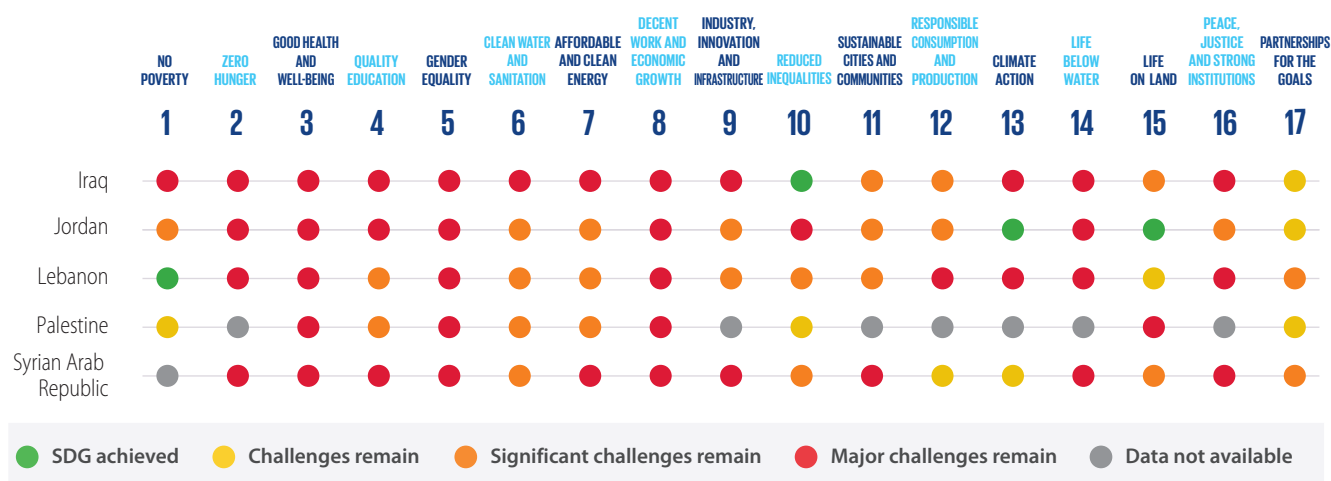


Figure 10 | SDG Trend Dashboard for Levant and Iraq



Least Developed Countries

The six Arab Least Developed Countries (LDCs), Comoros, Djibouti, Mauritania, Somalia, Sudan and Yemen, are in danger of being left behind. All countries receive a red score for *all* SDGs from 1 through 9, as well as SDGs 14 and 16. (Data are missing for Yemen on SDG 1 and Somalia on SDG 4.) These SDGs cut across all major areas of sustainable development and are a clarion call for increased regional and global attention to the major challenges these countries face in providing well-being and prosperity for their populations.

On SDGs 12 (Responsible Consumption and Production), 13 (Climate Action), 15 (Life on Land), and SDG 17 (Partnerships for the Goals), the six countries score either yellow or orange.

Bright spots in the Arab LDCs' SDG performance at indicator level include high or moderate levels of performance on: obesity (SDG 2); HIV prevalence (SDG 3); fatal work-related accidents embodied in imports (SDG 8); electronic and municipal waste, and sulfur dioxide emissions (SDG 12); per capita carbon dioxide emissions from energy consumed, imported and exported (SDG 13); imported biodiversity threats (SDG 15); and weapons imports and exports (SDG 16).

All Arab LDCs are well on track to achieving SDG 13. On other SDGs, trends are less uniform, with some countries presenting improved and other deteriorating trends. On SDGs 11 (Sustainable Cities and Communities) and 15 (Life on Land), trends are deteriorating in four countries of the group.

Figure 11 | SDG Dashboard for the Least Developed Countries

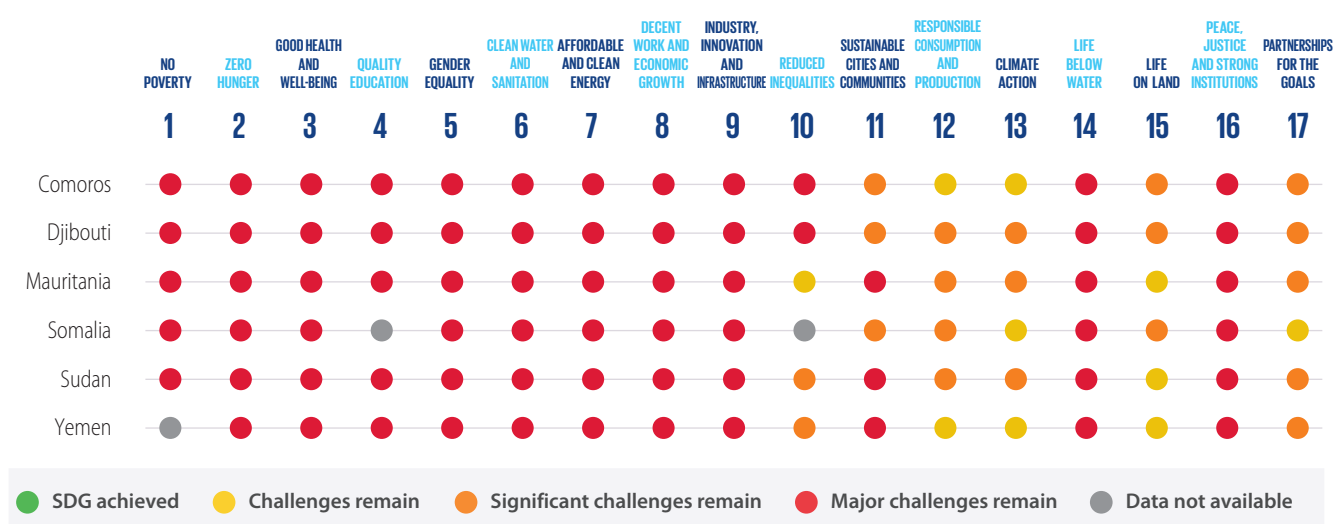


Figure 12 | SDG Trend Dashboard for the Least Developed Countries



PART 5

METHODOLOGY



PART 5

Methodology

The 2019 Arab Region SDG Index and Dashboards Report describes the Arab region countries' progress towards achieving the SDGs and indicates areas requiring faster progress. The report uses the most recent data available that have been aligned as closely as possible with official SDG indicators.

The SDG Index score and scores by goal can be interpreted as a percentage of achievement. The difference between 100 and countries' scores is therefore the distance in percentage that needs to be completed to achieving the SDGs and goals. The same basket of indicators is used for all countries to generate comparable scores and rankings. It should be noted that differences in rankings may be due to small differences in the aggregate score.

The SDG Dashboards (see sections 1.3 and 3) provide a visual representation of countries' performance by SDGs to identify priorities for action. The 'traffic light' colour scheme (green, yellow, orange and red) illustrates a country's current status for a particular goal. A green rating denotes SDG achievement and is assigned to a country on a given SDG only if all the indicators under the goal are rated green. Yellow, orange and red indicate increasing distance from SDG achievement.

The SDG Trends Dashboards (also in sections 1.3 and 3) indicate whether a country is on track to achieve a particular goal by 2030 based on recent past performance of a given indicator. Indicator trends are then aggregated at the goal level to give a trend indication of how the country is progressing in the goal overall.

To ensure pertinence to the Arab region, several methodological changes have been made to this report relative to the global SDG Index and Dashboards:

- **Additional indicators fill gaps and capture issues particular to the Arab region context.**
- **A number of indicators from the 2019 global SDG Index were removed due to insufficient data coverage and two were replaced with indicators with better data coverage for the region.**
- **In four cases, indicator thresholds were revised based on feedback received in expert consultations.**
- **For Arab region-specific indicators, the same methodology was used to create the upper bound as in the global Index (see sections 5.3 and 5.4).**

As a result of these significant changes, it is not possible to directly compare the results of the Arab Region SDG Index and Dashboards with results in the global Sustainable Development Report (formerly the Global SDG Index report).

Table 4 | Changes in the 2019 Arab Region SDG Index Compared to the 2019 Global SDG Index

SDG	Indicator	Change
SDG 1	Working poor at PPP\$3.10 a day (% of total employment)	New indicator
SDG 3	Diabetes prevalence (% of population ages 20 to 79)	New indicator
	Age-standardized suicide rates (per 100 000 population)	New indicator
SDG 4	Net primary enrolment rate (%)	Change in threshold (green lowered from 98 to 95)
	Literacy rate of 15–24 year olds, both sexes (%)	Change in threshold (red lowered from 85 to 80)?
	Gross enrolment ratio, pre-primary (% of preschool-age children)	New indicator
	School enrollment, tertiary (% gross)	New indicator
	Harmonized Test Scores	New indicator
SDG 5	Ratio of female to male labour force participation rate	Change in threshold (green raised from 70 to 75)
	Ratio of estimated gross national income per capita, female/male (2011 PPP \$)	New indicator
	Women aged 20 to 24 years who were first married or in union before age 15 (%)	New indicator
	Proportion of women in ministerial positions (%)	New indicator (also in 2019 Africa Index)
	Mandatory paid maternity leave (days)	New indicator
SDG 6	Degree of integrated water resources management implementation (%)	New indicator
	Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (per 100,000 population)	New indicator
SDG 7	Renewable electricity output (% of total electricity output)	New indicator
	Energy intensity level of primary energy (MJ/\$2011 PPP GDP, average of 5 years)	New indicator
SDG 8	Prevalence of Modern Slavery (victims per 1,000 population)	Excluded (insufficient coverage)
	Labour freedom score	New indicator
	Unemployment, youth total (% of total labor force ages 15–24)	New indicator
	Ease of starting a business score	New indicator (also in 2019 Africa Index)
	Product concentration index, exports	New indicator
SDG 9	The Times Higher Education Universities Ranking: Average score of top 3 universities (0–100)	Excluded (insufficient coverage)
	Carbon dioxide emissions per unit of manufacturing value added (kilogrammes of CO ₂ per constant 2010 US\$)	New indicator
SDG 11	Improved water source, piped (% urban population with access)	Excluded (insufficient coverage)
SDG 12	Net imported emissions of reactive nitrogen (kg/capita)	Excluded (insufficient coverage)
	Municipal Solid Waste (kg/day/capita)	Excluded (replaced)
	Total municipal solid waste generated (kgs/year/capita)	New indicator
	Value realization score (Resource Governance Index)	New indicator
	Fossil-fuel pre-tax subsidies (consumption and production) per capita (current US\$)	New indicator
	Compliance with multilateral environmental agreements on hazardous waste and other chemicals (%)	New indicator
SDG 14	Percentage of Fish Stocks overexploited or collapsed by EEZ (%)	Excluded (replaced)
	Ocean Health Index Goal – Fisheries (0–100)	New indicator
SDG 15	Mean area that is protected in freshwater sites important to biodiversity (%)	Excluded (insufficient coverage)
	Permanent Deforestation (5 year average annual %)	Excluded (insufficient coverage)
SDG 16	Children 5–14 years old involved in child labour (%)	Change in threshold (green raised from 2 to 0)
	Battle-related deaths (per 100,000 population, average of 5 years)	New indicator (also in 2019 Africa Index)
	Prison population (per 100,000 persons)	New indicator (also in global Index for OECD)
	Imports of major conventional weapons (TIV constant 1990 US\$ million per 100,000 population, 5 year average)	New indicator
	Status of fundamental human rights treaties	New indicator
	Political stability and absence of violence/terrorism	New indicator
SDG 17	For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% GNI); other countries: Government Revenue excluding Grants (% GDP)	Excluded (insufficient coverage)
	Statistical capacity score	New indicator (also in 2019 Africa Index)



5.1. Comparison between the 2019 SDG Index Arab Region and Global Editions

The 2019 Arab Region SDG Index incorporates several changes to the indicators included in the 2019 global Sustainable Development Report (the Global SDG Index report). These are presented in detail in Table 4.

The 2019 Arab Region SDG Index contains a total of 105 indicators, of which 75 indicators originate from the 2019 global SDG Index. The Arab Region Index also contains four indicators that are featured in the 2019 Africa SDG Index but not in the global Index. Data for all these indicators was extracted between February and April 2019. For the 26 completely new indicators, data was extracted in July 2019.

A minimum coverage of 75% was set as the starting point for selecting indicators for the 2019 Arab Region SDG Index. Countries with a population of less than one million in 2019 (Comoros and Djibouti) were not considered when calculating coverage. The same applied to Palestine given low data availability for the country (55% of all indicators in the 2019 Arab SDG Index). In other words, for inclusion, an indicator had to provide recent data for at least 14–15 out of the 19 other Arab countries. Exceptions to this rule are listed in Table 5.

Table 5 | Indicators Included in the 2019 Arab Region SDG Index Despite Lower Data Coverage

SDG	Indicator	Justification
SDG 5	Women aged 20 to 24 years who were first married or in union before age 15 (%)	Relevance for the region
SDG 16	Children 5–14 years old involved in child labour (%)	Relevance for the region; main coverage gap in GCC countries
SDG 16	Battle-related deaths (per 100,000 population, average of 5 years)	Relevance for the region; available data broadly covers main conflicts
SDG 17	Government Health and Education spending (% GDP)	Relevance for the region; enabling more robust dashboard results for SDG 17
SDG 17	Statistical capacity score	Relevance for the region

5.2. Data Selection

5.2.1. Criteria for Indicator Selection

Where possible, the 2019 Arab Region SDG Index and Dashboards uses official SDG indicators endorsed by the UN Statistical Commission. Where insufficient data is available for an official indicator, and to close data gaps, other metrics from official and unofficial sources are included. Five criteria for indicator selection were used to determine suitable metrics for each SDG.

- 1. Global relevance and applicability to a broad range of country settings:** The indicators are relevant for monitoring achievement of the SDGs and applicable to the entire continent. They are internationally comparable and allow for direct comparison of performance across countries. In particular, they allow for the definition of quantitative performance thresholds that signify SDG achievement.
- 2. Statistical adequacy:** The indicators selected represent valid and reliable measures.
- 3. Timeliness:** The indicators selected are up to date and published on a reasonably prompt schedule.
- 4. Data quality:** Data had to be harmonised according to international standards, whether derived from official national or international sources (e.g. national statistical offices or international organisations) or other reputable sources, such as peer-reviewed publications or academia.
- 5. Coverage:** Data had to be available for at least 75% of the Arab Region countries with a national population greater than 1 million. We excluded small countries (2) in the indicators selection process because data tend to be scarce for these countries, which in turn makes it more difficult to include new indicators given our precise data coverage requirement for adding additional indicators. In addition, we did not consider the Palestine in the indicator selection process due to low data availability for the country (55% of indicators currently included in the Arab SDG Index).

5.2.2. Indicator Selection

The SDG Index was built on a set of indicators for each of the 17 SDGs using the most recent published data. We included all of the more than 230 SDG indicators proposed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and endorsed by the UN Statistical Commission that met the five criteria above (UNSD 2019a). Some official SDG indicators have adequate data coverage but could not be included as they did not permit a ranking of countries or the definition of a quantitative threshold signifying achievement of the goals applicable to all countries. For example, different countries specialise in different sectors of the economy, so there is no 'right' threshold of manufacturing as a share of GDP for which all countries should aim. While individual countries may find the share of manufacturing value added highly useful for developing long-term strategies for industrialisation, it is not possible to define a common threshold for the SDGs. Other official SDG indicators are similarly useful at the country level but cannot serve as a yardstick for comparing countries' performance internationally.

Where official SDG indicators did not meet the criteria for data selection or where indicator gaps remained, we considered official and other metrics published in the peer-reviewed literature, as well as major databases and reports on development and environmental indicators.²

5.2.3. Missing Data and Imputations

The purpose of the 2019 Arab Region SDG Index and Dashboards is to guide countries' discussions of their SDG priorities today based on available and robust data. For this reason, and since many SDG priorities lack widely-accepted statistical models for imputing country-level data, we generally did not impute or model any missing data. We made exceptions for the following variables, many of which would otherwise not have been included because of excessive missing data:

2. These included: World Bank, World Development Indicators; UNDP, Human Development Report; OECD, OECD Statistics; Kroll, Sustainable Development Goals: Are the Rich Countries Ready? (2015); SDSN, Indicators and a Monitoring Framework for Sustainable Development Goals - Launching a Data Revolution for the SDGs (2018).



- **SDG 1:** Poverty headcount ratio at \$1.90/day (% population): Data was not reported for those countries where no survey data was available.
- **SDG 1:** Poverty headcount ratio at \$3.20/day (% population): Data was not reported for those countries where no survey data was available.
- **SDG 3:** New HIV infections (per 1,000): Values from IHME's Global Burden of Disease Study (2017) were imputed when countries were missing empirical data in UNAIDS.
- **SDG 5:** Demand for family planning satisfied by modern methods (% women married or in unions, ages 15-49): Modelled estimates from the UN Population Division were imputed for countries with missing empirical datapoints.
- **SDG 9:** Research and development (R&D) expenditure (% of GDP): We assumed zero R&D expenditure for low-income countries that did not report any data for this variable.
- **SDG 10:** Gini coefficient adjusted for top income (1-100): We imputed the World Bank Gini coefficients for those countries missing data on the adjusted Gini coefficient from Brookings.
- **SDG 12:** Value realization score: This component of the Resource Governance Index (RGI) only contains data for Arab countries with oil and gas and/or mining sectors. In cases where both sectors were assessed by the RGI (Tunisia), the average score across sectors was calculated.
- **SDG 16:** Exports of major conventional weapons (TIV constant 1990 US\$ million per 100,000 population, 5-year average): We assumed a value of 0 for countries with unreported export data and from which there are no major companies that produce weapons.
- **SDG17:** Tax Haven Score (best 0-5 worst): We imputed a value of 0 for all countries without data on this indicator.

To reduce missing data biases in the computation of the Arab Region SDG Index, we imputed missing goal scores using the regional mean. This applies primarily to Goal 1 (No Poverty) and Goal 10 (Reduced Inequalities). Imputed goal scores are used solely for the computation of the index, and they are not reported in the SDG Dashboards or country profiles.

Since the Arab Region SDG Index compares countries, it is important to avoid excessive bias through missing data. The Index therefore only includes countries that have data for at least 75% of the indicators used. In this report, only one out of the 22 countries in the Arab region (Palestine) could not be included in the index ranking due to insufficient data availability (55%). Investing in countries' capacities to generate high-quality and regular data is a priority for establishing better SDG monitoring in order to inform policy priorities and resource allocation. Although Palestine is not ranked in the Index, more detailed information about the country is available in its respective country profile and dashboard.

For more details, the raw data included in the construction of the 2019 Arab Region SDG Index and Dashboards is available for download on <https://sdgindex.org/>

5.3. Index Method

The procedure for calculating the SDG Index comprised three steps: (1) censoring extreme values from the distribution of each indicator; (2) rescaling the data to ensure comparability across indicators; and (3) aggregating the indicators within and across SDGs.

5.3.1. Addressing Extreme Values and Rescaling

To make the data comparable across indicators, each variable was rescaled from 0 to 100 with 0 denoting worst performance and 100 describing the optimum. Rescaling takes into account limits and extreme values (outliers) at both tails of the distribution. The latter may become unintended thresholds and introduce spurious variability in the data. Consequently, the choice of upper and lower bounds can affect the relative ranking of countries in the index.

Where global indicators were retained for the Arab Region SDG Index, the same upper bounds from the global SDG Index were retained for those indicators. For newly-added Arab region-specific indicators, we defined new upper and lower bounds.

The upper bound for each indicator was determined using a four-step decision tree:

1. **Use absolute quantitative objectives in the goals and targets:** e.g. zero poverty, universal school completion, universal access to water and sanitation, or full gender equality. For example, the optimal bound for women parliamentarians is 50%, representing gender parity. Some SDG targets propose relative changes (such as Target 3.4: [...] reduce by one third premature mortality from non-communicable diseases [...]) that cannot be translated into a global snapshot today. Such targets are addressed through Step 4 below.
2. **Where no explicit SDG target is available, apply the principle of 'leave no one behind' to set upper bound to universal access (corresponding to an optimal value of 100) or zero deprivation for the following types of indicators:**
 - a. Measures of extreme poverty (e.g. wasting), consistent with the SDG ambition to end extreme poverty in all its forms ('leave no one behind')
 - b. Public service coverage (e.g. access to contraception)
 - c. Access to basic infrastructure (e.g. mobile phone coverage or wastewater treatment)

3. **Where science-based targets exist that must be achieved by 2030 or later, use these to set 100% upper bound:** e.g. zero net GHG emissions by 2050 to stay below 1.5°C of global average temperature increase compared to the pre-industrial era, or 100% sustainable management of fisheries.
4. **For all other indicators, use the average of the top performers.** The average of the top 5 performers on the indicator is used for setting the upper bound.

These principles interpret the SDGs as 'stretch targets' and focus attention on the indicators where a country is lagging behind. Each indicator distribution was censored, so that all values exceeding the upper bound scored 100, and values below the lower bound scored 0.

In some cases, the upper bound exceeded the thresholds to be met by 2030 in order to achieve the SDGs. For example, the SDGs call for reducing child mortality to no more than 25 per 1000 live births, but some Arab region countries have already exceeded this threshold. By defining the upper bound as the 'best' outcome (e.g. 0 mortality per 1,000)—rather than the SDG achievement threshold—the SDG Index rewards improvements across the full distribution. This is particularly important for countries that have already achieved some SDG thresholds but still lag behind other countries on this metric. Some countries have already exceeded the upper bound of some indicators today and more will do so in the coming years as the world progresses towards the SDGs.

To remove the effect of extreme values, which can skew the results of a composite index. The Organisation of Economic Co-operation and Development recommends censoring the data at the bottom 2.5th percentile as the minimum value for the normalisation (OECD, EU and JRC 2008). We applied this approach to the lower bound and censored data at this level.



After establishing the upper and lower bounds, variables were transformed linearly to a scale between 0 and 100 using the following rescaling formula for the range [0; 100]:

$$x' = \frac{x - \min(x)}{\max(x) - \min(x)} \quad (\text{Eq.S1})$$

where x is raw data value; $\max/\min$ denote the bounds for best and worst performance, respectively; and x' is the normalised value after rescaling.

The rescaling equation ensures that all rescaled variables were expressed as ascending variables (i.e. higher values denoted better performance). In this way, the rescaled data became easier to interpret and compare across all indicators: a country that scores 50 on a variable is half-way towards achieving the optimum value; a country with a score of 75 has covered three quarters of the distance from worst to best.

To minimise the bias of missing data on the aggregate index score, when countries do not have any indicator values under a goal, the regional goal average is used for the purpose of calculating their index score.

5.4. Dashboard Method (Thresholds, Normalisation, Aggregation)

The Arab Region SDG Dashboards use the same data as the Arab Region SDG Index after censoring and rescaling. We introduced additional quantitative limits for each indicator to group countries in a 'traffic light' table. The overall dashboard ratings are based on the two indicators on which a country performed worst.

To assess a country's progress on a particular indicator, we considered four bands. The green band is bounded by the maximum that can be achieved for each variable (i.e. the upper bound) and the threshold for achieving the SDG. Three colour bands ranging from yellow to orange and red denote an increasing distance from SDG achievement. The upper and lower bounds are the same as for the Index described above.

5.4.1. Thresholds

For global indicators retained for the Arab Region SDG Dashboards, the green and red thresholds always remained the same as it equates to goal achievement, with four exceptions (see Table 4). Additional thresholds, both red and green, were established both by a combination of analysis of the data distribution and consultation with experts, including SDSN members and via the SGDCAR's network.

All thresholds were specified in absolute terms and apply to all countries. Thanks to this approach, the Arab Region SDG Dashboards exposes more granularity of performance levels between countries and serves as a useful benchmarking tool for Arab countries.

A full list of the thresholds used in the 2019 Arab Region SDG Index and Dashboards is presented in Table 6.

The SDGCAR held two expert consultations to seek inputs for, and feedback on, the indicator selection and thresholds. A public expert consultation in May 2019 sought to obtain suggestions on new indicators as well as validate the ones retained from the Global Index. The SDGCAR received more than 200 individual comments from more than 30 experts. The experts helped, among other things, in identifying new data sources and indicators with sufficient data coverage, and in finding new ways to measure SDGs and SDG Targets. A second, more targeted round of expert consultation was conducted in August 2019, which was used to validate the final indicator selection and thresholds for the dashboards.



Table 6 | Thresholds for Indicators Included in the 2019 Arab Region SDG Index and Dashboards

SDG	Indicator	Green threshold	Red threshold
1	Poverty headcount ratio at \$1.90/day (% population)	2	13
1	Poverty headcount ratio at \$3.20/day (% population)	2	13
1	Working poor at PPP\$3.10 a day (% of total employment)	2	13
2	Prevalence of undernourishment (% population)	7.5	15
2	Prevalence of stunting (low height-for-age) in children under 5 years of age (%)	7.5	15
2	Prevalence of wasting in children under 5 years of age (%)	5	10
2	Prevalence of obesity, BMI ≥ 30 (% adult population)	10	25
2	Cereal yield (t/ha)	2.5	1.5
2	Sustainable Nitrogen Management Index	0.3	0.7
2	Human Trophic Level (best 2–3 worst)	2.2	2.4
3	Maternal mortality rate (per 100,000 live births)	70	140
3	Neonatal mortality rate (per 1,000 live births)	12	18
3	Mortality rate, under-5 (per 1,000 live births)	25	50
3	Incidence of tuberculosis (per 100,000 population)	10	75
3	New HIV infections (per 1,000)	0.2	1
3	Age-standardised death rate due to cardiovascular disease, cancer, diabetes, and chronic respiratory disease in populations age 30–70 years (per 100,000 population)	15	25
3	Age-standardised death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	18	150
3	Traffic deaths rate (per 100,000 population)	8.4	16.8
3	Life Expectancy at birth (years)	80	70
3	Adolescent fertility rate (births per 1,000 women ages 15–19)	25	50
3	Births attended by skilled health personnel (%)	98	90
3	Percentage of surviving infants who received 2 WHO-recommended vaccines (%)	90	80
3	Universal Health Coverage Tracer Index (0–100)	80	60
3	Subjective Wellbeing (average ladder score, 0–10)	6	5
3	Diabetes prevalence (% of population ages 20 to 79)	3	13
3	Age-standardized suicide rates (per 100 000 population)	5	10
4	Net primary enrolment rate (%)	95	80
4	Literacy rate of 15–24 year olds, both sexes (%)	95	80
4	Lower secondary completion rate (%)	90	75
4	Gross enrolment ratio, pre-primary (% of preschool-age children)	90	50
4	School enrollment, tertiary (% gross)	50	25
4	Harmonized Test Scores	500	350
5	Demand for family planning satisfied by modern methods (% women married or in unions, ages 15–49)	80	60
5	Ratio of female to male mean years of schooling of population age 25 and above	98	75
5	Ratio of female to male labour force participation rate	75	50
5	Seats held by women in national parliaments (%)	40	20
5	Ratio of estimated gross national income per capita, female/male (2011 PPP \$)	0.8	0.6
5	Women aged 20 to 24 years who were first married or in union before age 15 (%)	0	2
5	Proportion of women in ministerial positions (%)	40	20
5	Mandatory paid maternity leave (days)	120	90
6	Population using at least basic drinking water services (%)	98	80
6	Population using at least basic sanitation services (%)	95	75

Table 6 | Thresholds for Indicators Included in the 2019 Arab Region SDG Index and Dashboards (Cont.)

SDG	Indicator	Green threshold	Red threshold
6	Freshwater withdrawal as % total renewable water resources	25	75
6	Imported groundwater depletion (m ³ /year/capita)	5	20
6	Anthropogenic wastewater that receives treatment (%)	50	15
6	Degree of integrated water resources management implementation (%)	80	40
6	Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (per 100,000 population)	1	10
7	Access to electricity (% population)	98	80
7	Access to clean fuels & technology for cooking (% population)	85	50
7	CO ₂ emissions from fuel combustion / electricity output (MtCO ₂ /TWh)	1	1.5
7	Renewable electricity output (% of total electricity output)	60	10
7	Energy intensity level of primary energy (MJ/\$2011 PPP GDP, average of 5 years)	3.5	7
8	Adjusted Growth (%)	0	-3
8	Adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider (%)	80	50
8	Unemployment rate (% total labor force)	5	10
8	Fatal work-related accidents embodied in imports (deaths per 100,000)	1	2.5
8	Labour freedom score	75	50
8	Unemployment, youth total (% of total labor force ages 15–24)	10	20
8	Ease of starting a business score	90	75
8	Product concentration index, exports	0.2	0.6
9	Population using the internet (%)	80	50
9	Mobile broadband subscriptions (per 100 inhabitants)	75	40
9	Logistics performance index: Quality of trade and transport-related infrastructure (1=low to 5=high)	3	2
9	Number of scientific and technical journal articles (per 1,000 population)	0.5	0.05
9	Research and development expenditure (% GDP)	1.5	1
9	Carbon dioxide emissions per unit of manufacturing value added (kilogrammes of CO ₂ per constant 2010 US\$)	0.2	1
10	Gini Coefficient adjusted for top income (1–100)	30	40
11	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM _{2.5}) (µg/m ³)	10	25
11	Satisfaction with public transport (%)	72	43
12	E-waste generated (kg/capita)	5	10
12	Production-based SO ₂ emissions (kg/capita)	10	30
12	Imported SO ₂ emissions (kg/capita)	1	15
12	Nitrogen production footprint (kg/capita)	8	50
12	Total municipal solid waste generated (kgs/year/capita)	200	500
12	Value realization score (Resource Governance Index)	70	30
12	Fossil-fuel pre-tax subsidies (consumption and production) per capita (current US\$)	0	400
12	Compliance with Multilateral Environmental Agreements on hazardous waste and other chemicals (%)	90	50
13	Energy-related CO ₂ emissions per capita (tCO ₂ /capita)	2	4
13	Imported CO ₂ emissions, technology-adjusted (tCO ₂ /capita)	0.5	1
13	People affected by climate-related disasters (per 100,000 population)	100	500
13	CO ₂ emissions embodied in fossil fuel exports (kg/capita)	100	8000
14	Mean area that is protected in marine sites important to biodiversity (%)	50	10
14	Ocean Health Index Goal – Clean Waters (0–100)	70	60
14	Ocean Health Index Goal – Fisheries (0–100)	70	60



Table 6 | Thresholds for Indicators Included in the 2019 Arab Region SDG Index and Dashboards (Cont.)

SDG	Indicator	Green threshold	Red threshold
14	Fish caught by trawling (%)	7	60
15	Mean area that is protected in terrestrial sites important to biodiversity (%)	50	10
15	Red List Index of species survival (0–1)	0.9	0.8
15	Imported biodiversity threats (threats per million population)	5	15
16	Homicides (per 100,000 population)	1.5	4
16	Proportion of unsentenced detainees	0.3	0.5
16	Proportion of the population who feel safe walking alone at night in the city or area where they live (%)	80	50
16	Property Rights (1–7)	4.5	3
16	Birth registrations with civil authority, children under 5 years of age (%)	98	75
16	Corruption Perception Index (0–100)	60	40
16	Children 5–14 years old involved in child labour (%)	0	10
16	Freedom of Press Index (best 0 – 100 worst)	25	50
16	Battle-related deaths (per 100,000 population, average of 5 years)	0	1
16	Prison population (per 100,000 persons)	100	200
16	Imports of major conventional weapons (TIV constant 1990 US\$ million per 100,000 population, 5 year average)	0.2	2.5
16	Exports of major conventional weapons (TIV constant 1990 US\$ million per 100,000 population, 5 year average)	1	2.5
16	Status of fundamental human rights treaties	11	8
16	Political stability and absence of violence/terrorism	0.5	-1
17	Government Health and Education spending (% GDP)	10	5
17	Tax Haven Score (best 0–5 worst)	1	3.99
17	Statistical capacity score	75	50

5.4.2. Weighting and Aggregation

The purpose of the Arab Region SDG Dashboards is to highlight those SDGs that require particular attention in each country and therefore should be prioritised for early action. For the design of the SDG Dashboards, the issues discussed above for weighting and aggregation with the SDG Index also apply.

Averaging across all indicators for an SDG might hide areas of policy concern if a country performs well on most indicators but faces serious shortfalls on one or two metrics within the same SDG (frequently referred to as the 'substitutability' or 'compensation' issue). As a result, the Arab Region SDG Dashboards aggregate indicator ratings for each SDG by estimating the average of the two variables on which a country performed worst. To this end, the indicator values were first rescaled from 0 to 3, where

0 corresponds to the lower bound, 1 to the value of the threshold between red and orange ('red threshold'), 2 to the value of the threshold between yellow and green ('green threshold'), and 3 to the upper bound. For all indicators, the 'yellow/orange' threshold was set as the value halfway between the red and green thresholds (1.5). Each interval between 0 and 3 is continuous.

We then took the average of the two rescaled variables on which the country performed worst to identify the rating for the goal. We applied the added rule that in order to score green for the goal both indicators had to be green – otherwise the goal would be rated yellow. Similarly, a red score was applied only if both worst-performing indicators score red. If the country had only one data point under a particular goal, then the colour rating for that indicator determined the overall rating for the goal. If the country had less than 50% of the indicators available under a goal the dashboard colour for that goal was marked 'grey'.

5.5. Trends

Using historic data, we estimated how fast a country has been progressing towards an SDG and determine whether—if continued into the future—this pace will be sufficient to achieve the SDG by 2030. For each indicator, SDG achievement is defined by the green threshold set for the SDG Dashboards. The difference in percentage points between the green threshold and the normalised country score denotes the gap that must be closed to meet that goal. To estimate trends at the indicator level, we calculated the linear annual growth rates (i.e. annual percentage

improvements) needed to achieve the target by 2030 (i.e. 2010–2030) which we compared to the average annual growth rate over the most recent period (e.g. 2010–2015). Progress towards achievement on a particular indicator is described using a 4-arrow system (Figure 17). Figure 18 illustrates the methodology graphically.

Specifically, each indicator trend was re-normalised on a scale from 0-4 in a similar way to the dashboard methodology. Decreasing indicators were assigned a value between 0-1 where 0 is the worst rate of decrease in score and 1 corresponds to absolutely no change in the score over time.

Figure 17 | The 4-arrow System for Denoting SDG Trends

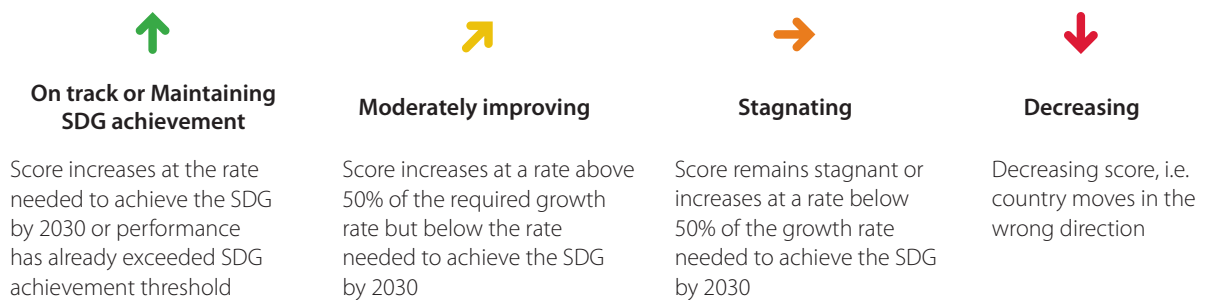
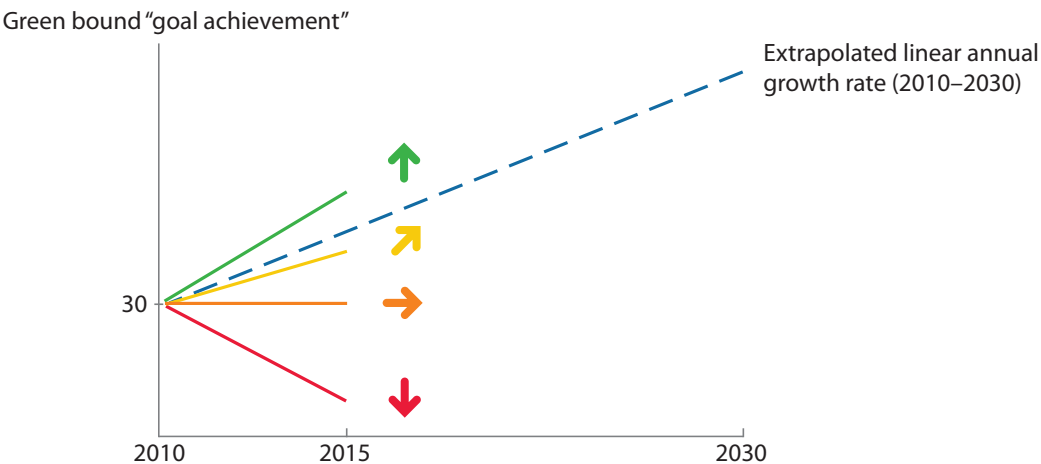


Figure 18 | Graphic Representation of the SDG Trends Methodology



Indicator trends that were 'stagnating' were assigned a value between 1-2, where 2 is the value that corresponds to 50% of the needed growth rate to meet the target by 2030. Indicators that were 'moderately improving' were assigned a value between 2-3 where 3 is the exact needed growth rate to achieve the target by the year 2030. Those indicators that are 'on track' were assigned values between 3-4 where 4 is the best improvement over the period. Indicators that were 'maintaining SDG achievement' were assigned a score of exactly 3. The individual bands are linear, but the continuous 0 to 4 scale is not linear as a whole.

The overall goal trends were calculated as an arithmetic average of the rescaled values for all trend indicators under the goal. An average between 0-1 corresponds to a 'decreasing' goal trend, 1-2 to 'stagnating', 2-3 to

'moderate improvement', and 3-4 to 'on track or maintaining achievement'. The trend for each SDG was calculated as the arithmetic average of all trend indicators for that goal.

Table 7 provides the complete list of indicators used to compute SDG trends. Trend indicators were selected from the indicators included in the SDG Dashboards based on the availability of trend data. When the value for one year was not available, the closest available value with a maximum one-year difference was used for calculating the trend indications. The table also indicates the period over which the trend was calculated.

Following feedback from the European Commission Joint Research Centre (JRC), the trend methodology has been refined for small decreases (see also Box 3). For top

Box 3. The European Commission's Independent Statistical Audit

The European Commission Joint Research Centre (JRC) conducted for the first time an independent statistical audit of the global Sustainable Development Report's methodology and results (see: Papadimitriou et al. 2019). The purpose of the audit was to check the conceptual and statistical coherence of the index structure. Based on the conclusions of the audit, amendments were made to the methodology, indicator selection and presentation of the results of the global SDG Index and Dashboards, which also underlie the Arab Region SDG Index and Dashboards. The main amendments are listed below:

Methodology:

- When there are clear outliers within the 2.5th percentile, adjustments were made at the bottom of the distribution;
- A special process was introduced to deal with small decreases in indicator performance among very top performers; and
- Some targets at the top of the distribution have been refined.

Indicator selection:

- Projected indicators were no longer retained (e.g. 'projected poverty in 2030, which' lead to inconsistencies with the poverty indicator trend arrows);
- The indicator on 'anthropogenic wastewater' was moved from SDG 12 to SDG 6 to follow more closely the content of the official SDGs;
- The indicator on 'Climate Vulnerability Monitor' was replaced by an indicator on 'people affected by disasters' – a more specific measure that is updated more frequently; and
- The list of indicators included under SDG 14 (Life below Water) was revised.

Presentation of the results:

- The trend arrow system was simplified (now containing 4 arrows) with 'flat green' (maintaining performance above SDG achievement) and 'up-green' (on track) merged together.

performers only, very small decreases are now treated as 'stagnating' trends. They are reported as such at the indicator level and treated as such when calculating the overall goal trend. Because those countries that are farther from achieving the target still have serious challenges, this methodology was only applied to the top performers that were decreasing.

The raw indicator values were rescaled so that a 0 represents the minimum value in the series, while 100 represents achievement of the SDG Target, which is the green threshold. Next, countries were identified that had decreased over the time period chosen (e.g. 2010–2015, 2015–2018 or 2015–2019) while staying within 90% of SDG achievement i.e. the rescaled value is greater than 90 at the beginning and end of the period. However, if a country fell from a score of 100 (SDG achievement) to a lower score so that it is no longer meeting the SDG target, this country was still assigned 'decrease' trend.

Several other calculation methods were considered. For instance, we tested the sensitivity of the results when using technical optimums (100 score) as 'goal achievement' and calculating distance to technical optimums. This approach yielded harsher results and is not consistent with our conceptual assumption that lower green thresholds correspond to goal achievement. We also considered using compound annual growth rates (CAGR) instead of linear growth rates. The two approaches yield rather similar results and we could not identify a strong argument for using the more sophisticated CAGR method. Finally, while the dashboards are only based on the two-worst indicators, trends are generated using all indicators under the goal. This is because the dashboards aim to highlight goals where particular attention is required due to very poor performance on some of the underlying indicators, whereas trends aim to reflect insights on the overall goal evolution including all indicators.



Table 7 | Trend Indicators Included in the 2019 Arab Region SDG Index and Dashboards

SDG	Indicator	Years used
1	Poverty headcount ratio at \$1.90/day (% population)	2015–2019
1	Poverty headcount ratio at \$3.20/day (% population)	2015–2019
1	Working poor at PPP\$3.10 a day (% of total employment)	2014–2017
2	Prevalence of undernourishment (% population)	2013–2016
2	Prevalence of obesity, BMI ≥ 30 (% adult population)	2013–2016
2	Cereal yield (t/ha)	2013–2016
2	Human Trophic Level (best 2–3 worst)	2008–2013
3	Maternal mortality rate (per 100,000 live births)	2012–2015
3	Neonatal mortality rate (per 1,000 live births)	2014–2017
3	Mortality rate, under-5 (per 1,000 live births)	2014–2017
3	Incidence of tuberculosis (per 100,000 population)	2014–2017
3	New HIV infections (per 1,000)	2014–2017
3	Age-standardised death rate due to cardiovascular disease, cancer, diabetes, and chronic respiratory disease in populations age 30–70 years (per 100,000 population)	2010–2016
3	Traffic deaths rate (per 100,000 population)	2010–2015
3	Life Expectancy at birth (years)	2013–2016
3	Adolescent fertility rate (births per 1,000 women ages 15–19)	2013–2016
3	Births attended by skilled health personnel (%)	2012–2015
3	Percentage of surviving infants who received 2 WHO-recommended vaccines (%)	2013–2017
3	Universal Health Coverage Tracer Index (0–100)	2014–2017
3	Subjective Wellbeing (average ladder score, 0–10)	2015–2018
3	Age-standardized suicide rates (per 100 000 population)	2010–2015
4	Net primary enrolment rate (%)	2014–2017
4	Lower secondary completion rate (%)	2014–2017
4	Gross enrolment ratio, pre-primary (% of preschool-age children)	2013–2016
4	School enrollment, tertiary (% gross)	2014–2017
5	Estimated demand for family planning satisfied by modern methods (% women married or in unions, ages 15–49)	2014–2017
5	Ratio of female to male mean years of schooling of population age 25 and above	2014–2017
5	Ratio of female to male labour force participation rate	2015–2018
5	Seats held by women in national parliaments (%)	2015–2018
5	Ratio of estimated gross national income per capita, female/male (2011 PPP \$)	2014–2017
5	Proportion of women in ministerial positions (%)	2012–2016
6	Population using at least basic drinking water services (%)	2012–2015
6	Population using at least basic sanitation services (%)	2012–2015
7	Access to electricity (% population)	2013–2016
7	Access to clean fuels & technology for cooking (% population)	2013–2016
7	CO ₂ emissions from fuel combustion / electricity output (MtCO ₂ /TWh)	2012–2015
7	Renewable electricity output (% of total electricity output)	2010–2015
8	Adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider (%)	2014–2017

Table 7 | Trend Indicators Included in the 2019 Arab Region SDG Index and Dashboards (Cont.)

SDG	Indicator	Years used
8	Unemployment rate (% total labor force)	2015–2018
8	Labour freedom score	2015–2019
8	Unemployment, youth total (% of total labor force ages 15–24)	2015–2018
8	Product concentration index, exports	2014–2017
9	Population using the internet (%)	2014–2017
9	Mobile broadband subscriptions (per 100 inhabitants)	2014–2017
9	Logistics performance index: Quality of trade and transport-related infrastructure (1=low to 5=high)	2014–2018
9	Number of scientific and technical journal articles (per 1,000 population)	2013–2016
9	Research and development expenditure (% GDP)	2010–2015
9	Carbon dioxide emissions per unit of manufacturing value added (kilogrammes of CO ₂ per constant 2010 US\$)	2013–2016
11	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM _{2.5}) (µg/m ³)	2014–2017
11	Satisfaction with public transport (%)	2015–2018
13	Energy-related CO ₂ emissions per capita (tCO ₂ /capita)	2013–2016
14	Mean area that is protected in marine sites important to biodiversity (%)	2015–2018
14	Ocean Health Index Goal – Clean Waters (0–100)	2015–2018
14	Ocean Health Index Goal – Fisheries (0–100)	2015–2018
14	Fish caught by trawling (%)	2010–2014
15	Mean area that is protected in terrestrial sites important to biodiversity (%)	2015–2018
15	Red List Index of species survival (0–1)	2015–2018
16	Homicides (per 100,000 population)	2012–2015
16	Proportion of unsentenced detainees	2012–2015
16	Proportion of the population who feel safe walking alone at night in the city or area where they live (%)	2015–2018
16	Property Rights (1–7)	2015–2018
16	Corruption Perception Index (0–100)	2015–2018
16	Freedom of Press Index (best 0–100 worst)	2015–2018
16	Prison population (per 100,000 persons)	2014–2017
16	Political stability and absence of violence/terrorism	2014–2017
17	Statistical capacity score	2015–2018

