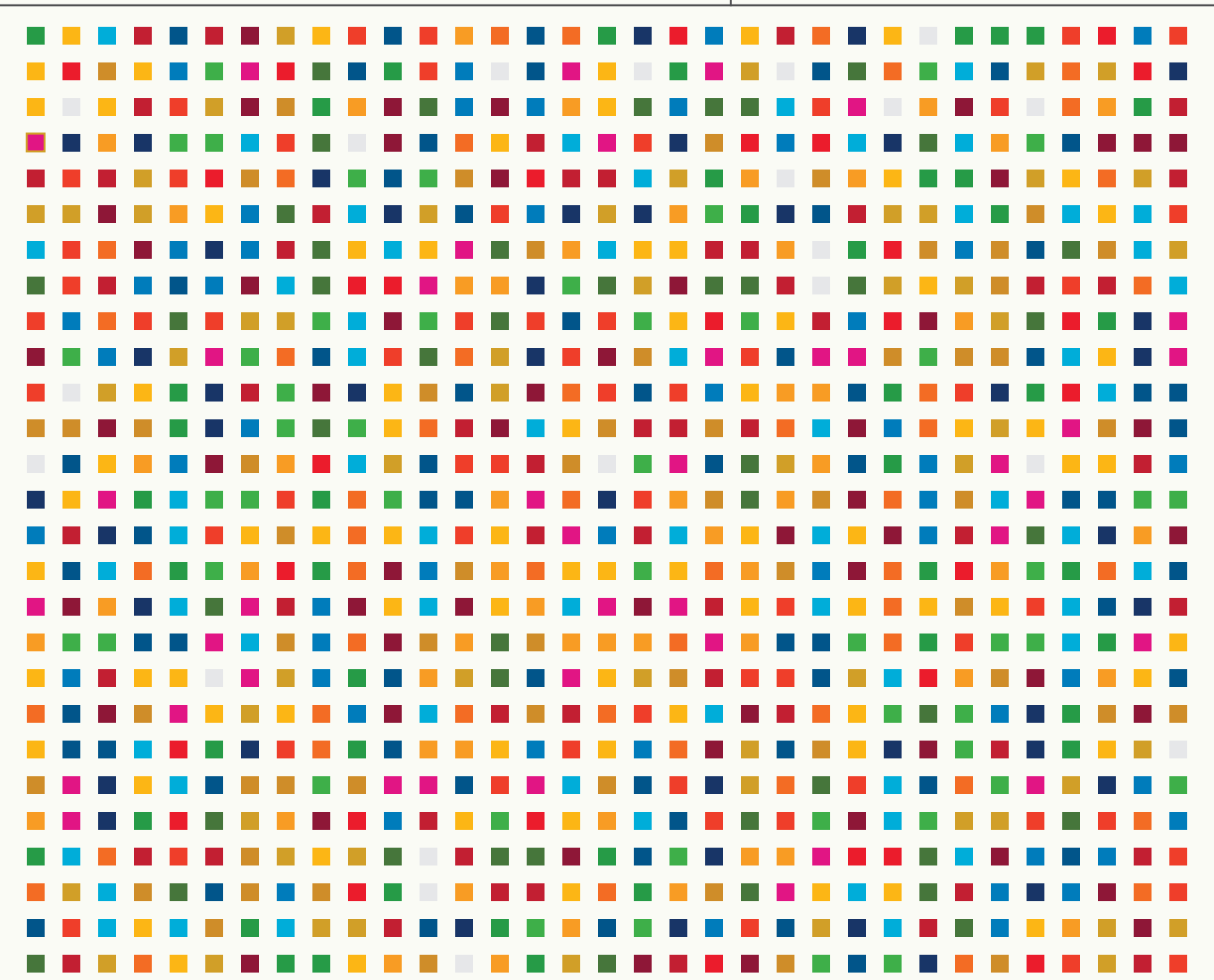
SDG INDEX & DASHBOARDS

A GLOBAL REPORT

JULY 2016



BertelsmannStiftung

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

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This report has been prepared with the extensive advice and consultation of the SDSN Leadership Council members. Members of the Leadership Council listed below serve in their personal capacities, so the opinions expressed in this paper may not reflect the opinions of their host institutions. Members are not necessarily in agreement with every detail of this report.

Lead writers are Jeffrey Sachs, Guido Schmidt-Traub, Christian Kroll, David Durand-Delacre, and Katerina Teksoz. The report should be cited as Sachs, J., Schmidt-Traub, G., Kroll, C., Durand-Delacre, D. and Teksoz, K. (2016): ***SDG Index and Dashboards - Global Report****. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).*

Cover design by Ryan Swaney.
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A draft version of this report was made available for public consultation, and Bertelsmann Stiftung and the SDSN have reached out to many organizations and experts to ask for advice and guidance. The authors are grateful for the large number of comments received from individuals at the institutions listed below, often acting in a personal capacity. The authors are particularly grateful for the detailed contributions received from SDSN member organizations and SDSN colleagues. A summary of the written comments received during the public consultation is available on www.unsdsn.org. None of these organizations were asked to endorse the final report. Any remaining errors or omissions are the sole responsibility of the authors.

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Preface

As Chairman and CEO of the Bertelsmann Stiftung and Director of the Sustainable Development Solutions Network (SDSN), we are proud to present this joint product of two organizations. This work builds on a pioneering report published last year by the Bertelsmann Stiftung, *Sustainable Development Goals: Are the Rich Countries Ready?*, which benefited also from the collaboration with the SDSN. Last year's report described the status of the Sustainable Development Goals (SDGs) in the 34 countries of the Organization for Economic Cooperation and Development (OECD), mostly high-income countries. This report extends the work in several directions, by adding more indicators, refining the methodology, and by taking a global approach including non-OECD countries as well, with a coverage now of 149 of the 193 UN member states.

The purpose of this report is to assist countries in getting started with implementing the new SDGs. The SDGs are a universal agenda of sustainable development, calling on all nations to pursue a holistic strategy that combines economic development, social inclusion, and environmental sustainability. The 17 SDGs agreed at the UN on September 25, 2015 embody a shared global vision of how to combine these three dimensions of sustainable development into action at the local, national, and international levels. We are gratified that throughout the world, local and national governments are already rallying around the new goals, seeking ways to incorporate them into planning processes. Businesses, universities, and civil society are also recognizing that the SDGs and the Paris Climate Agreement (incorporated into the sustainable development agenda as SDG 13) are truly "something new," requiring a new orientation of strategy.

There is universal agreement not only on the SDGs but also on the fact that they represent an unusually complicated agenda for governments. After all, it's hard enough to pursue economic development or social inclusion or environmental sustainability. To do all three together, and with investment strategies that must stretch over 15 years if not more, will certainly require a new orientation of governments and a new approach to multi-stakeholder policy design and implementation. Climate change by itself, just one of the 17 SDGs, requires nothing less than a fundamental overhaul of the world's energy systems in the next 20-40 years. Rising inequality and sluggish growth with weak job prospects urgently demand political action in many countries. The SDGs are certainly not business as usual.

For these reasons, governments, businesses, and civil society are very keen to be able to track the SDGs over time, in order to assess progress, identify priorities, determine weak points in implementation, and to stay on track towards the goals. For this reason, the UN member states are investing considerable diplomatic time and organizational effort to define a new set of comprehensive metrics for the SDGs. An Inter-Agency and Expert Advisory Group (IAEG) was constituted to devise a global indicator framework for the SDGs. Their detailed work is still ongoing and will continue into 2017. The IAEG has already identified three "tiers" of indicators depending on whether the methodology is agreed

and data are already widely available (Tier 1), the methodology is agreed but the data are not widely available (Tier 2), and the methodology is still not globally agreed (Tier 3).

While this exacting and laborious effort continues, it is important that countries get started on the SDGs with relevant data already at hand. It is also important that these data should be accessible and understandable not only for experts but also for government officials, business and civil society, and of course, the citizenry. This is precisely the spirit of the present work. Based on our very careful scrutiny of relevant data already available for tracking the SDGs, the SDG Index and Dashboards present these data in a way that we believe to be informative, insightful, and interesting for the public. Where possible we use the official SDG indicators and fill gaps in data availability with variables published by reputable sources.

We also emphasize again that the SDG Index and Dashboards are not an official product endorsed by any governments or the United Nations. We view this work as complementary to, and supportive of the official process on SDG Indicators led by the UN member states with the support of the UN Statistics Division.

The SDG Index creates for the first time a measure of the SDG starting point for 2015 at the country level. It will help every country identify priorities for early action, understand the key implementation challenges and identify the gaps that must be closed in order to achieve the SDGs by 2030. The SDG Index also allows each country to compare itself with the region, with other counterparts at similar levels of overall economic development, and with the entire world, including the best and worst performers. Indeed we have constructed the various measures for each SDG so that they immediately indicate a country's position on a 0-to-100 spectrum from the "worst" (score 0) to the "best" (score 100).

The report also present SDG Dashboards, *found in the individual country pages* with each goal colored as "green," "yellow," or "red", indicating whether the country has already achieved the goal (green), is in a "caution lane" (yellow), or is seriously far from achievement as of 2015 (red). We are hard graders at this stage, not to be punitive or vindictive, and still less to be pessimistic. The hard grading is to highlight for each country in the world the major priorities that must be addressed in order to achieve the SDG goals and targets. The SDGs are indeed stretch goals for every country, so we recommend that nations carefully study their performance against each indicator to identify the areas where greater progress is required.

We hope that in addition to governments, other SDG stakeholders will find this report interesting and useful. Business, civil society organizations, foundations, universities, the media, and others will all play a vital role in turning the SDGs into practical tools for explaining sustainable development, managing implementation, ensuring accountability, and reporting on progress at local, national, regional, and global levels. This report and the companion website provide rich information to help inform these discussions.

These first SDG Index and Dashboards are bound to have missing data; misclassifications and errors; and out-of-date assessments, for example where data from a few years back are inaccurate regarding the country's current situation. As highlighted throughout the report data on important SDG priorities are sometimes unavailable or out of date. Filling these gaps will require improved metrics as well as more and better data. One priority for SDG implementation must therefore be to invest in strengthening data collection and statistical capacity in all countries.

We know that some countries may be puzzled by their scores and that some will be unhappy with their place in the global rankings. We ask in advance for understanding on these points, and we will continue to improve the SDG Index and Dashboards. Because the report itself is online, we will have the opportunity to correct errors and update the report as new data become available. And most importantly, the SDG Index and Dashboards are not meant to predict future success or failure, only to measure the starting points as accurately as possible and facilitate a learning process.

Both the Bertelsmann Stiftung and the SDSN are deeply committed to the universal success in achieving the SDGs. As this report is written to help countries start the process of implementing the SDGs, we will jointly produce it for the coming three years. We look forward to the opportunity to improve the quality and coverage of the SDG Index and Dashboards over time. As this is the maiden voyage, we encourage and welcome feedback on the usefulness and limitations of the SDG Index and Dashboards, and advice on how the report can be made more useful and accurate in the coming years.

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Motivation for unofficial SDG Index and Dashboards

The 17 Sustainable Development Goals (SDGs, Figure 1) adopted by all member states of the United Nations in September 2015 set ambitious objectives across the three dimensions of sustainable development – economic development, social inclusion, and environmental sustainability, underpinned by good governance. Sound metrics and data are critical for turning the SDGs into practical tools for problem-solving by (i) mobilizing governments, academia, civil society, and business; (ii) providing a report card to track progress and ensure accountability; and (iii) serving as a management tool for the transformations needed to achieve the SDGs by 2030. The Sustainable Development Solutions Network (SDSN) has issued a first Guide to Stakeholders on Getting Started with the SDGs (SDSN 2015), which describes these issues in detail and proposes practical steps for starting the process of implementing the SDGs.

The UN Statistical Commission has initiated a process for developing the global indicator framework for the 17 SDGs and 169 targets. The Commission endorsed a preliminary set of 231 indicators (UN 2016) based on the work of the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs). The IAEG-SDGs subsequently divided these indicators into three tiers (IAEG-SDGs 2016, as of March 2016): Tier I comprises 98 indicators (40%) for which statistical methodologies are agreed and global data are regularly available; 50 indicators (21%) are Tier II with clear statistical methodologies, but little available data; and 78 indicators (32%) fall into Tier III (no agreed standards or methodology and no data). Another 15 indicators have yet to be assigned to a tier.

Figure 1. The Sustainable Development Goals (SDGs)

Source: United Nations.

By comparison, the Millennium Development Goals (MDGs) used 60 globally harmonized indicators, although even this limited number of indicators was not fully implemented in all countries as of 2015. Data for most MDG indicators still include many missing data points, and some indicators have been reported with lags of five years or more (Cassidy 2014). It will therefore take many years before the official SDG indicator framework is underpinned by comprehensive data. In the meantime, interim measures are needed to assist countries in operationalizing the SDGs and identifying priorities for early action.

The Bertelsmann Stiftung, with support of the SDSN, issued a first prototype SDG Index for OECD countries as a shorthand way of tracking SDG achievement and determining priorities for the 34 OECD countries (Kroll 2015). Another useful effort has been undertaken by the Overseas Development Institute (Nicolai et al. 2015), which presented a regional SDG Scorecard with trends across key dimensions of the SDGs to determine areas in which the fastest acceleration of progress will be required. The scorecard showed that business-as-usual trends will not be enough to achieve many of the SDGs. The ODI scorecard relies on regional aggregates, so its findings cannot be applied at the country level.

This report offers a first look at a country-level SDG Index and SDG Dashboards that cover 149 of the 193 UN member countries with adequate data coverage. We emphasize that the SDG Index and Dashboards are not official SDG monitoring tools. Our focus instead is on identifying suitable "quick" metrics – based whenever possible on the official SDG indicators – to enable countries to take stock of where they stand in 2016 with regards to fulfilling the SDGs and to help countries set priorities for early action. The SDG Index and Dashboards are subject to many important limitations and caveats that we summarize at the end of this report. We strongly encourage an official SDG monitoring framework that includes more and better data for all countries. The SDG Index and Dashboards underscore that such an indicator framework will require significant investments in statistical capacity, so that every country can in due course track the 17 SDGs with rigor.

This report introduces the unofficial SDG Index and Dashboards and summarizes the preliminary results. Part I describes the SDG Index. Part II introduces the SDG Dashboards for individual countries. Part III summarizes some of the limitations of both tools as well as overall implications. Annex 1 describes the methodology in technical detail. Annex 2 offers non-technical Frequently Asked Questions (FAQs) that address issues raised during the consultations for this report. A list of key references is included at the end of the report. Detailed metadata for the SDG Index and Dashboards and visualization tools are available online at www.sdgindex.org. The full datasets can be downloaded in spreadsheet form or as Stata files for statistical analyses.

Part I. The SDG Index

The SDG Index ranks countries regarding their initial status on the 17 SDGs, where "initial" refers to data as close to 2015 as available. The SDG Index is preliminary, and uses only published data. This constitutes only a subset of the data that will eventually be used to monitor progress towards achieving the SDGs at country level under the official monitoring framework. The SDG Index allows each country to assess its current state of progress relative to its peers (e.g. countries at a given income level or in a given geographic region), to the SDG targets, and to the "best" possible scores on the various indicators, as explained below.

Outline of methodology

The SDG Index is built on a set of indicators for each of the 17 SDGs using the most recent published data. We include indicators that offer data for at least 80% of all countries with a population greater than 1 million. Where possible, the SDG Index uses the official indicators proposed by the IAEG-SDGs. Where official indicators have insufficient data available or where indicator gaps remain, we reviewed official and other metrics published by reputable sources for inclusion in the SDG Index (Annex 1). The data and methodology for the SDG Index and Dashboards were submitted to a public consultation, and the writing team consulted widely with statistical agencies, international organizations, and technical communities to validate the approach and to identify ways to fill data gaps.

In this first SDG Index, we were able to include 77 indicators of which 14 variables are only available for OECD countries. The Index comprises 149 of the 193 UN member states. We plan to add more indicators and more countries in later editions of the SDG Index. All data are available online for download and as user-friendly visualizations.

To compute the SDG Index, we order data for each indicator from worst to best. In some cases the highest numerical value on an indicator is "worst" (e.g. infant mortality rate) while for other indicators the highest numerical value is "best" (e.g. life expectancy). To determine the worst value for each indicator, we first remove the worst 2.5% of observations in order to ensure that our scoring is not overly influenced by outliers. We then identify the next-worst value on each indicator and apply this value to the bottom 2.5 percentile of the distribution.

We also create a best score. In most cases the best score is the natural "perfect" and technically feasible target in line with the principle of "leaving no one behind" (e.g. zero extreme poverty, zero undernourishment, 100% school completion). In some cases no such "perfect" target exists as the theoretical optimum may not be achievable or might be undefined (e.g. child mortality rate, physician density, traffic deaths, life expectancy, Gini index) (Rose, 1995). Here we use the average of the top 5 values in the sample of countries for that indicator. All countries that exceed the average of the best values are assigned the best value.

For each country we then create an adjusted indicator score that lies between 0 and 100 (see Annex 1 for details). This adjusted indicator score marks the placement of the country between the worst (0) and best cases (100). A score of 70, for example, signifies that the country is 70% of the way from the worst score to the best score.

For each of the 17 SDGs, we include at least one indicator and typically several indicators (Annex 1). By averaging across the scores for all indicators that apply to each SDG, we arrive at country scores for each of the 17 goals. Our last step is to take the average of the country scores on each of the 17 SDGs to find the overall SDG Index for each country. There are different options for averaging, including a simple arithmetic average or a geometric average. The arithmetic average has the advantage of simplicity of interpretation: an index score between 0 and 100 reflects the average initial placement of the country between worst and best on the average of the 17 goals. The geometric average has the advantage of reflecting an assumed "penalty" of being very low on any particular SDG goal, reflecting the fact that being strong on one goal does not fully substitute for being weak on another, a concept known in economics as "limited substitutability" (OECD 2008). The geometric average is therefore recommended in several contexts such as this one, and some of the commentators to the earlier draft suggested the use of the geometric average. Yet the geometric average is less intuitive in the meaning of the resulting score, and tends to reduce sharply (and we believe somewhat misleadingly) the scores of the poorest countries. In fact, there is very little practical difference in the two approaches as shown in Annex I. The correlation coefficient is 0.977 and the ranking of the countries is nearly identical. For purposes of simplicity we therefore report the score as the more easily interpreted arithmetic average, but we also report the median average score in Annex I and provide all measures as downloadable data.

Summary results

The SDG Index is shown in Table 1. We can think about the country's score for any of the individual 17 SDGs and for the overall SDG Index, as signifying the country's position between the worst (0) and best (100) cases. Sweden's overall index score of 84.5, for example, signifies that Sweden is on average 84.5% of the way to the best possible outcome across the 17 SDGs.

Three Scandinavian countries (Sweden, Denmark, and Norway) top the SDG Index. This means that they are closest now to achieving the SDG endpoints envisaged for 2030, but they score significantly below the maximum score of 100. Even these relative top performers have their work cut out, as demonstrated further by the OECD Dashboards (Table 3). For example, these countries need to shift their energy systems from high-carbon to low-carbon primary energy in order to fulfill SDGs 7 and 13. In general, the SDG Index and the SDG Dashboards show that even many high-income countries fall far short of achieving the SDGs. This is not surprising. Sustainable development includes three pillars – economic development, social inclusion, and environmental sustainability –

supported by good governance. It is possible to be rich (high income) but with significant inequality and unsustainable environmental practices (Osberg and Sharpe, 2002). These results merely underscore the point that the SDGs are universal stretch goals, applicable to every country in the world.

It is also the case, however, that the poorest countries in the world tend to be near the bottom of the ranking. This is not surprising, in view of the fact that many of the SDGs call for ending extreme poverty (SDG 1) and hunger (SDG 2), and for universal access to health care (SDG 3), education (SDG 4), safe water and sanitation (SDG 6), modern energy services (SDG 7), decent jobs (SDG 8), and sustainable infrastructure (SDG 9), all of which remain important challenges for many of the world's poorer countries. A major global commitment, made in Addis Ababa in the Finance for Sustainable Development Summit, and again in the 2030 Agenda and the Paris Climate Agreement, is for the richer countries to help the poorer countries to meet all of the SDGs.

Table 1. The SDG Index

Rank	Country	Score
1	Sweden	84.5
2	Denmark	83.9
3	Norway	82.3
4	Finland	81.0
5	Switzerland	80.9
6	Germany	80.5
7	Austria	79.1
8	Netherlands	78.9
9	Iceland	78.4
10	United Kingdom	78.1
11	France	77.9
12	Belgium	77.4
13	Canada	76.8
14	Ireland	76.7
15	Czech Republic	76.7
16	Luxembourg	76.7
17	Slovenia	76.6
18	Japan	75.0
19	Singapore	74.6
20	Australia	74.5
21	Estonia	74.5
22	New Zealand	74.0
23	Belarus	73.5
24	Hungary	73.4
25	United States	72.7
26	Slovak Republic	72.7
27	Korea, Rep.	72.7
28	Latvia	72.5
29	Israel	72.3
30	Spain	72.2
31	Lithuania	72.1
32	Malta	72.0
33	Bulgaria	71.8
34	Portugal	71.5
35	Italy	70.9
36	Croatia	70.7
37	Greece	69.9
38	Poland	69.8
39	Serbia	68.3
40	Uruguay	68.0
41	Romania	67.5
42	Chile	67.2
43	Argentina	66.8
44	Moldova	66.6
45	Cyprus	66.5
46	Ukraine	66.4
47	Russian Federation	66.4
48	Turkey	66.1
49	Qatar	65.8
50	Armenia	65.4
51	Tunisia	65.1
52	Brazil	64.4
53	Costa Rica	64.2
54	Kazakhstan	63.9
55	United Arab Emirates	63.6
56	Mexico	63.4
57	Georgia	63.3
58	Macedonia, FYR	62.8
59	Jordan	62.7
60	Montenegro	62.5
61	Thailand	62.2
62	Venezuela, RB	61.8
63	Malaysia	61.7
64	Morocco	61.6
65	Azerbaijan	61.3
66	Egypt, Arab Rep.	60.9
67	Kyrgyz Republic	60.9
68	Albania	60.8
69	Mauritius	60.7
70	Panama	60.7
71	Ecuador	60.7
72	Tajikistan	60.2
73	Bosnia and Herzegovina	59.9
74	Oman	59.9
75	Paraguay	59.3
76	China	59.1
77	Jamaica	59.1
78	Trinidad and Tobago	59.1
79	Iran, Islamic Rep.	58.5
80	Botswana	58.4
81	Peru	58.4
82	Bhutan	58.2
83	Algeria	58.1

Table 1. The SDG Index (continued)

Rank	Country	Score
84	Mongolia	58.1
85	Saudi Arabia	58.0
86	Lebanon	58.0
87	Suriname	58.0
88	Vietnam	57.6
89	Bolivia	57.5
90	Nicaragua	57.4
91	Colombia	57.2
92	Dominican Republic	57.1
93	Gabon	56.2
94	El Salvador	55.6
95	Philippines	55.5
96	Cabo Verde	55.5
97	Sri Lanka	54.8
98	Indonesia	54.4
99	South Africa	53.8
100	Kuwait	52.5
101	Guyana	52.4
102	Honduras	51.8
103	Nepal	51.5
104	Ghana	51.4
105	Iraq	50.9
106	Guatemala	50.0
107	Lao PDR	49.9
108	Namibia	49.9
109	Zimbabwe	48.6
110	India	48.4
111	Congo, Rep.	47.2
112	Cameroon	46.3
113	Lesotho	45.9
114	Senegal	45.8
115	Pakistan	45.7
116	Swaziland	45.1
117	Myanmar	44.5
118	Bangladesh	44.4
119	Cambodia	44.4
120	Kenya	44.0
121	Angola	44.0
122	Rwanda	44.0
123	Uganda	43.6
124	Cote d'Ivoire	43.5
125	Ethiopia	43.1
126	Tanzania	43.0
127	Sudan	42.2
128	Burundi	42.0
129	Togo	40.9
130	Benin	40.0
131	Malawi	39.8
132	Mauritania	39.6
133	Mozambique	39.5
134	Zambia	38.4
135	Mali	38.2
136	Gambia, The	37.8
137	Yemen, Rep.	37.3
138	Sierra Leone	36.9
139	Afghanistan	36.5
140	Madagascar	36.2
141	Nigeria	36.1
142	Guinea	35.9
143	Burkina Faso	35.6
144	Haiti	34.4
145	Chad	31.8
146	Niger	31.4
147	Congo, Dem. Rep.	31.3
148	Liberia	30.5
149	Central African Republic	26.1

Source: Authors' calculations

In Annex I, we compare the SDG Index with the country rankings obtained by re-ranking UNDP's (2015) Human Development Index (HDI) for the 149 countries included in the SDG Index. We find a high correlation between the two rankings, but with some significant differences for a few countries, notably from the MENA region. Some countries from the region are ranked some 30 to 40 places lower in the SDG Index compared with the HDI suggesting that they do well in meeting basic human development needs, but perform worse on other dimensions of the SDGs, for example environmental sustainability (Anand and Sen, 2000). In the online country profiles we compare the SDG Index ranking for each country with the HDI and other broad measures of development.

In view of better data availability in OECD countries, we augment the global SDG Index with 14 additional variables for these countries to create an Augmented SDG Index for OECD countries. Additional indicators for this expanded index are largely drawn from OECD statistics (OECD 2016). The augmented scores are shown in Table 2. There is very little change in the ranking from adding the extra variables, but we believe that the additional OECD variables add granularity and accuracy to the analysis for the OECD countries (Annex 1).

Table 2. Country rankings by Augmented SDG Index for OECD countries

Rank	Country	Score	Rank	Country	Score
1	Sweden	80.0	18	Ireland	69.5
2	Denmark	78.8	19	Czech Republic	69.3
3	Norway	78.5	20	Australia	69.0
4	Switzerland	76.5	21	Estonia	68.5
5	Finland	76.4	22	United States	66.7
6	Iceland	74.7	23	Israel	66.4
7	Germany	74.7	24	Korea, Rep.	66.3
8	Netherlands	73.7	25	Hungary	65.2
9	Belgium	72.4	26	Spain	64.3
10	Austria	72.1	27	Portugal	64.2
11	Canada	71.8	28	Slovak Republic	63.8
12	Luxembourg	71.6	29	Poland	62.9
13	United Kingdom	71.3	30	Italy	62.5
14	Slovenia	71.2	31	Greece	60.4
15	France	71.1	32	Chile	58.9
16	New Zealand	70.6	33	Turkey	56.6
17	Japan	69.7	34	Mexico	54.8

Source: Authors' calculation

Part II. The SDG Dashboards

The SDG Dashboards for each country are included in the individual country pages and represent the available data on SDG achievement across the 17 goals using a color-coded schema. The Goals are highlighted in green, yellow, or red, with the latter emphasizing a country's most acute challenges. Green signifies that for this indicator the country is on a good path towards reaching an SDG and its targets or has (in some cases) already achieved the threshold consistent with SDG achievement

Outline of methodology

To construct the SDG Dashboards and to give a color rating for each underlying indicator, we determine four quantitative thresholds: best and worst scores (described above in the SDG Index methodology), the threshold for SDG achievement, and the threshold between a red and yellow color rating. The quantitative thresholds used for each indicator are described in Annex 1 and the online metadata.

We then generate an overall color rating for each of the 17 SDGs that is equal to the *minimum* color rating across the indicators for that SDG. For example, if a country receives a red rating for one of indicators of SDG 3 and a yellow rating for all of the other indicators for SDG 3, the overall color rating for that country for SDG 3 is assigned "red." We choose the minimum color rating in order to draw attention to the most urgent challenges facing each country for each SDG. This approach generates "tough grades" as our purpose is to highlight the gaps in SDG achievement rather than the bright spots. Thus, when a country has a red rating, it does not mean that it has a low score for every aspect or indicator of that particular SDG. Rather it signifies a low score for at least one of the indicators.

Since OECD countries have access to more internationally comparable data – particularly on key environmental and social challenges – we augment the SDG Dashboards for OECD Countries with the same additional variables used in the Augmented SDG Index for OECD countries, so as to fill some of the data gaps that limit the SDG Dashboards. Where possible, we include proposed SDG indicators that have data for at least 80% of all OECD countries. In this way the SDG Dashboards subject OECD countries to tougher standards as the larger number of variables for each goal makes it more likely that a country obtains a lower dashboard ranking using the *minimum* principle. This approach is justified since OECD countries have access to vastly greater resources to meet the SDGs.

Summary results

Results from the country dashboards for OECD countries demonstrate that the SDGs are an action agenda for rich countries as well as for developing countries. Every OECD country faces major challenges – as indicated by a red rating – in meeting several SDGs. On average, OECD countries are "red" on more than one third of the goals, meaning that they are red on at least one of the underlying indicators for those SDGs. The greatest challenges exist on climate change (SDG 13), ecosystem conservation (SDGs 14 and 15), and sustainable consumption and production (SDG 12). Several OECD countries are rated "red" on SDG 2 because their agricultural systems are unsustainable, and some countries are rated low because of very high rates of obesity, which we interpret to be a measure of malnutrition. A large number of OECD countries face major challenges in achieving SDG 17 – largely because of their insufficient financial contributions towards international development cooperation – and some experience low growth and high unemployment (SDG 8) as well as major shortfalls on gender equality (SDG 5). We recommend that OECD countries carefully study their performance against individual indicators in Part III to identify the areas where greater progress is required.

The dashboards for **East and South Asia** (see country pages) outperform many other developing regions on the SDGs, but several challenges do remain. While tremendous progress has been made on reducing extreme income poverty (SDG 1), the dashboards show that the region faces major SDG challenges in health (SDG 3, in particular relating to health systems and some infectious diseases) and education (SDG 4). SDG 2 (improved nutrition and sustainable agriculture) comes up as red across the region since countries either face high levels of malnutrition and stunting or unsustainable agricultural practices. There are still significant shortfalls on ensuring access to basic infrastructure services (SDGs 6, 7, 9) across the region. Many countries face major challenges on ensuring gender inequality (SDG 5) and promoting environmental sustainability (SDGs 11, 12, 13, 14, 15, as well as SDG 2 on sustainable agriculture). Overall, the dashboards show that the region needs to better balance its economic performance with environmental sustainability.

Countries in **Eastern Europe and Central Asia** have met some of the most pressing challenges in providing social services and access to basic infrastructure, though greater progress is needed to achieve these SDGs. The region has largely ended extreme income poverty (SDG 1). The greatest challenges remain in achieving gender equality (SDG 5), addressing renewable energy and climate change (SDGs 7, 13), sustainable consumption and production (SDG 12), and protecting ecosystems (SDGs 14, 15). SDG 2 shows that many countries also need to shift towards more environmentally sustainable agricultural practices. Under SDG 9 (infrastructure) countries will need to prioritize greater access to information and communication technologies. A few countries in the region exhibit very high rates of income inequality (SDG 10).

Extremely high levels of inequality (SDG 10) are a critical challenge across **Latin America and the Caribbean countries**. The same applies to gender equality in many countries, and the region does not yet provide adequate access to infrastructure, particularly information and communication technologies (SDG 9). Given the relatively higher levels of per capita incomes in the region it is notable that some countries continue to face major challenges in health (SDG 3) and education (SDG 4). The SDGs' stronger focus on environmental sustainability brings out major challenges across the region in meeting SDGs 12 (sustainable consumption and production), 13 (climate change), 14 (oceans), and 15 (terrestrial ecosystems). High levels of violence show up in poor ratings on SDG 16 for a number of countries. As the poorest country in the region, Haiti faces particular challenges across the full breadth of the SDGs.

In the dryland **Middle East and North Africa** countries food security and sustainable agriculture (SDG 2) and sustainable water management (SDG 6) are high-priority challenges in most countries. The data on SDG 8 show that many countries are not growing fast enough and experience high rates of unemployment. Several countries face major challenges in achieving gender equality (SDG 5). These countries also face major challenges in decarbonizing their energy systems to fight climate change (SDG 13), and in conserving marine (SDG 14) and terrestrial (SDG 15) ecosystems. Several countries also need to prioritize the uptake of new technologies (SDG

9). Several countries perform poorly across the full range of SDGs owing to instability and conflict, which also show up in SDG 16.

As the world's poorest region, albeit one that is now experiencing important advances, **Sub-Saharan Africa** faces nearly across-the-board challenges in meeting the SDGs. In particular, major challenges remain in ending extreme poverty (SDG 1) and hunger (SDG 2), health (SDG 3), education (SDG 4), and access to basic infrastructure (SDG 9), while noting the tremendous progress that was made in many of these areas under the Millennium Development Goals. The broader SDGs bring out additional challenges for Sub-Saharan Africa that require urgent action. These include sustainable urban development (SDG 11) and reducing high inequality (SDG 10). Similarly, significant challenges remain on SDGs 16, including peace, security, and institutions. The red scores on Goal 17 highlight that Sub-Saharan Africa has significant potential in mobilizing domestic revenue collection and in the deployment of information and communication technologies.

Part III. Some limitations and conclusions of this analysis

As underscored throughout the report, this analysis remains only a start, and cannot and should not replace global and national efforts to collect far more extensive and detailed SDG indicators, and to collect those variables over time to note rates of change. Here we highlight **four limitations** of this first global effort to measure where countries stand on the SDGs. See Annex I for more detailed discussions.

1. **Impossibility to track some SDGs between countries:** A few SDGs and their targets focus on cross-country effects or global public goods. For example, SDG 10 calls for reducing inequality within and between countries. The SDG Index and Dashboards consider each country separately and therefore cannot track progress towards reducing inequality between countries or promoting global public goods. Such SDG priorities will require other analytical tools not included in this preliminary report.

2. **Limited consideration of international spillover effects:** A closely related point is that action inside some countries can have a significant impact on other countries' ability to achieve the SDGs. Some of these effects are captured in the preliminary SDG Index and Dashboards (e.g. international development finance, or per capita greenhouse gas emissions), but many are not. Such cross-border effects might include demand for environmental resources in rich countries that accelerate environmental degradation in developing countries, or the effect of rules and standards for international trade. Subsequent versions of the SDG Index and Dashboards will address in detail these important issues through regional analyses.

3. **Inclusion of non-official indicators:** Many proposed official SDG indicators lack data for the majority of countries and could therefore not be included in this preliminary SDG Index and Dashboards. We have therefore consulted technical expert communities to add additional metrics published by official or other reputable sources, as our aim is to provide a picture of where each country stands with regards to SDG implementation that is as comprehensive and balanced as possible given today's available data.

4. **No consideration of time series data:** Our analysis uses the most recent available data for each indicator and does not yet consider historical data since the availability of such time series is too limited for some variables. As a result, the SDG Index and Dashboards tell us where a country currently stands on each of the indicators considered, but they cannot be used to infer how fast countries have been progressing towards achieving the SDGs.

Despite these gaps and limitations, the SDG Index and Dashboards can be very helpful to countries in assessing their starting point on the SDGs. We see four overriding findings from this first report:

1. **Every country faces major challenges in achieving the SDGs:** The SDG Dashboards highlight some "red" priority SDGs for every country. Even "yellow" of course signifies important room for improvement and should be interpreted as a major challenge, particularly in wealthier countries. Poor countries face significant challenges in ending extreme poverty in all its forms, social inclusion, access to essential infrastructure, and many forms of environmental degradation. Richer countries face more specific but nonetheless major challenges in areas such as climate change mitigation, inequality, sustaining the global partnership, and targeted challenges in areas such as nutrition, gender equality, or education. The SDG Index and Dashboards provide a simple tool for presenting countries' challenges in achieving the SDGs and benchmarking progress against peers that can be applied at the regional, national, and sub-national levels. They can help countries operationalize the SDGs and identify priorities for early action, as described in the Guide to Stakeholders on Getting Started with the SDGs (SDSN 2015).

2. **Poor countries need help to achieve the SDGs.** The SDGs are undoubtedly a very bold agenda. It is clear from this analysis, that the poorest countries will face major challenges in achieving the SDGs. They will need considerable global assistance to supplement national leadership. This assistance should come in many forms: foreign direct investment, global tax reform to enable the poor countries to fight tax evasion by international investors, technology sharing, capacity development, and of course, more Official Development Assistance.

3. **Countries should usefully benchmark themselves against their peers as well as against the goal thresholds:** The SDG Index and Dashboards highlight substantial variation across countries in a region or income group. In combination, the SDG Index and Dashboards can help countries benchmark their progress against that of their peers and against the top performers to understand reasons for differential performance and devise better strategies to achieve the SDGs by 2030.

4. **Countries and international agencies need to make substantial investments in statistical capacity to track the SDGs:** Despite our best efforts to include as many indicators as possible, a number of very important data gaps remain. Addressing these gaps will require increased investments in statistical capacity and other forms of data collection especially but not only in low-income developing countries. In particular, broader measures for the following SDG priorities are urgently needed:

- Sustainable agriculture (SDG 2)
- Universal health coverage (SDG 3)
- Quality of education (SDG 4)
- Women empowerment (SDG 5)
- Integrated water resources management (SDG 6)
- Decent work (SDG 8)
- Inclusive and sustainable cities (SDG 11)
- Sustainable consumption and production (SDG 12)
- Climate change impacts and resilience (SDG 13)
- Ecosystem services (SDGs 14 and 15)
- Means of implementation (SDG 17 and other SDGs).

In addition, the SDG Dashboards do yet not capture important regional challenges that are less relevant at the global level, such as neglected tropical diseases, malaria, or inequality in education outcomes. Similarly, most Small-Island-Developing States (SIDS) lack adequate data for inclusion in the global SDG Index and Dashboards, so tools could be developed that better address the specific needs of these countries.

The Bertelsmann Stiftung and the SDSN look forward to working with countries to improve the SDG Index and Dashboards and to make them more useful for stakeholders. In particular, we will work to improve data coverage and add new variables as better data become available. We welcome comments on this report, which should be directed to info@sdgindex.org.

Annex 1: Methodology for SDG Index and Dashboards

This technical annex describes the methodology used for constructing the SDG Index and Dashboards. It draws particularly on the methodology handbook on constructing composite indicators prepared by the OECD (2008) and outlines the critical assumptions made. We also present sensitivity analyses for the results and outline avenues for further improvements in the methodology and procedures used in the calculation process.

1.Indicator selection and data sources

To determine suitable metrics for inclusion in the SDG Index and Dashboards, we identify technically-sound quantitative indicators for each goal that meet five quality criteria for data selection:

1. **Global relevance and applicability to a broad range of country settings:** The indicators are relevant for monitoring the SDGs and applicable to all or nearly all countries. They must be internationally comparable and allow for direct comparison of performance assessment across countries.
2. **Statistical adequacy:** Data are collected and processed in a statistically reliable way without large or frequent revisions.
3. **Timeliness:** Data series must be published on a reasonably prompt schedule and be available for most recent years.
4. **Data quality:** Data series must represent the best available measure for a specific issue and derive from official national or international sources (e.g. national statistical offices or United Nations organizations) or other reputable international sources.
5. **Coverage:** Data must be available for at least 80% of the 149 UN member states with a national population greater than 1 million,[1] a group of countries that includes more than 99% of the world population.[2]

In developing the SDG Index and Dashboards we have considered all indicators proposed by the IAEG-SDGs that meet the standards identified above as well as suggestions received from a broad range of experts and organizations who contributed to the public consultation on an earlier draft of this document. In addition, the Bertelsmann Stiftung and the SDSN have

[1] Small countries, such as Small Island Developing States, face several unique development challenges. Among them are high fixed per capita costs for data collection, which generally results in lower data availability. Moreover, the small size of some countries' population makes it difficult to define representative survey samples required for household and other surveys. As a result, key MDG and SDG metrics remain unavailable in many countries with a small population. This gap urgently needs to be filled with support from the international community.

[2] An exception is made for ocean-based indicators where we exclude landlocked countries from the minimum sample size resulting in 116non-landlocked countries with a population greater than 1 million.

consulted widely among statistical organizations, members of the SDSN Leadership Council, the peer-reviewed literature, and international databases, including the World Development Indicator database (World Bank 2016), the Human Development Report (UNDP 2015), and OECD Statistics (OECD 2016). We also considered indicators proposed in SDSN (2015), which in turn draws on inputs from two public consultations, and Kroll (2015). All indicators are described in the online metadata.

We include data from the most recent years available. Where necessary, we interpolate missing variables using data from earlier years, as described in the online metadata. Since the focus of the SDG Dashboards is to guide countries' discussion of their SDG priorities today, we generally do not impute or model any missing data. We make exceptions for four variables that would otherwise not have been included because of missing data:

- Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population): The World Bank (Ferreira et al. 2015) assumes zero extreme income poverty in high-income countries when constructing its global estimate of the number of people living below $1.90 a day. We therefore assume a value of 0% for all high-income countries where data were missing.

- Prevalence of undernourishment (% of population): FAO et al. 2015 report 14.7 million undernourished people in developed regions, which corresponds to an average prevalence of 1.2% in the developed regions. We therefore assume a 1.2% prevalence rate for each developed country with missing data.

- Research and development expenditure (% of GDP: We assume zero R&D expenditure for low-income countries that do not report any data for this variable.

- Percentage of children 5-14 years involved in child labor: The best performing upper-middle-income countries in data published by UNICEF (2015) have a child labor rate of 1%. We assume 0% child labor for developed countries for which no data are reported.

In each case, the missing values are inferred from patterns in the known, non-missing data (Foa and Tanner, undated). Robustness tests on the above treatment of missing values reveal that the rankings in the SDG Index and color coding in the SDG Dashboards are largely unaffected by the imputations.

Table 3 lists the indicators included in the SDG Index and Dashboards: 63 indicators are included in the global SDG Index and Dashboards. An additional 14 variables are included in the Index and Dashboards for OECD countries. Moreover, 2 further indicators in the global SDG Index and Dashboards are replaced by improved variables in the Augmented SDG Index and Dashboards for individual OECD countries. The Augmented Index and Dashboards for OECD countries therefore comprise 77 indicators. See the online metadata for additional details.

Table 3. Indicators included in the SDG Index and Dashboards

SDG	Indicator	Notes	IAEG-SDGs **	Year(s)*	Source
1	Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)		-	2009-2013	World Bank (2016)
	Poverty rate after taxes and transfers, poverty line 50% (% of population)	(a)	-	2011-2014	OECD (2016a)
2	Prevalence of undernourishment (% of population)		●	2013	FAO (2015)
	Cereal yield (t/ha)		-	2013	FAO (2015)
	Prevalence of stunting (low height-for-age) in children under 5 years of age (%)		●	2000-2015	UNICEF, WHO & WB (2015)
	Prevalence of wasting in children under 5 years of age (%)		●	2000-2015	UNICEF, WHO & WB (2015)
	Sustainable Nitrogen Management Index (0-1)		-	2006/2011	Zhang & Davidson (2016); Zhang et al. (2015)
	Prevalence of obesity, BMI ≥ 30 (% of adult population)	(a)	-	2014	WHO (2016b)
3	Mortality rate, under-5 (per 1,000 live births)		●	2013	World bank (2016)
	Maternal mortality rate (per 100,000 live births)		●	2015	WHO et al (2015)
	Neonatal mortality rate (per 1000 live births)		●	2015	WHO et al (2015)
	Physician density (per 1000 people)		●	2004-2013	WHO (2016a)
	Incidence of tuberculosis (per 100,000 people)		●	2014	WHO (2016a)
	Traffic deaths rate (per 100,000 people)		●	2013	WHO (2016a)
	Adolescent fertility rate (births per 1,000 women ages 15-19)		-	2005-2015	WHO (2016a)
	Subjective wellbeing (average ladder score, 0-10)		-	2014	Helliwel et al. (2015)
	Healthy life expectancy at birth (years)		-	2015	WHO (2016a)
	Percentage of surviving infants who received 2 WHO-recommended vaccines (%)		-	2014	WHO&UNICEF (2016)
	Daily smokers (% of population aged 15+)	(a)	●	2006-2013	WHO (2016a)
4	Expected years of schooling (years)		-	2013	UNESCO (2016)
	Literacy rate of 15-24 year olds, both sexes (%)		o	2001-2013	UNESCO (20156)
	Net primary school enrolment rate (%)		o	1997-2014	UNESCO (2016)
	Population aged 25-64 with tertiary education (%)	(a)	-	2011	OECD (2016a)
	PISA score (0-600)	(a)	-	2012	OECD (2016a)
	Population aged 25-64 with upper secondary and post-secondary non-tertiary educational attainment (%)	(a)	-	2011-2013	OECD (2016a)
5	Proportion of seats held by women in national parliaments (%)		●	2012-2014	IPU (2015)
	Female years of schooling of population aged 25 and above (% male)		-	2014	UNDP (2015)
	Female labor force participation rate (% male)		-	2010-2014	ILO (2016)
	Estimated demand for contraception that is unmet (% of women married or in union, ages 15-49)		●	2015	WHO (2016c)
	Gender wage gap (% of male median wage)	(a)	-	2012	OECD (2016a)
6	Access to improved water source (% of population)		-	2011-2015	WHO & UNICEF (2016)
	Access to improved sanitation facilities (% of population)		-	2011-2015	WHO & UNICEF (2016)
	Freshwater withdrawal (% of total renewable water resources)		●	1999-2012	FAO (2016)

Table 3. Indicators included in the SDG Index and Dashboards (continued)

SDG	Indicator	Notes	IAEG-SDGs **	Year(s)*	Source
7	Access to electricity (% of population)		●	2012	World Bank (2016)
	Access to non-solid fuels (% of population)		o	2010	SE4All (2016)
	CO_2 emissions from fuel combustion and electricity output ($MtCO_2$/TWh)		-	2013	IEA (2015)
	Share of renewable energy in total final energy consumption (%)	(a)	●	2010	SE4All (2016)
8	Unemployment rate (% of total labor force)	(b)	●	2015	ILO (2016)
	Automated teller machines (ATMs per 100,000 adults)		●	2009-2014	IMF Financial Access Survey (2015)
	Adjusted growth rate (%)		o	2012	OECD (2016)
	Youth not in employment, education or training (NEET) (%)	(a)	●	2013-2014	OECD (2016a)
	Percentage of children 5–14 years old involved in child labor (%)		●	2000-2014	UNICEF (2015)
	Employment-to-Population ratio (%)	(a)	●	2014	OECD (2016a)
9	Research and development expenditure (% of GDP)		●	2005-2012	UNESCO (2016)
	Research and development researchers (per 1000 employed)	(a)	o	2010-2014	OECD (2016a)
	Logistics Performance Index: Quality of trade and transport-related infrastructure (1-5)		-	2014	World Bank (2016)
	Quality of overall infrastructure (1-7)		-	2014/2015	WEF GCR 2015-2016
	Mobile broadband subscriptions (per 100 inhabitants)		o	2012-2015	ITU (2015)
	Proportion of the population using the internet (%)		●	2014	ITU (2015)
	Patent applications filed under the PCT in the inventor's country of residence (per million population)	(a)	-	2012	OECD (2016a)
10	Gini index (0-100)		-	2003-2012	World Bank (2016); OECD (2016a)
	Palma ratio	(a)	-	2009-2012	OECD (2016a)
	PISA Social Justice Index (0-10)	(a)	-	2012	OECD PISA (2012)
11	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM2.5) ($\mu g/m^3$) in urban areas		●	2013	Brauer et al. (2015)
	Rooms per person	(a)	-	2001-2013	OECD (2016a)
	Improved water source, piped (% of urban population with access)		-	2015	WHO & UNICEF (2016)
12	Percentage of anthropogenic wastewater that receives treatment (%)		●	2012	OECD (2016a)
	Municipal solid waste (kg/year/capita)	(b)	-	2012	World Bank (2016)
	Non-recycled municipal solid waste (kg/person/year)	(a)	o	2009-2013	OECD (2016a)
13	Energy-related CO_2 emissions per capita (tCO_2/capita)		-	2011	World Bank (2016)
	Climate Change Vulnerability Monitor (0-1)		-	2014	HCSS (2014)
14	Ocean Health Index Goal - Clean Waters (0-100)		o	2015	Ocean Health Index (2015)
	Ocean Health Index Goal - Biodiversity (0-100)		o	2015	Ocean Health Index (2015)
	Ocean Health Index Goal - Fisheries (0-100)		o	2015	Ocean Health Index (2015)

Table 3. Indicators included in the SDG Index and Dashboards (continued)

SDG	Indicator	Notes	IAEG-SDGs **	Year(s)*	Source
	Marine sites of biodiversity importance that are completely protected (%)		●	2013	BirdLife International, IUCN & UNEP-WCMC (2016)
	Percentage of fish stocks overexploited or collapsed by EEZ (%)		●	2010	Hsu et al. (2016) / Sea Around Us (2016)
15	Red List Index of species survival (0-1)		o	2016	IUCN and BirdLife International (2016)
	Annual change in forest area (%)		o	2012	YCELP & CIESIN (2014)
	Terrestrial sites of biodiversity importance that are completely protected (%)		●	2013	BirdLife International, IUCN & UNEP-WCMC (2016)
16	Homicides (per 100,000 people)		●	2008-2012	UNODC (2016)
	Prison population (per 100,000 people)		-	2002-2013	ICPR (2014)
	Proportion of the population who feel safe walking alone at night in the city or area where they live. (%)		●	2006-2015	Gallup (2015)
	Corruption Perception Index (0-100)		-	2014	Transparency International (2015)
	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age (%)		●	2014	UNICEF (2013)
	Government efficiency (1-7)		-	2015/2016	WEF(2015)
	Property rights (1-7)		-	2014/2015	WEF (2015)
17	For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% of GNI)		●	2013	OECD (2016a)
	For all other countries: Tax revenue (% of GDP)		●	2013	World Bank (2016)
	Health, education and R&D spending (% of GDP)		-	2005-2014	UNDP (2015)

Source: Authors' analysis

* Indicators marked (a) are included in the Augmented SDG Index and Dashboards for OECD countries only. Indicators marked (b) are not included in the Augmented SDG Index and Dashboards for OECD countries, as they are replaced by corresponding indicators (unemployment is replaced by the employment-to-population ratio, and municipal solid waste is replaced by recycled municipal solid waste)

** ● indicators included in IAEG-SDGs provisional Tier 1 indicators; O indicators similar to the IAEG-SDGs provisional Tier 1 Indicators (IAEG-SDGs 2016)

*** Data for the latest available year are used i.e. data refer to the most recent year available during the period specified.

2.Methodology for constructing the SDG Index

The procedure for calculating the SDG Index has four steps: (i) perform statistical tests for normality and remove extreme values from the distribution; (ii) rescale the data to ensure comparability; (iii) aggregate the indicators within and across SDGs; and (iv) conduct sensitivity and other statistical test. These steps are briefly described in this section. Table 4 describes the summary statistics for the variables included in the SDG Index and Dashboards.

Table 4. Summary Statistics for Indicators included in the SDG Index

SDG	Description/Label	N [1/]	Mean [2/]	SD [3/]	Min [4/]	Max [4/]
1	Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)	166	14.62	21.97	0	81.76
	Poverty rate after taxes and transfers, poverty line 50% (% of population)	34	11.26	4.25	21	6
2	Prevalence of undernourishment (% of population)	163	10.09	10.99	1.17	53.40
	Cereal yield (t/ha)	172	3.25	2.14	0.04	11.54
	Prevalence of stunting (low height-for-age) in children under 5 years of age (%)	143	22.08	13.83	0	57.7
	Prevalence of wasting in children under 5 years of age (%)	143	5.97	4.89	0	22.7
	Sustainable Nitrogen Management Index (0-1)	136	0.77	0.20	0.28	1.28
	Prevalence of obesity, BMI ≥ 30 (% of adult population)	189	19.06	10.45	2.20	47.60
3	Mortality rate, under-5 (per 1,000 live births)	191	31.99	32.81	1.9	156.9
	Maternal mortality rate (per 100,000 live births)	191	161.32	230.14	0	1360
	Neonatal mortality rate (per 1000 live births)	191	13.62	11.35	0	48.7
	Physician density (per 1000 people)	174	1.56	1.55	0.01	7.74
	Incidence of tuberculosis (per 100,000 people)	191	120.11	158.66	0	852
	Traffic deaths rate (per 100,000 people)	177	16.77	9,96	0	73.4
	Adolescent fertility rate (births per 1,000 women ages 15-19)	183	55,49	48.17	0.70	229
	Subjective wellbeing (average ladder score, 0-10)	152	5.37	1.16	2.84	7.59
	Healthy life expectancy at birth (years)	191	61.54	8.02	39	76
	Percentage of surviving infants who received 2 WHO-recommended vaccines (%)	191	86.13	14.61	22	99
	Daily smokers (% of population aged 15+)	34	19.83	5.72	10.70	38.90
4	Expected years of schooling (years)	186	12.87	2.88	4.1	20.22
	Literacy rate of 15-24 year olds, both sexes (%)	148	88.34	16.83	23.52	100
	Net primary school enrolment rate (%)	137	91.44	8.84	37.69	100
	Population aged 25-64 with tertiary education (%)	34	31.50	9.83	14.03	51.32
	PISA score (0-600)	60	468.99	47.00	375	542.67
	Population aged 25-64 with upper secondary and post-secondary non-tertiary educational attainment (%)	34	17.22	13.27	0	56.53
5	Proportion of seats held by women in national parliaments (%)	191	20.61	12.15	0	63.80
	Female mean years of schooling of population aged 25 and above (% of male)	167	86.18	20.28	22.61	134.2
	Female labor force participation rate (% of male)	121	72.14	18.48	14.9	109.76
	Estimated demand for contraception that is unmet (% of women married or in union, ages 15-49)	182	39.01	20.89	5.41	93.01
	Gender wage gap (% of male median wage)	26	14.35	6.77	6.17	36.30
6	Access to improved water source (% of population)	189	88.23	15.20	31.7	100
	Access to improved sanitation facilities (% of population)	188	72.35	29.18	6.7	100
	Freshwater withdrawal (% of total renewable water resources)	171	51.79	229.48	0.01	2075
7	Access to electricity (% of population)	192	77.17	30.76	5.06	100
	Access to non-solid fuels (% of population)	191	64.37	35.14	0	99.90
	CO_2 emissions from fuel combustion and electricity output ($MtCO_2$/TWh)	134	1.43	0.89	0.08	6.11
	Share of renewable energy in total final energy consumption (%)	34	6.11	16.51	0.70	84.70

Table 4. Summary statistics (continued)

SDG	Description/Label	N [1/]	Mean [2/]	SD [3/]	Min [4/]	Max [4/]
8	Unemployment rate (% of total labor force)	177	9.27	7.46	0.24	53.93
	Automated teller machines (ATMs per 100,000 adults)	179	46.64	46.43	0.40	290.66
	Adjusted growth rate (%)	184	-2.07	2.95	5.41	-16.55
	Youth not in employment, education or training (NEET) (%)	34	15.29	6.09	6.58	31.56
	Percentage of children 5–14 years old involved in child labor (%)	162	10.77	12.03	0.00	49.00
	Employment-to-Population ratio (%)	34	60.14	10.41	28.73	78.51
9	Research and development expenditure (% of GDP)	161	0.65	0.92	0	4.04
	Research and development researchers (per 1000 employed)	34	8.67	3.61	0.83	17.38
	Logistics Performance Index: Quality of trade and transport-related infrastructure (1-5)	163	2.75	0.65	1.5	4.32
	Quality of overall infrastructure (1-7)	138	4.11	1.06	2.10	6.47
	Mobile broadband subscriptions (per 100 inhabitants)	142	34.57	32.81	0	149.30
	Proportion of the population using the internet (%)	187	43.64	29.48	0	98.16
	Patent applications filed under the PCT in the inventor's country of residence (per million population)	34	116.20	104.09	1.83	343.10
10	Gini index (0-100)	146	39.77	9.32	24.9	65.77
	Palma ratio	34	1.26	0.53	0.82	3.26
	PISA Social Justice Index (0-10)	28	5.60	1.09	3.57	7.48
11	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM2.5) ($\mu g/m^3$) in urban areas	186	18.24	11.24	4.36	70.13
	Rooms per person	34	1.69	0.42	1	2.50
	Improved water source, piped (% of urban population with access)	173	74.59	29.57	3.48	100
12	Percentage of anthropogenic wastewater that receives treatment (%)	172	25.75	32.40	0	100
	Municipal solid waste (kg/year/capita)	159	1.52	1.54	0.09	14.4
	Non-recycled municipal solid waste (kg/person/year)	32	1.43	0.44	0.52	2.36
13	Energy-related CO_2 emissions per capita (tCO_2/capita)	188	4.63	6.25	0.02	44.02
	Climate Change Vulnerability Monitor (0-1)	158	0.11	0.09	0.01	0.43
14	Ocean Health Index Goal - Clean Waters (0-100)	148	65.49	11.08	34.74	93.92
	Ocean Health Index Goal - Biodiversity (0-100)	148	83.63	7.40	64.67	98.26
	Ocean Health Index Goal - Fisheries (0-100)	146	57.53	24.52	1	98
	Marine sites of biodiversity importance that are completely protected (%)	134	18.92	25.24	0	100
	Percentage of fish stocks overexploited or collapsed by EEZ (%)	112	32.12	25.35	0.02	95.01
15	Red List Index of species survival (0-1)	192	0.86	0.10	0.40	0.99
	Annual change in forest area (%)	179	6.93	12.32	0	100.73
	Terrestrial sites of biodiversity importance that are completely protected (%)	188	18.93	20.72	0	100
16	Homicides (per 100,000 people)	192	8.55	11.25	0	90.40
	Prison population (per 100,000 people)	188	165.77	131.94	6	716
	Proportion of the population who feel safe walking alone at night in the city or area where they live. (%)	156	61.08	15.35	13.82	92.31
	Corruption Perception Index (0-100)	162	42.30	20.24	8	91
	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age (%)	160	81.09	26.16	2.3	100
	Government efficiency (1-7)	138	3.63	0.77	1.41	5.77
	Property rights (1-7)	138	4.33	0.96	1.59	6.42
17	For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% of GNI)	28	0.41	0.33	0.10	1.41
	For all other countries: Tax revenue (% of GDP)	128	28.59	15.35	8.36	107.49
	Health, education and R&D spending (% of GDP)	120	12.72	4.59	2.56	25.12

Source: Authors' calculations

Notes: 1/ The number of non-missing data values N; 2/ The average of the data values; 3/ The sample standard deviation (SD) measures the average distance between a single observation and the mean and equals the square root of the sample variance; 4/ The smallest and The largest data value

2.1. Statistical tests on raw data

Using a broad array of indicators, we conduct a number of statistical tests, including skewness and kurtosis test for normality as well as Shapiro–Wilk and Shapiro–Francia tests, to determine whether the variables considered in the SDG Index are normally distributed. For most indicators we can reject the normality hypothesis at the 5% significance level. When the assumption of normality is violated, some common statistical techniques become invalid.

Z-scores are the most commonly used method in constructing composite indices (OECD 2008), but we see several reasons for not applying this approach to data underlying the SDG Index and Dashboards. First, available data are not normally distributed. In many cases the departure from a normal distribution is substantial (e.g. extreme poverty, access to electricity, R&D expenditure). Second, the objective of the SDGs is to encourage and support all countries in achieving ambitious quantitative goals and to end certain forms of deprivation by leaving no one behind. In other words the objective is to depart from a normal distribution. Finally, Z-scores help us understand how countries perform relatively to one another by specifying the relative location of each measurement within a certain interval. Yet, what's far more important from a policy perspective is how far a country is from reaching quantitative thresholds associated with achieving the SDGs.

2.2. Rescaling and addressing extreme values

To make the data comparable across indicators each variable is rescaled from 0 to 100 with 0 denoting worst performance and 100 describing the optimum. As a first step for rescaling we need to define the upper and lower bounds for each distribution using consistent approaches that are in line with the SDGs.

Where possible we use absolute goal thresholds to denote the upper bound for each distribution. These are derived from technically feasible maxima or thresholds that must be met to achieve sustainable development and to leave no one behind. For example, the upper boundary for access to basic infrastructure is set at 100%, and gender variables are bounded at perfect equality between men and women. For some variables no absolute upper bounds can be identified in this way as it may be technically impossible to achieve certain absolute limits (e.g. zero child mortality, zero deaths from road accidents, or zero Gini index). In such cases we consider the average of the five best performers among countries in the sample as the upper threshold. Each distribution is then truncated at the upper bound.

In some cases the upper limit exceeds 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 many countries have already exceeded this threshold (i.e. have mortality rates under 25 per 1000). See Table 7 and the online metadata for a full description of the thresholds used for each variable. By defining the technical maximum as the "best" outcome (e.g. 0 mortality per 1000) – not 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.

To remove the effect of extreme values, which can skew the results of a composite index, the OECD (2008) recommends truncating the data by removing the bottom 2.5 percentiles from the distribution. We apply this approach to the lower threshold and truncate data at this level. In this way we attenuate the impact of extreme values at the bottom end of the distribution on the SDG Index scores.

After establishing the upper and lower bounds, variables are transformed linearly to a scale between 0 and 100. This is achieved by subtracting the lower threshold and then dividing by the range of the indicator values.[3] Any resulting values above 100 are set equal to 100, and negative values are set equal to 0. This formula ensures that all rescaled variables are expressed as ascending variables (i.e. higher values denote better performance). In this way the rescaled data become easy to interpret: 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.

2.3. Aggregation

As a normative assumption we give equal weight to every SDG to reflect policymakers' commitment to treat all SDGs equally and as an "integrated and indivisible" set of goals (UN 2015, paragraph 5). This approach also allows for the later addition of new variables for a particular SDG without affecting the relative weight of each SDG in the overall score. For this reason the aggregation for the SDG Index proceeds in two steps. First, the rescaled variables are combined for each SDG before being aggregated across goals.

In its present form, the SDG Index has too few variables to employ a nested CES function. **Box 1** reviews common alternative functional forms for aggregating multiple indicators into a composite index and their implications for the results: the arithmetic average, the geometric mean, or the Leontief production function. After careful consideration of the three options, we selected the arithmetic mean to aggregate within each SDG for two reasons: First, each goal generally describes complementary policy priorities with a reasonable degree of substitutability. Second, the arithmetic mean has the benefit of being easy to communicate.

Every variable within an SDG is given equal weight. This implies that the relative weight of an indicator in a particular goal is inversely proportional to the number of indicators available for that goal.

Since the SDGs are an integrated and indivisible agenda requiring progress towards all goals, one cannot assume perfect substitutability across goals, as required for using the arithmetic mean. On the other hand, the Leontief minimum function would give excessive weight to the single SDG where a country performs worst. We

[3] The rescaling formula of the range [0; 100] is given as $x' = \frac{x - lower\ (x)}{upper(x) - \mathrm{lower}(x)}$ where x is raw data value, upper/lower denote the thresholds for best and worst performance, respectively, and x' is the normalized value after rescaling;

have therefore considered both the arithmetic and geometric averages as two plausible approaches. Fortunately, the two approaches yield results that are almost identical (correlation coefficient 0.977, and nearly identical ranking). As a further robustness test we have calculated the median rank between the arithmetic and geometric ranks (Table 5). The volatility between ranks is very limited – only several countries have more than 10 positions difference between the arithmetic and the median rank. These differences are due to the use of geometric mean, which, unlike the arithmetic mean, penalizes significantly very low scores on specific goals. We therefore decided to proceed with the most straightforward aggregation, a simple numerical average. This has the benefit of giving the resulting index a natural and intuitive meaning. A score of X% (say 70%) signifies that on average the country stands X% of the way from worst to best across the 17 SDGs.

Box 1. Methodologies for generating aggregate indices

As demonstrated by Rickels *et al.* (2014) for the case of the Ocean Health Index and more generally by OECD (2008), the method for aggregating different variables into dashboards or index can have significant implications on the overall results. To allow for maximum flexibility in aggregating data across each SDG *j,* one can use the generalized means or constant-elasticity-of-substitution (CES) function (Arrow et al. 1961, Blackorby and Donaldson 1982) to generate an aggregate index *I*.

$$I(N, I_j, \rho) = \left[\sum_{j=1}^{N} \frac{1}{N} I_j^{-\rho}\right]^{-\frac{1}{\rho}}$$

Where *N* denotes the number of variables to be aggregated per SDG. The substitution parameter ρ describes the substitutability across components of the indicator with a permissible range of $-1 \leq \rho \leq \infty$ (Arrow et al. 1961). It yields the elasticity of substitution σ across components of the SDG Index:

$$\sigma = \frac{1}{1+\rho}$$

With $0 \leq \sigma \leq \infty$ and

$$\rho = \frac{1-\sigma}{\sigma}$$

Three special cases of this CES function are frequently considered. First, if the components of the aggregate index are perfect substitutes ($\sigma = \infty$, $\rho = -1$) then regress on one indicator (e.g. Gini index) can be offset by a gain on another indicator (e.g. child mortality rate). This case is often referred to as "weak sustainability". The CES function with equal weights across components then assumes the form of the arithmetic mean:

$$I(N, I_j) = \sum_{j=1}^{N} \frac{1}{N} I_j$$

Strong sustainability occurs when the components of the SDG Index are not substitutable ($\sigma = 0$, $\rho = \infty$). In this case the CES function turns into a Leontief production function with orthogonal isoquants where the aggregate index *I* is determined by the lowest-scoring component I_j:

$$I(I_j) = Min\{I_j\}$$

Finally, an intermediate case of linear substitutability is given by the Cobb-Douglas production function with $\sigma = 1$ and $\rho = 1$. In this case the aggregate index *I* becomes the geometric mean of the components I_j:

$$I(N, I_j) = \prod_{j=1}^{N} \sqrt[N]{I_j}$$

The geometric mean is often used to aggregate heterogeneous variables with limited substitutability and in cases where the focus of the analysis is on relative changes in variables instead of absolute changes. A prominent example is the Human Development Index (HDI), which changed its method of aggregation across three dimensions from arithmetic to geometric mean in 2010 (UNDP 2015).

Table 5. SDG Indices obtained by arithmetic mean and geometric average across SDG scores

		Arithmetic mean		Median rank	
Country	ID	Rank	Score	Rank	Difference
Sweden	SWE	1	84.5	1	0
Denmark	DNK	2	83.9	2	0
Norway	NOR	3	82.3	3	0
Finland	FIN	4	81.0	5	-1
Switzerland	CHE	5	80.9	4	1
Germany	DEU	6	80.5	6	0
Austria	AUT	7	79.1	7	0
Netherlands	NLD	8	78.9	8	0
Iceland	ISL	9	78.4	15	-3
United Kingdom	GBR	10	78.1	10	0
France	FRA	11	77.9	9	1
Belgium	BEL	12	77.4	11	1
Canada	CAN	13	76.8	14	-1
Ireland	IRL	14	76.7	12	1
Czech Republic	CZE	15	76.7	17	-1
Luxembourg	LUX	16	76.7	13	2
Slovenia	SVN	17	76.6	16	1
Japan	JPN	18	75.0	19	-1
Singapore	SGP	19	74.6	28	-5
Australia	AUS	20	74.5	20	0
Estonia	EST	21	74.5	18	2
New Zealand	NZL	22	74.0	22	0
Belarus	BLR	23	73.5	24	-1
Hungary	HUN	24	73.4	21	2
United States	USA	25	72.7	23	1
Slovak Republic	SVK	26	72.7	31	-3
Korea, Rep.	KOR	27	72.7	30	-2
Latvia	LVA	28	72.5	26	1
Israel	ISR	29	72.3	25	2
Spain	ESP	30	72.2	33	-2
Lithuania	LTU	31	72.1	29	1
Malta	MLT	32	72.0	27	3
Bulgaria	BGR	33	71.8	32	1
Portugal	PRT	34	71.5	36	-1
Italy	ITA	35	70.9	35	0
Croatia	HRV	36	70.7	34	1
Greece	GRC	37	69.9	37	0
Poland	POL	38	69.8	38	0
Serbia	SRB	39	68.3	39	0
Uruguay	URY	40	68.0	40	0
Romania	ROU	41	67.5	42	-1
Chile	CHL	42	67.2	44	-1
Argentina	ARG	43	66.8	47	-2
Moldova	MDA	44	66.6	43	1
Cyprus	CYP	45	66.5	48	-2
Ukraine	UKR	46	66.4	51	-3
Russian Federation	RUS	47	66.4	41	3
Turkey	TUR	48	66.1	46	1
Qatar	QAT	49	65.8	45	2
Armenia	ARM	50	65.4	53	-2
Tunisia	TUN	51	65.1	49	1
Brazil	BRA	52	64.4	50	1
Costa Rica	CRI	53	64.2	52	1
Kazakhstan	KAZ	54	63.9	59	-3
United Arab Emirates	ARE	55	63.6	58	-2
Mexico	MEX	56	63.4	57	-1
Georgia	GEO	57	63.3	54	2
Macedonia, FYR	MKD	58	62.8	60	-1
Jordan	JOR	59	62.7	61	-1
Montenegro	MNE	60	62.5	80	-10
Thailand	THA	61	62.2	55	3
Venezuela, RB	VEN	62	61.8	65	-2
Malaysia	MYS	63	61.7	63	0
Morocco	MAR	64	61.6	56	4
Azerbaijan	AZE	65	61.3	68	-2
Egypt, Arab Rep.	EGY	66	60.9	66	0
Kyrgyz Republic	KGZ	67	60.9	88	-11
Albania	ALB	68	60.8	62	3
Mauritius	MUS	69	60.7	75	-3
Panama	PAN	70	60.7	67	2
Ecuador	ECU	71	60.7	64	4
Tajikistan	TJK	72	60.2	71	1
Bosnia and Herzegovina	BIH	73	59.9	92	-10
Oman	OMN	74	59.9	76	-1
Paraguay	PRY	75	59.3	78	-2
China	CHN	76	59.1	69	4

Table 5. SDG Indices obtained by arithmetic mean (continued)

Country	ID	Arithmetic mean Rank	Arithmetic mean Score	Median rank Rank	Median rank Difference
Jamaica	JAM	77	59.1	72	3
Trinidad and Tobago	TTO	78	59.1	97	-10
Iran, Islamic Rep.	IRN	79	58.5	77	1
Botswana	BWA	80	58.4	70	5
Peru	PER	81	58.4	81	0
Bhutan	BTN	82	58.2	74	4
Algeria	DZA	83	58.1	79	2
Mongolia	MNG	84	58.1	73	6
Saudi Arabia	SAU	85	58.0	113	-14
Lebanon	LBN	86	58.0	84	1
Suriname	SUR	87	58.0	82	3
Vietnam	VNM	88	57.6	83	3
Bolivia	BOL	89	57.5	85	2
Nicaragua	NIC	90	57.4	87	2
Colombia	COL	91	57.2	89	1
Dominican Republic	DOM	92	57.1	93	-1
Gabon	GAB	93	56.2	90	2
El Salvador	SLV	94	55.6	95	-1
Philippines	PHL	95	55.5	91	2
Cabo Verde	CPV	96	55.5	86	5
Sri Lanka	LKA	97	54.8	116	-10
Indonesia	IDN	98	54.4	96	1
South Africa	ZAF	99	53.8	118	-10
Kuwait	KWT	100	52.5	129	-15
Guyana	GUY	101	52.4	112	-6
Honduras	HND	102	51.8	100	1
Nepal	NPL	103	51.5	99	2
Ghana	GHA	104	51.4	94	5
Iraq	IRQ	105	50.9	106	-1
Guatemala	GTM	106	50.0	103	2
Lao PDR	LAO	107	49.9	98	5
Namibia	NAM	108	49.9	125	-9
Zimbabwe	ZWE	109	48.6	101	4
India	IND	110	48.4	102	4
Congo, Rep.	COG	111	47.2	127	-8
Cameroon	CMR	112	46.3	109	2
Lesotho	LSO	113	45.9	110	2
Senegal	SEN	114	45.8	104	5
Pakistan	PAK	115	45.7	120	-3
Swaziland	SWZ	116	45.1	107	5
Myanmar	MMR	117	44.5	121	-2
Bangladesh	BGD	118	44.4	124	-3
Cambodia	KHM	119	44.4	132	-7
Kenya	KEN	120	44.0	105	8
Angola	AGO	121	44.0	108	7
Rwanda	RWA	122	44.0	119	2
Uganda	UGA	123	43.6	117	3
Cote d'Ivoire	CIV	124	43.5	114	5
Ethiopia	ETH	125	43.1	115	5
Tanzania	TZA	126	43.0	111	8
Sudan	SDN	127	42.2	135	-4
Burundi	BDI	128	42.0	143	-8
Togo	TGO	129	40.9	123	3
Benin	BEN	130	40.0	122	4
Malawi	MWI	131	39.8	144	-7
Mauritania	MRT	132	39.6	126	3
Mozambique	MOZ	133	39.5	136	-2
Zambia	ZMB	134	38.4	130	2
Mali	MLI	135	38.2	131	2
Gambia, The	GMB	136	37.8	128	4
Yemen, Rep.	YEM	137	37.3	138	-1
Sierra Leone	SLE	138	36.9	133	3
Afghanistan	AFG	139	36.5	142	-2
Madagascar	MDG	140	36.2	141	-1
Nigeria	NGA	141	36.1	148	-4
Guinea	GIN	142	35.9	139	2
Burkina Faso	BFA	143	35.6	137	3
Haiti	HTI	144	34.4	134	5
Chad	TCD	145	31.8	140	3
Niger	NER	146	31.4	146	0
Congo, Dem. Rep.	COD	147	31.3	145	1
Liberia	LBR	148	30.5	147	1
Central African Republic	CAF	149	26.1	149	0

Source: Authors' calculations * Median rank is calculated between the arithmetic and geometric means.

2.4. Country coverage and missing data

Since the SDG Index compares countries it is important to avoid excessive bias through missing variables. We include all countries that have data for at least 80% of the variables included in the global SDG Index or the Augmented SDG Index for OECD countries. All OECD countries have sufficient data for inclusion, and 149 countries meet this test globally, including several countries with a national population less than 1 million. Table 6 lists the countries that are not included in this version of the SDG Index.

Among the countries excluded from this year's SDG Index and Dashboards are 31 small countries with populations of less than 1 million people. Countries with insufficient data availability fall into the following income categories, as defined by the World Bank: 12 high-income countries, 14 upper-middle-income countries, 8 lower-middle-income countries, and 6 low-income countries. Many of these countries face major challenges in achieving the SDGs, so investing in their capacity to generate high-quality data is a priority for early action on the goals.

Table 6. Countries not included in the SDG Index and Dashboards due to insufficient data

Country	Missing Values	Country	Missing Values	Country	Missing Values
Andorra	56%	Guinea-Bissau	23%	Seychelles	24%
Antigua and Barbuda	44%	Kiribati	40%	Solomon Islands	32%
Bahamas, The	37%	Korea, Dem. Rep.	40%	Somalia	37%
Bahrain	21%	Libya	27%	South Sudan	37%
Barbados	31%	Liechtenstein	63%	St. Kitts and Nevis	50%
Belize	26%	Maldives	24%	St. Lucia	37%
Brunei Darussalam	40%	Marshall Islands	47%	St. Vincent and the Grenadines	47%
Comoros	27%	Micronesia, Fed. Sts.	45%	Syrian Arab Republic	21%
Cuba	23%	Monaco	55%	Timor-Leste	23%
Djibouti	24%	Nauru	n/a*	Tonga	37%
Dominica	45%	Palau	47%	Turkmenistan	29%
Equatorial Guinea	32%	Papua New Guinea	29%	Tuvalu	56%
Eritrea	27%	Samoa	40%	Uzbekistan	23%
Fiji	27%	San Marino	65%	Vanuatu	31%
Grenada	48%	Sao Tome and Principe	26%		

Source: Authors' calculations

* Nauru was excluded from the analysis as the World Development Indicators database and most other datasets do not contain any data for the country.

2.5.Correlation analysis and robustness tests

A correlation analysis shows significant correlation between the indicators and the index score when taken over all countries. Nevertheless this is not a reason to consider indicators redundant and reduce the number of indicators as the correlation varies among different countries. A composite index that includes indicators with high internal correlation provides robust rankings based on changes in the selection of weights and the normalization method. Moreover, the correlation between the SDG Index and other common metrics for human development or social progress is robust to different specifications of the SDG Index.

Next, we perform robustness analysis to check the sensitivity of the results to different specifications of the upper and lower threshold. Rescaling is usually very sensitive to the choice of limits and extreme values (outliers) at both tails of the distribution. The latter may become unintended thresholds and introduce spurious variability in the data. In other words, the choice of upper and lower bounds can affect the relative ranking of countries in the index. This applies in particular to the lower threshold that affects the value and the units of the variable, which may in turn affect rankings, while the upper threshold only affects the units.[4] In addition, the contribution to the composite indicator might change significantly if the range of values considered for the indicators vary across the variables. Moreover, some data series lack timeliness (i.e. they are measured during different years) and may include incomparable extreme observations.

We test whether the linear transformation is robust to different specifications of the upper and lower thresholds (Zwillinger and Kokoska, 2000). Data are normalized using a lower threshold above the 2.5 percentile and an upper threshold based on a combination of technical optima or the average of the five best performers if such an optimum cannot be determined. The robustness specification considers a raw data baseline sample and two additional symmetric options: averaging across ten (instead of five) lowest/best performers and trimming values outside the 2.5 and 97.5 percentile, i.e. lowering and raising values to match the 97.5 and 2.5 percentiles, respectively. This robustness test shows only a limited number of countries' rankings in our data sample are affected by the choice of thresholds. By calculating the difference between the baseline and these threshold choices we find that the variability in rankings among the top ten countries is particularly limited. We conclude that averaging across the five best performers is the most consistent and invariant approach when specific absolute thresholds are not available for the upper bounds.

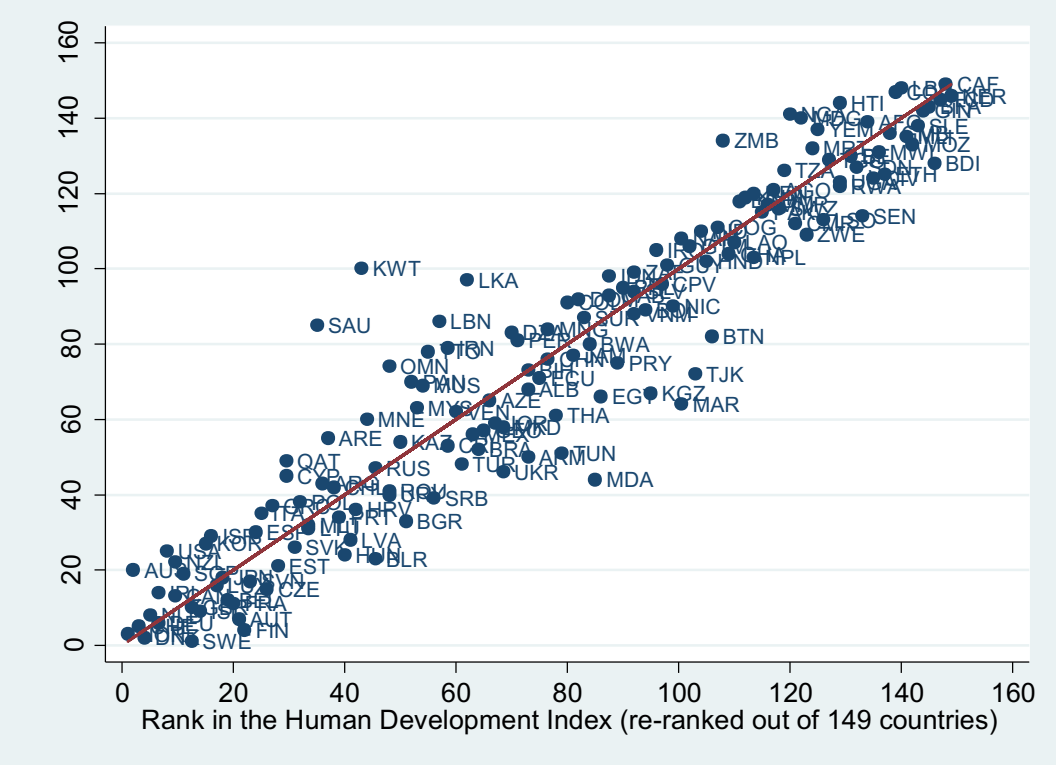
[4] A change in the lower threshold affects the units of measurement (α) and the value of the variable. In other words for the ranking the lower threshold matters more than the upper threshold $x' = \frac{x - lower(x)}{upper(x) - lower(x)} = \alpha\,(x - lower(x))$

2.6. Comparison with the Human Development Index (HDI)

Figure 2 compares countries' ranking according to the Human Development Index (HDI) (UNDP 2015) and the SDG Index obtained by re-ranking the HDI for the 149 countries included in the SDG Index. It shows significant correlation, but also substantial variation for a few countries, particularly from the MENA region. Some countries from the region are ranked 30-40 places lower in the SDG Index compared with the HDI suggesting that they do well in meeting basic human development needs, but perform worse on other dimensions of the SDGs. See the online country profiles for a comparison of each country's SDG Index score with the HDI and other composite development indices.

The overall high correlation stems from the fact that the HDI measures core dimensions of human development (health, education, income) that correlate well with many SDGs. The variation then derives from additional dimensions introduced by the SDGs, including environmental sustainability, peace and security, governance, inequality, and so forth. The chart shows that focusing on human development alone will divert policymakers' attention from critical development objectives enshrined in the SDGs.

Figure 2. Comparison of rankings by SDG Index and by Human Development Index



Source: UNDP (2015) and authors' calculations
Note: Refer to Table 5 for country codes

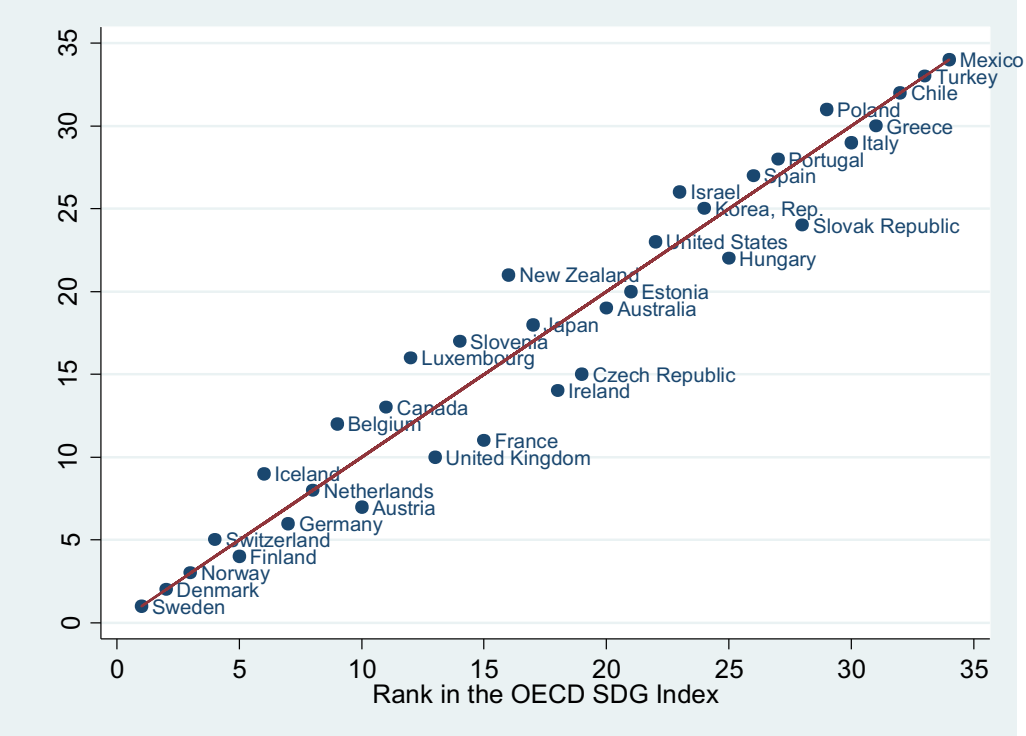
Comments on earlier versions of the SDG Index have pointed to the high correlation between the SDG Index and the HDI to question whether the former adequately captures the transformative nature of the SDGs. It is likely that some missing indicators for some SDG priorities, where rich countries tend to fare worse (e.g. sustainable consumption and production), increase the correlation between the SDG Index and the HDI. However, countries with higher levels of human development do tend to perform better on most SDGs, including goals on economic development and social inclusion. Likewise, rich countries tend to have better outcomes on a number of (local) environmental priorities, including access to wastewater treatment, deforestation rates, and rates of biodiversity loss. On balance, any SDG Index that weights each of the 17 goals equally would correlate significantly with the HDI.

The SDG Index will be most useful for comparing relative performance among countries from a similar regional or income group. The substantial variation observed within such country groups should mobilize policymakers to better understand reasons for divergence and design strategies for closing the performance gap to other countries.

2.7. Comparison of global SDG Index and Augmented SDG Index for OECD countries

The global SDG Index and the Augmented SDG Index for OECD countries both cover the 34 member countries of the OECD. Figure 3 compares the ranking of the OECD countries in the Global SDG Index (Table 1) and the Augmented OECD Index (Table 2). Overall, the variation across the two indices is low, and they exhibit a high degree of correlation (correlation coefficient of 0.942). The variation is explained by the inclusion of additional variables in the Augmented SDG Index for OECD countries that allow for greater differentiation across countries.

Figure 3. Rank comparison for OECD countries in global SDG Index and Index for OECD countries



Source: Author's calculations

3. Methodology for constructing the SDG Dashboards

The SDG Dashboards, found in the country pages, use the same data as the SDG Index. We introduce quantitative thresholds for each indicator to group countries in a "traffic-light" table. Aggregating across all indicators for a goal yields an overall score for each SDG and each country.

3.1. Generating the Dashboard thresholds

To assess a country's progress on a particular indicator, we consider three bands (i) the green band is bounded by the maximum that can be achieved for each variable (section 2.2 above) and the threshold for achieving the SDG; (ii) an intermediate yellow band is bounded by SDG achievement at the top and a threshold denoting significant challenges in achieving the SDGs; and (iii) a red band that describes cases where major challenges must be overcome if a country is to achieve the SDGs. This red band is bounded at the bottom by a threshold denoting worst performance in the sample (section 2.2 above). Where possible, the thresholds are derived from the SDGs, their targets, or other official sources. All thresholds are specified in absolute terms and described in Table 7. Detailed country-level data are available in the online country profiles and the online metadata. The thresholds are the same for all countries and were subject to extensive consultations with expert communities.

Table 7. Indicator thresholds used in the SDG Dashboards

SDG	Description/Label	Best (= 100)	Green	Yellow	Red	Worst (= 0)
1	Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)	0%	<2%	2% <= value <= 12.7%	>12.7%	68.7%
	Poverty rate after taxes and transfers, Poverty line 50% (% of population)	0%	<10%	10% <= value <= 15%	>15%	21%
2	Prevalence of undernourishment (% of population)	0%	<7.5%	7.5% <= value <= 15%	>15%	41.6%
	Cereal yield (t/ha)	9.3	>2.5	1.5 <= value <= 2.5	<1.5	0.4
	Prevalence of stunting (low height-for-age) in children under 5 years of age (%)	0%	<7.5%	7.5% <= value <= 15%	>15%	49.5%
	Prevalence of wasting in children under 5 years of age (%)	0%	<5%	5% <= value <= 10%	>10%	18.9%
	Sustainable Nitrogen Management Index (0-1)	0	<0.3	0.3 <= value <= 0.7	>0.7	1.1
	Prevalence of obesity, BMI ≥ 30 (% of adult population)	0%	<10%	10% <= value <= 25%	>25%	42.3%
3	Mortality rate, under-5 (per 1,000 live births)	0	<25	25 <= value <= 50	>50	120.4
	Maternal mortality rate (per 100,000 live births)	0	<70	70 <= value <= 140	>140	789
	Neonatal mortality rate (per 1000 live births)	0	<12	12 <= value <= 18	>18	39.7
	Physician density (per 1000 people)	6.3	>3	1 <= value <= 3	<1	0
	Incidence of tuberculosis (per 100,000 people)	0	<10	10 <= value <= 75	>75	561
	Traffic deaths rate (per 100,000 people)	2.1	<8.4	8.4 <= value <= 16.8	>16.8	33.2
	Adolescent fertility rate (births per 1,000 women ages 15-19)	0	<25	25 <= value <= 50	>50	176
	Subjective Wellbeing (average ladder score, 0-10)	10	>6	5 <= value <= 6	<5	3.3
	Healthy Life Expectancy at birth (years)	74.2	>65	60 <= value <= 65	<60	44
	Percentage of surviving infants who received 2 WHO-recommended vaccines	100%	>90%	80% <= value <= 90%	<80%	46%
	Daily smokers (% of population aged 15+)	12.1%	<20%	20% <= value <= 25%	>25%	38.9%

Table 7. Indicator thresholds (continued)

SDG	Description/Label	Best (= 100)	Green	Yellow	Red	Worst (= 0)
4	Expected years of schooling (years)	19.1	>12	10 <= value <= 12	<10	7.2
	Literacy rate of 15-24 year olds, both sexes (%)	100%	>95%	85% <= value <= 95%	<85%	39.3%
	Net primary enrolment rate (%)	100%	>98%	90% <= value <= 98%	<90%	68.7%
	Population aged 25-64 with tertiary education (%)	45.4%	>25%	15% <= value <= 25%	<15%	14%
	PISA score (0-600)	600	>493	400 <= value <= 493	<400	382.7
	Population aged 25-64 with upper secondary and post-secondary non-tertiary educational attainment (%)	100%	>85%	70% <= value <= 85%	<70%	0%
5	Proportion of seats held by women in national parliaments (%)	50%	>40%	20% <= value <= 40%	<20%	0%
	Female years of schooling of population aged 25 and above (% male)	100%	>95%	75% <= value <= 95%	<75%	40.5
	Female labor force participation rate (% male)	100%	>70%	50% <= value <= 70%	<50%	22.5%
	Estimated demand for contraception that is unmet (% of women married or in union, ages 15-49)	0%	<20%	20% <= value <= 50%	>50%	82.9%
	Gender wage gap (Total, % of male median wage)	0%	<7.5%	7.5% <= value <= 15%	>15%	36.3%
6	Access to improved water source (% of population)	100%	>98%	80% <= value <= 98%	<80%	50.8%
	Access to improved sanitation facilities (% of population)	100%	>95%	75% <= value <= 95%	<75%	12.1%
	Freshwater withdrawal as % of total renewable water resources	0%	<20%	20% <= value <= 40%	>40%	374.1 %
7	Access to electricity (% of population)	100%	>98%	80% <= value <= 98%	<80%	9.8%
	Access to non-solid fuels (% of population)	100%	>85%	50% <= value <= 85%	<50%	5%
	CO_2 emissions from fuel combustion / electricity output ($MtCO_2$/TWh)	0	<1	1 <= value <= 1.5	>1.5	3.7
	Share of renewable energy in total final energy consumption (%)	47%	>20%	10% <= value <= 20%	<10%	0.7%
8	Unemployment rate (% of total labor force)	0.8%	<5%	5% <= value <= 10%	>10%	30.1%
	Automated teller machines (ATMs per 100,000 adults)	217.8	>20	10 <= value <= 20	<10	1
	Adjusted Growth (%)	3.7%	>0%	-2% <= value <= 0%	<-2%	-7.3%
	Youth not in employment, education or training (NEET)	8.3%	<10%	10% <= value <= 15%	>15%	31.6%
	Percentage of children 5–14 years old involved in child labor	0%	<2%	2% <= value <= 10%	>10%	39.2%
	Employment-to-Population ratio (%)	73.6%	>60%	50% <= value <= 60%	<50%	28.7%
9	Research and development expenditure (% of GDP)	3.7%	>1.5%	1% <= value <= 1.5%	<1%	0%
	Research and development researchers (per 1000 employed)	15	>8	7 <= value <= 8	<7	0.8
	Logistics Performance Index: Quality of trade and transport-related infrastructure (1-5)	5	>3	2 <= value <= 3	<2	1.8
	Quality of overall infrastructure (1-7)	7	>4.5	3 <= value <= 4.5	<3	2.4
	Mobile broadband subscriptions (per 100 inhabitants)	100%	>75%	50% <= value <= 75%	<50%	0%
	Proportion of the population using the internet (%)	100%	>80%	50% <= value <= 80%	<50%	1.6%
	Patent applications filed under the PCT in the inventor's country of residence (per million population)	305.3	>100	100 <= value <= 50	<50	1.8
10	Gini index (0-100)	25.4	<30	30 <= value <= 40	>40	63.1
	Palma ratio	0.85	<1	1 <= value <= 1.2	>1.2	3.3
	PISA Social Justice Index (0-10)	10	>5.6	4 <= value <= 5.6	<4	3.6
11	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM2.5) ($\mu g/m^3$) in urban areas	0	<10	10 <= value <= 20	>20	48.4
	Rooms per person	2.4	>1.5	1.1 <= value <= 1.5	<1.1	1
	Improved water source, piped (% of urban population with access)	100%	>98%	75% <= value <= 98%	<75%	6.1%
12	Percentage of anthropogenic wastewater that receives treatment (%)	100%	>50%	15% <= value <= 50%	<15%	0%
	Municipal Solid Waste (kg/year/capita)	0.1	<1	1 <= value <= 2	>2	5.4
	Non-Recycled Municipal Solid Waste (MSW in kg/person/year times recycling rate)	0.7	<1	1 <= value <= 1.5	>1.5	2.4
13	Energy-related CO_2 emissions per capita (tCO_2/capita)	0	<2	2 <= value <= 4	>4	20.9
	Climate Change Vulnerability Monitor (0-1)	0	<0.1	0.1 <= value <= 0.2	>0.2	0.4

Table 7. Indicator thresholds (continued)

SDG	Description/Label	Best (= 100)	Green	Yellow	Red	Worst (= 0)
14	Ocean Health Index Goal - Clean Waters (0-100)	100	>70	60 <= value <= 70	<60	44.1
	Ocean Health Index Goal - Biodiversity (0-100)	100	>90	80 <= value <= 90	<80	66.4
	Ocean Health Index Goal - Fisheries (0-100)	100	>70	60 <= value <= 70	<60	2
	Marine sites of biodiversity importance that are completely protected (%)	100%	>50%	10% <= value <= 50%	<10%	0%
	Percentage of Fish Stocks overexploited or collapsed by EEZ (%)	0	<25	25 <= value <= 50	>50	91.7
15	Red List Index of species survival (0-1)	1	>0.9	0.8 <= value <= 0.9	<0.8	0.7
	Annual change in forest area (%)	0.1	<0	0 <= value <= -2	>-2	31
	Terrestrial sites of biodiversity importance that are completely protected (%)	100%	>50%	10% <= value <= 50%	<10%	0%
16	Homicides (per 100,000 people)	0	<1.5	1.5 <= value <= 3	>3	39.9
	Prison population (per 100,000 people)	18	<100	100 <= value <= 200	>200	510
	Proportion of the population who feel safe walking alone at night in the city or area where they live. (%)	100%	>80%	50% <= value <= 80%	<50%	34.8%
	Corruption Perception Index (0-100)	100	>60	40 <= value <= 60	<40	15
	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age (%)	100%	>98%	75% <= value <= 98%	<75%	10.3%
	Government Efficiency (1-7)	7	>4.5	3 <= value <= 4.5	<3	2.5
	Property Rights (1-7)	7	>4.5	3 <= value <= 4.5	<3	2.6
17	For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% of GNI)	1%	>0.7%	0.35% <= value <= 0.7%	<0.35%	0.1%
	For all other countries: Tax revenue (% of GDP)	84.6%	>25%	15% <= value <= 25%	<15%	11%
	Health, Education and R&D spending (% of GDP)	23%	>16%	8% <= value <= 16%	<8%	5.1%

Source: Authors' analysis and calculations

3.2. Aggregating indicators for each SDG

The purpose of the SDG Dashboards is to highlight those SDGs that require particular attention in each country and should be prioritized for early action. Averaging across all indicators for an SDG might hide areas of policy concern. It also creates the risk that poor or missing data obscures major SDG challenges, as in the case of SDG 4 where we lack adequate internationally comparable data on education outcomes or for SDG 12 where basic measures of sustainable consumption and production are missing. This risk is particularly acute for high-income and upper-middle-income countries that have achieved significant progress on many SDG dimensions but may face serious shortfalls on key variables.

The SDG Dashboards therefore use the Leontief Minimum function to aggregate indicator scores for each SDG. This means that the score for each goal is set by the variable on which the country performs worst. This approach generates "tough grades" as our purpose is to highlight the gaps in SDG achievement rather than the bright spots. Thus, when a country has a red rating, it does not mean that it has a low score for every

indicator of that SDG, but rather it scores low ("red") on at least one of the indicators. The online country profiles and the online data provide detailed data for each country allowing the reader to determine a country's performance across every variable.

As described in the report, we present the SDG Dashboards separately for each country. OECD countries have access to more data and possess the resources to make rapid progress towards achieving each SDGs, so we include additional variables in separate Dashboards for OECD countries to complement the more limited global set. Since the OECD produces better and more easily comparable data on unemployment than is available internationally, the corresponding indicator for the Dashboards for OECD countries replaces the variable used in the global SDG Dashboards. Similarly, the indicator on municipal solid waste is replaced by an indicator factoring in recycling rates. All additional variables included in the Dashboards for OECD countries are described in the metadata, and country-level performance for each variable is summarized in the online country profiles.

The report shows that poorer countries, particularly in sub-Saharan Africa, face major challenges across most SDGs. We have therefore also considered using different aggregation methodologies for OECD and non-OECD countries, such as the minimum function and the arithmetic mean. However, such different approaches yielded stark differences in results between countries that were at the intersection of both groups. In particular non-OEDC high-income or upper-middle-income countries ended up with significantly fewer "red" SDGs than their peers inside the OECD. To avoid such arbitrary distinctions we resolved to use the same methodology for entire SDG Dashboards using additional variables where they were readily available in an internationally comparable format, i.e. in the OECD countries.

3.3. Country coverage and missing data

The SDG Dashboards use the indicators identified in Table 3 and includes every UN member country with data for at least 80% of the variables (Table 6). Since ocean data for SDG 14 are only available for countries that have a seashore, we apply the 80% threshold to the 116 non-landlocked countries with a population greater than 1 million. All available data, including for countries not included in the Dashboards, are available online.

Annex 2: Frequently Asked Questions (FAQ) on the SDG Index and Dashboards

Motivation

Q: What are the Sustainable Development Goals (SDGs)?

A: The 17 SDGs were adopted by all member states of the United Nations to guide international collaboration towards sustainable development. They aim to end poverty, tackle inequality, protect the planet, promote peace, and ensure prosperity for all. Each goal has specific targets to be achieved over the next 15 years. See the UN website for more information about the SDGs.

Q: Why develop an SDG Index and how should it be used?

A: The SDG Index aggregates available data on all SDGs into a highly preliminary composite index to provide countries with a quick assessment of how they are performing relative to their peers. In this way the SDG Index can help draw attention to the SDGs and their role as a tool for guiding national policies and long-term strategies for sustainable development. Its purpose is not to compare countries with vastly different development status, but to allow countries to benchmark themselves using a single holistic measure that encompasses all SDGs and treats each goal equally. Just like the SDG Dashboards, the SDG Index is designed to support national discussions on operationalizing the SDGs instead of monitoring progress towards achieving the goals.

The SDG Index (Table 1) shows that rich countries, particularly from Northern Europe, perform best. Yet, this does not mean that Sweden and other highly-ranked countries have achieved the SDGs. As made clear by the SDG Dashboards all countries score "red" in at least two SDGs and "yellow" on a large number of goals. The SDGs require further actions by all countries.

Q: Why develop SDG Dashboards and how should they be used?

A: In early 2016, the UN Statistical Commission recommended some 231 indicators for the SDGs, but for most countries data remain unavailable for the vast majority of these proposed SDG indicators. It will take time and investments in statistical capacity to build-up national data systems so that every country can monitor progress against the official indicators (see also recommendations by the Expert Group on SDG Indicators). Meanwhile, countries need to start the process of operationalizing and implementing the SDGs using data available today. Stakeholder need to agree, which SDGs to tackle as a priority. To facilitate these discussions and to get started with implementing the Goals, the SDG Dashboards present available SDG data visually. No new data were collected for the SDG Index and Dashboards – both are based on published data.

Q: Do the SDG Index and Dashboards replace or compete with official SDG monitoring and indicators?

A: No. The SDG Index and Dashboards are preliminary analytical tools to help governments and other stakeholders take

stock of where they currently stand with regards to achieving the SDGs and to identify priorities for early action. As new data become available they will be included in the SDG Index and Dashboards, which will be published on an annual basis for the next three years. Simultaneously, countries will need to develop a full suite of monitoring systems to track the SDG metrics recommended by the UN Statistical Commission. This will require major investments in statistical capacity development, particularly in poorer countries or those with low statistical capacity. Over time every country should be able to track critical SDG variables to monitor progress towards achieving the goals.

Q: How and by whom were the SDG Index and Dashboards developed?

A: The SDG Index and Dashboards have been jointly developed by the Bertelsmann Stiftung and the Sustainable Development Solutions Network (SDSN), led by scientific co-directors Guido Schmidt-Traub and Christian Kroll. The authors have drawn extensively on the SDG Indicators proposed by the UN Statistical Commission and consulted widely on methodology and appropriate data with experts around the world, including through a public consultation on an earlier draft report. The SDG Index and Dashboards also drew on an earlier prototype SDG Index for OECD countries developed by the Bertelsmann Stiftung and a report on SDG indicators prepared by the SDSN. All data and methodological assumptions are available online.

Q: Why develop separate SDG Index and Dashboards for OECD countries?

A: The report proposes Augmented SDG Index and Dashboards for OECD countries. Both augment the global Index and Dashboards with 15 additional variables to provide a richer assessment of the SDG challenges faced by OECD countries. The inclusion of additional variables holds OECD countries to a higher standard, which is justified since they have the resources to achieve the SDGs. The Augmented SDG Index and Dashboards might also help identify priorities for statistical capacity development and for generating new SDG data in non-OECD countries.

Indicator and data selection

Q: How were the indicators for the SDG Index and Dashboards selected? Why are they not identical to the recently proposed official SDG Indicators?

A: The SDG Index and Dashboards use appropriate indicators for which data are available today, for at least 80% of the 149 countries with a population greater than 1 million, i.e. at least 124 countries. To identify appropriate indicators, all recently proposed official SDG Indicators were reviewed for data availability and suitability for inclusion in the SDG Index and Dashboards. Major gaps were filled with other metrics from official or other reputable sources. Some 77 indicators meet the standards for inclusion and have been incorporated into the SDG Index and Dashboards. Countries with a population smaller than 1 million are included in the Index and Dashboards if sufficient data are available. Decisions on indicator selection are described in Annex 1 and the online metadata.

Q: Why are some countries not included in the SDG Index and Dashboards?

A: A country is included in the Index and Dashboards if it has data for at least 80% of the indicators. Some countries with a population of less than 1 million have sufficient data and are therefore included in the SDG Index. The fact that many countries lack sufficient data for inclusion in the SDG Index and Dashboards underscores the need for greater investments in statistical capacity building.

Q.: Where do the data for the SDG Index and Dashboards come from?

A: To the maximum extent possible, the SDG Index and Dashboards rely on internationally comparable official statistics. In some cases non-official metrics from other reputable sources are used, as described in the online metadata. Data for each indicator have been rigorously selected and reviewed for quality, timeliness and verifiability.

Methodology

Q: How do the Index and Dashboards compare performance across different indicators?

A: To ensure comparability we normalize the data for each indicator by transforming it linearly into a scale from 0 to 100. A value of 100 denotes the technical optimum, while a value of zero denotes the worst performer in the sample. For clarity and ease of interpretation, we transform some indicators so that in each case a higher score on the indicator corresponds to a higher overall progress.

Q: How are the SDGs and their indicators weighted in the SDG Index?

A: Each SDG has the same weight in the Index and Dashboards, which is in line with the spirit of the SDGs adopted in September 2015. This implies that countries need to pursue all 17 goals through integrated strategies. Within each goal every indicator is equally weighted, which implies that every indicator is weighted inversely to the number of indicators available for that particular SDG. An advantage of this approach is that as more and better SDG data become available new variables can be added easily to individual SDGs without changing the relative weighting of the goals. In this way the SDG Index and Dashboards can evolve over time as each epistemic community generates new and better data.

Q: What is the rationale behind the thresholds for the SDG Dashboards? How are they determined?

A: Some other indices use relative performance across countries to define thresholds. We believe that absolute thresholds are more suitable since most SDGs require absolute benchmarks to be achieved. To assess a country's progress on a particular indicator, such absolute quantitative thresholds are introduced to differentiate between situations where an SDG threshold has been met (green), where significant challenges remain (yellow), and where major challenges must be overcome if the country is to meet the goal (red). Where possible, these thresholds are derived from the SDGs, their targets, or other official sources. All thresholds are specified in the online metadata.

Q: What aggregation methods do you use and how is the overall SDG Index score calculated?

A: As described in Annex 1, the choice of aggregation formula can have important implications for the results of both the SDG Index and Dashboards. Taking simple average of indicator values (arithmetic aggregation) implies that the indicators are perfectly substitutable: progress on one variable can offset lack of progress on another. This approach is reasonable for indicators within the same goal that tend to complement one another, so we use arithmetic means to aggregate indicators within each SDG for the Index and Dashboards. However, major trade-offs may occur across SDGs. Progress on one goal (e.g. higher economic growth) cannot fully offset lack of progress on another (e.g. rising inequality or environmental degradation). For this reason countries need to make progress towards every goal. In other words one must assume limited substitutability across goals, which is commonly done by using the geometric mean. We might therefore use the geometric average of the scores for each SDG to compute the overall SDG Index.

In practice, fortunately, the two methods of aggregation give almost the same rankings and nearly the same scores for most countries (correlation =0.977). For simplicity we therefore use the arithmetic aggregation even though the geometric aggregation is conceptually attractive. This leaves a natural interpretation of the meaning of the national SDG Index score. A SDG Index value of X% (e.g. 70%) therefore means that the country is X% of the way from worst to best on average across the 17 SDGs.

A third method for aggregating indicator scores is the Leontief minimum function, which ascribes the value of the indicator on which the country performs *worst* as the score for the SDG. This aggregation is helpful for identifying the areas within each goal where a country needs to make the greatest progress. We therefore use the *minimum* function to calculate the color coding in the SDG Dashboards. If a country is "red" on one indicator for a particular SDG its overall score for that goal will be "red".

Q: How do the SDG Index and Dashboards deal with missing data?

A: The SDG Index and Dashboards do not model or extrapolate data to fill gaps because such extrapolations are prone to errors. At this early state in SDG implementation we also want to highlight data gaps to encourage governments and the international system to fill them. Annex 1 describes a few exceptions where data were imputed for entire groups of countries.

Interpreting the results and limitations

Q: Sweden is ranked number 1 in the SDG Index. Does this mean the country has achieved the SDGs?

A: Absolutely not. Sweden performs best on average and based on the data we were able to mobilize for the SDG Index. However, as the SDG Dashboards make clear, every country faces major challenges in achieving the SDGs. This applies equally to Sweden and other top-ranked countries.

Q: The SDGs define a universal agenda. So why do rich countries perform relatively well in the SDG Index?

A: Some observers have expressed surprise that the ranking of countries in the SDG Index does resemble the ranking of more narrow indices that focus on income per capita and other measures of human development, such as educational attainment and health. Their concern is that the SDG Index may omit important variables on which rich countries perform worse than others and may therefore produce biased results.

As detailed below, there remain important data gaps in the SDG Index and Dashboards, including for goals, such as SDG 12 on sustainable consumption and production or the global partnership, where richer countries tend to fare worse. However, other data gaps have the opposite bias (e.g. health, education, inclusive cities). Filling them would improve the relative ranking of richer countries.

On balance, an equal weighting of all SDGs will lead higher-income countries to perform better on average. These countries tend to perform better on most economic and social SDG priorities. They also perform better on some "local" environmental priorities, including access to wastewater treatment, deforestation rates, and rates of biodiversity loss. Rich countries perform worse on greenhouse gas emissions and some metrics for sustainable consumption and production, but these represent a modest share of SDG priorities.

Q: How does the SDG Index relate to other development indices for the SDGs?

A: Many other composite development indices exist, but we are not aware of one tracking all seventeen SDGs at the country level. The Bertelsmann Stiftung issued a report, which was the first to propose an index for OECD countries to track SDG achievement and determine priorities for implementation in each country. Another significant effort has been undertaken by the Overseas Development Institute, which presents a regional SDG Scorecard, projecting trends across key dimensions of the SDGs to determine areas in which the fastest acceleration of progress will be required. Annex 1 and online materials show how the SDG Index relates to other development indices, such as the Human Development Index.

Q: How can I access the data for my country or region?

A: The online country profiles of the report provide country profiles. The entire dataset are publicly available on the website www.sdgindex.org. The data will be periodically updated.

Q: What are the major data limitations?

A: As explained in the report, the lack of data in some areas leaves significant gaps in the analysis. In particular broader measures for the following SDG priorities are urgently needed:

- Sustainable agriculture (SDG 2)
- Universal health coverage (SDG 3)
- Quality of education (SDG 4)
- Women empowerment (SDG 5)
- Integrated water resources management (SDG 6)
- Decent work (SDG 8)
- Inclusive and sustainable cities (SDG 11)
- Sustainable consumption and production (SDG 12)
- Climate change impacts and resilience (SDG 13)
- Ecosystem services (SDGs 14 and 15)
- Means of implementation (SDG 17 and other SDGs).

In addition, the SDG Dashboards do not capture important regional challenges that are less relevant at the global level, such as neglected tropical diseases, malaria, or inequality in education outcomes. Similarly, no globally available data could be found to track the impact a country might have on SDG achievement in another country (e.g. by sourcing natural resources from abroad). These challenges require careful analysis and will be addressed in later versions of the SDG Index and Dashboards.

Q: Do the Index and Dashboards include trend data?

A: Available trend or time series data are too sparse to estimate country-level rates of change for all variables. As a result, the SDG Index and Dashboards provide an initial snapshot of where countries stand today with regard to achieving the SDGs. Future work might focus on estimating historic baselines to compute rates of change.

Next steps

Q: Will the SDG Index and Dashboards be updated?

A: The SDG Index and Dashboards will be updated annually over the next three years to include new indicators as they become available, update the data, and incorporate suggestions on how to make the tools more useful for countries and other stakeholders. The website will be continuously improved to facilitate the real-time use of the data and comparisons across countries.

Q: To whom can I address my comments on the SDG Index and Dashboards?

A: We welcome comments and suggestions for improving the SDG Index and Dashboards. Please address your comments and suggestions to info@sdgindex.org.

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