

THE
OPEN DATA INVENTORY
2016 **ANNUAL**
REPORT

TOWARD AN OPEN DATA REVOLUTION

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An Open Data Revolution

There is a data revolution underway.

Its size and scope can be gauged by the exponential increase of online digital information; by the growth of new occupations described as data scientist, data curator, or data evangelist; and by the manifold impacts of digital information on our daily lives. Revolutions are, by their nature, disruptive, and the data revolution has already disrupted traditional modes of production, human interaction, and public discourse. A revolution can also overcome old barriers and solve new problems and bring benefits to people previously left out, left behind, or forgotten. For billions of people, realizing the full benefits of the data revolution will depend on whether it is truly an open data revolution.

Recognizing the importance of reliable, open data for guiding social, economic, and environmental policies, a high-level panel commissioned by Secretary-General Ban Ki Moon to make recommendations for the United Nations' 2030 development agenda. Their report, [A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development](#)^a, proposed an ambitious program of goals and targets monitored by statistical indicators. In describing the data revolution, they called attention to the need for open data: "A true data revolution would draw on existing and new sources of data to fully integrate statistics into decision making, promote open access to, and use of, data and ensure increased support for statistical systems."

The suggested targets are bold, yet practical.

"... The indicators that track [the SDGs] should be disaggregated to ensure no one is left behind and targets should only be considered 'achieved' if they are met for all relevant income and social groups. We recommend that any new goals should be accompanied by an independent and rigorous monitoring system, with regular opportunities to report on progress and shortcomings at a high political level. We also call for a data revolution for sustainable development, with a new international initiative to improve the quality of statistics and information available to citizens."

A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development

The call for a data revolution was taken up by the Secretary-General's Independent Expert and Advisory Group in their report, [A World That Counts: Mobilizing the Data Revolution for Sustainable Development](#)^b, which cited the need for open data standards to ensure knowledge is shared and the data revolution creates a world of informed and empowered citizens who can hold decision-makers accountable. The report recommended that all governments promote the release of open data by all data producers and that statistical systems make data available and useable as open data whenever possible.

Within government, the national statistical office and the agencies that make up the national statistical systems have a vital role to play. [The Cape Town Action Plan for Sustainable Development Data](#)^c, launched in January 2017 at the first United Nations World Data Forum, outlines a vision and describes concrete steps needed to achieve better data for all. It addresses the importance of open data for achieving the Sustainable Development Goals and speaks to the responsibilities official statistical agencies have for making their data open.

There is a consensus: national statistical systems can and should take the lead in an open data revolution. The value of official statistics is enhanced the more they are used, and making data accessible and useable is an important function of any statistical agency. There are, as

well, internal benefits of open data for national statistical systems: process efficiencies, access to new data sources, improved outreach and greater trust in statistics. Open data also improve the functioning of government and generate opportunities for economic growth and job creation in the private sector.

Innovation and modernization of national statistical systems

“Promote the revision of statistical laws and regulatory frameworks, where necessary, consistent with the Fundamental Principles of Official Statistics, to: (1) enhance the status, independence and coordination role of national statistics offices; (2) strengthen their access to data, including enhanced data sharing across the national statistical system, and thereby their ability to more efficiently respond to emerging data and statistical needs; (3) develop a mechanism for the use of data from alternative and innovative sources within official statistics; (4) improve transparency of, and public access to, official statistics; and (5) strengthen the availability of sustainable funding for national statistical systems.”

Cape Town Action Plan for Sustainable Development Data

How can governments and their national statistical systems join the open data revolution? By building partnerships with other statistical systems and with civil society and the private sector. Twenty-two national statistical offices shared their experience with other participants at the [2016 International Open Data Conference](#)^d. By adopting international standards. Sixteen national governments, including ten developing countries, have subscribed to the principles of the [International Open Data Charter](#)^e. The first principle commits governments to “Develop and adopt policies and practices to ensure that all government data is made open by default... .”

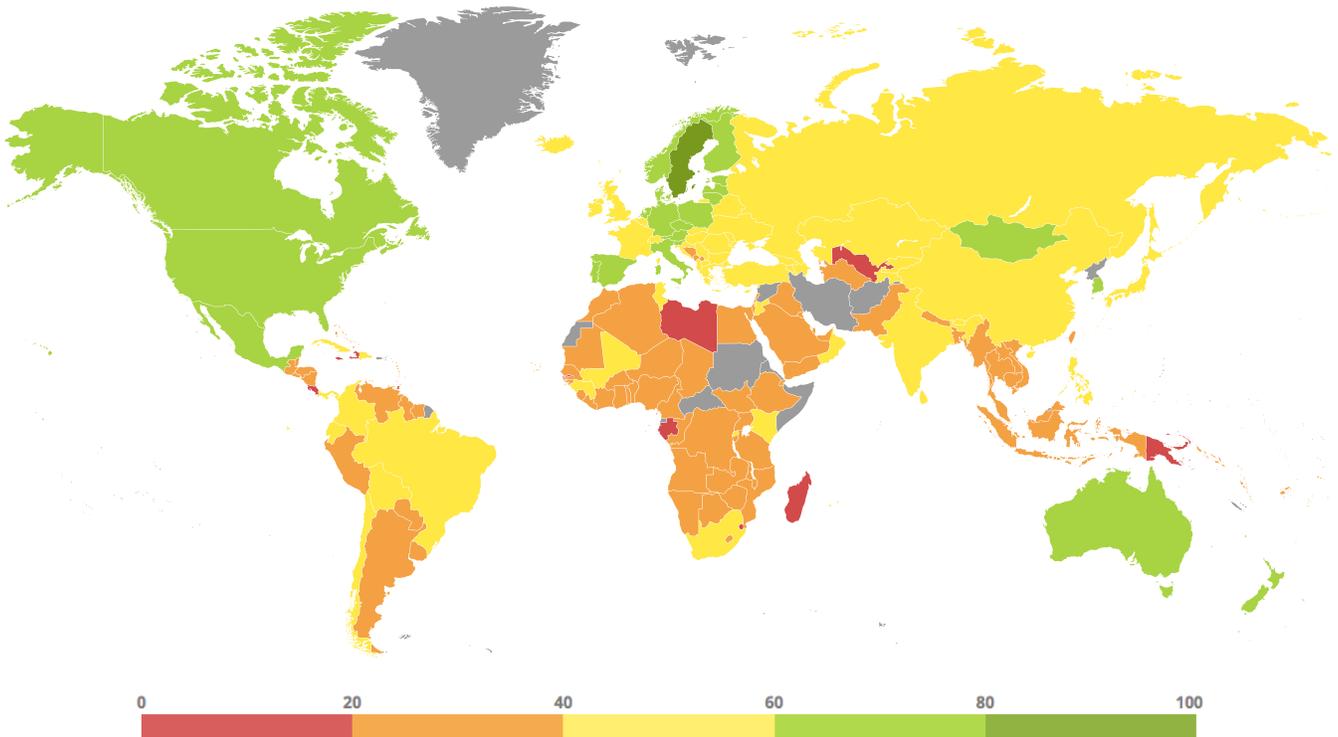
And by taking practical steps to make their data open. Statistical offices can begin by explicitly including open data in their [national strategies for the development of statistics \(NSDS\)](#)^f, or their [SDG roadmaps](#)^g. To assist countries in meeting the challenges of monitoring the SDGs, the Global Partnership for Sustainable Development Data, a broad coalition of governments, international agencies, non-governmental organizations, and private sector firms has developed the [Data4SDGs Toolbox](#)^h, a set of tools, methods, and resources.

The Open Data Inventory (ODIN), now in its second year, was created by Open Data Watch as a diagnostic tool for and a spur to the open data revolution for sustainable development. ODIN 2016 results show that all countries, from the poorest to the wealthiest, have room for improvement: some can make rapid advances by a few simple steps, but the poorest and lowest scoring countries still require substantial investments to provide even the most basic statistics. We offer our assistance to any statistical office seeking the benefits of open data and welcome feedback to help us make ODIN more useful.

The Open Data Inventory 2016

In its second year, the Open Data Inventory (ODIN) assessed the coverage and openness of national statistical systems in 173 countries, including for the first time, 48 high-income countries. The median country score in 2016 was 38, meaning that fewer than half the countries satisfied more than 38 percent of the ODIN criteria for data coverage and openness. Across all countries, ODIN scores ranged from 81 for Sweden to 3 for Madagascar. While the high-income countries of Europe, North America, and Asia achieved, on average, the highest scores, the low- and middle-income countries in many regions achieved higher results than their wealthier neighbors.

Figure 1. ODIN global scores, 2016



Among the 122 countries assessed in both 2016 and 2015, the median score increased from 30 to 34.5. However, the increase was largely due to a change in the scoring of non-proprietary data formats to align with international standards. For most countries, overall scores were little changed, but a few stand out as having made dramatic improvements in the availability of key statistical indicators and their adherence to standards of openness. Top performers include Ecuador, Mauritius, Burundi, and Kyrgyzstan.

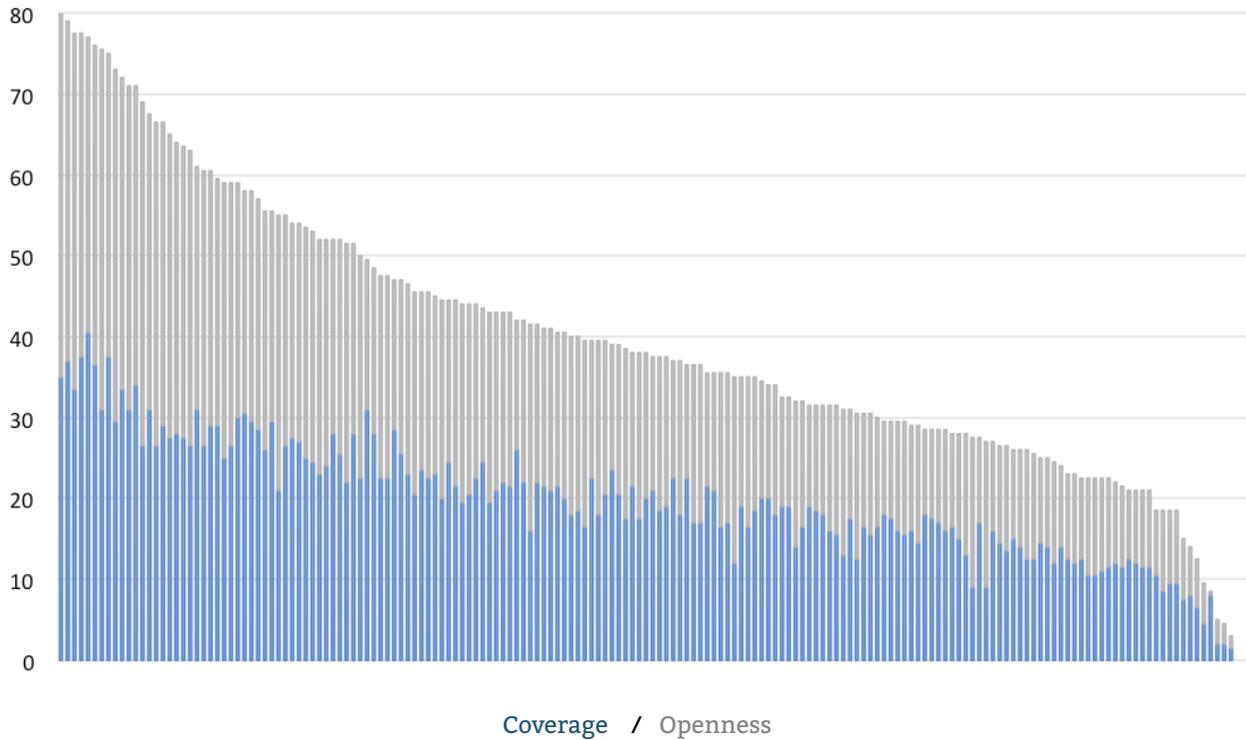
ODIN 2016 results show that all countries have room for improvement, some can make rapid advances by a few simple steps, but the lowest scoring countries still require substantial investments to provide even the most basic statistics.

Coverage and Openness

ODIN assessments begin by looking for a limited number of top-level indicators – sentinel indicators – in each of twenty data categories. In an ODIN assessment, a country can achieve up to five points for data coverage and five points for data openness in each data category. Figure 2 shows each country’s overall score as the sum of its coverage and openness sub-scores. All ODIN scores are shown as a percentage of the maximum score obtainable.

On a global scale, there are only small differences between the coverage and openness scores; in 2016 the median coverage score was 39 and the median openness score was 37. However, results at the country level tell another story. Large differences between coverage and openness scores within a country were rare, but when they occurred, they favored openness. Out of 173 countries, 13 countries had a difference between their coverage and openness sub-scores of 20 points or greater. In 10 countries the openness score was higher. The openness scores of the Netherlands and Denmark exceeded their coverage scores by 32 and 27 points. Large differences between coverage and openness scores occurred most often when the national statistical office’s website did not provide links to statistics produced by other official agencies, or when data were not provided at the subnational level.

Figure 2. ODIN coverage and openness scores, 2016



Coverage Results

Each coverage score is composed of five elements: (1) data for an indicator are available and are disaggregated appropriately; (2) data are available between 2011-2015; (3) data are available between 2006-2015; (4) data are disaggregated at the first administrative level; and (5) data are disaggregated at the second administrative level.

Figure 3 shows the average scores on the five elements of data coverage for 173 countries. Scores reflect the percentage share of possible scores on the five elements over twenty data categories. The highest scoring coverage element, indicator coverage and disaggregation, shows

that on average 62 percent of the sentinel indicators and their disaggregations were available. The highest score on this element was 96 for Lithuania; the lowest scores were 7 for Haiti and Swaziland.

The lowest scoring element was the availability of data disaggregated at the second administrative level. Not far behind, scores for the availability of data disaggregated at the first administrative level were also consistently low across countries. This is not surprising as these two coverage elements often relate directly to the capacity and resources of the NSO, which are often constrained.

Figure 3. Average coverage scores by element, 2016

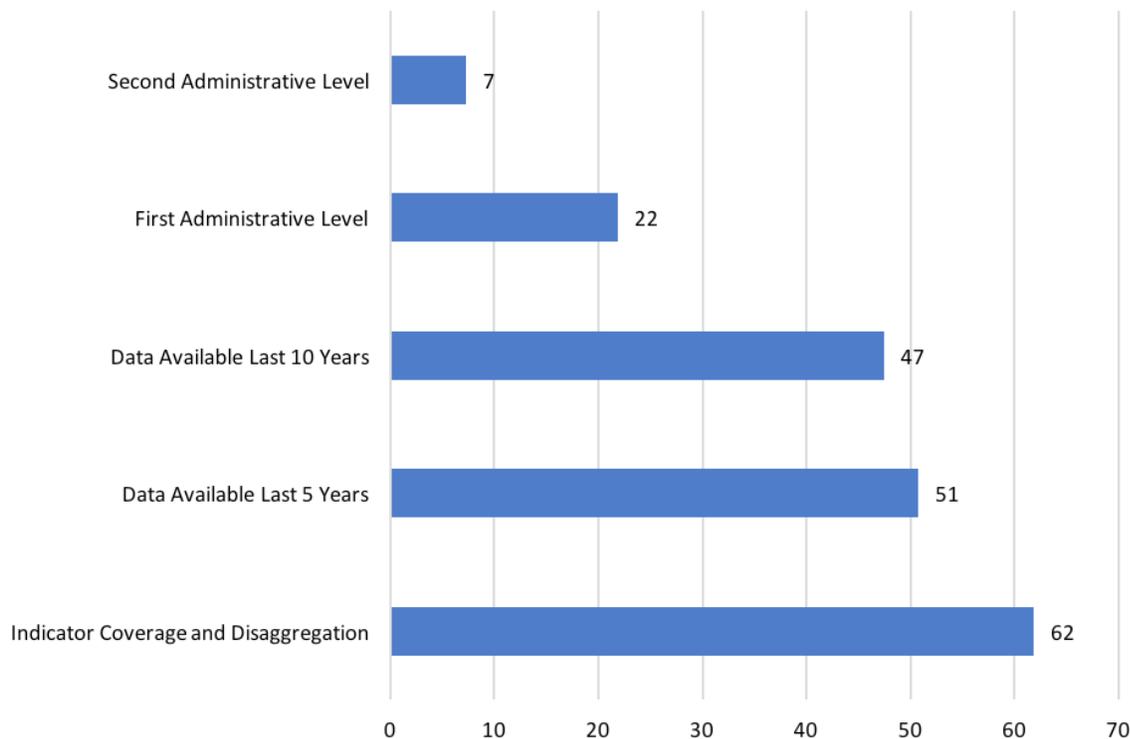


Table 1 shows average scores for the first and second administrative coverage elements by income level. High-income countries are the top performers at both administrative levels. There were small score differences between other

income groups. At the country level, scores for first and second administrative levels differed as much as 26 points, yet these situations were unusual.

Table 1. Average administrative coverage scores by income group, 2016

Income Classification*	First Administrative Level	Second Administrative Level
Low Income	18	3
Lower-Middle Income	21	5
Upper-Middle Income	20	5
High Income	27	14

*Income classification based on the World Bank's Atlas method for 2015.

Openness Results

Each openness score is composed of five elements that correspond to components of the [Open Definition](#): (1) data are machine readable; (2) data are published in a non-proprietary format; (3) download options exist such as user-selection of indicators and bulk download or an application programming interface (API); (4) metadata are available for the data sets; and (5) open terms of use are clearly stated.

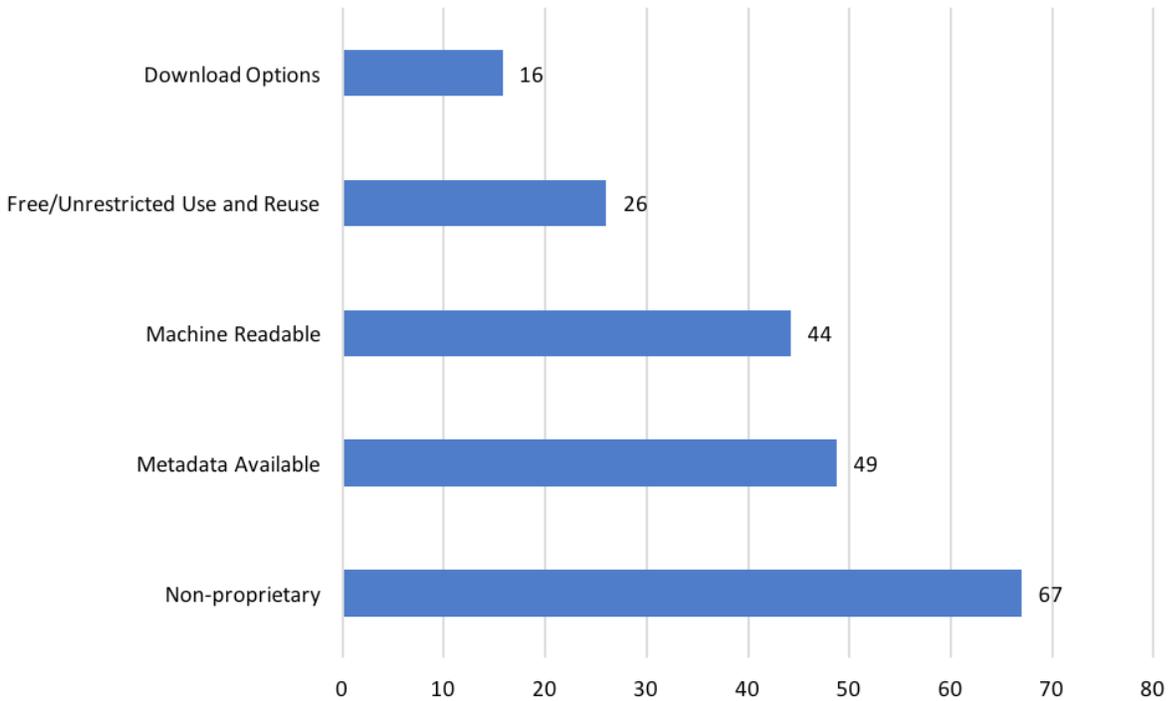
Figure 4 shows the average scores on the five elements of data openness for 173 countries. The highest scoring element shows that on average 67 percent of sentinel indicators were published in non-proprietary formats. Eight countries scored 100 on this element: Canada, Korea, Mongolia, Bhutan, Denmark, Estonia, Lithuania, and Norway. The lowest scoring element was the availability of download options to enable users to customize data exports. In most countries, these download options are offered by data portals that house some, if not all, data published by the government. Two options must be present to receive full scores on this element: (1) user-selectability and (2) an option for bulk download or an application programming API. Bulk

downloads and APIs were least commonly found, while all data portals contained some level of user-selectability.

The second lowest scoring element was the existence of a clear and open terms-of-use policy. In 71 countries either no terms of use exist or the terms of use are restrictive. Some of the restrictive clauses that would downgrade a countries' terms of use score to 0 include requirements for users to seek permission before using data for any purpose, to register or provide personal information about themselves, or to provide payment.

The model for open terms of use is a Creative Commons Attribution license (CC-BY) or similar terms that provide a right to use and reuse the data for commercial and non-commercial purposes with no further restrictions other than acknowledgement of the source. Out of 173 countries, only three provided fully open terms of use for all published data assessed in ODIN 2016. Even where the intention is to provide free and open access to data, the lack of terms of use causes uncertainty and therefore discourages further use of the data. For many countries, the

Figure 4. Average openness scores by element, 2016



easiest and least costly way to raise their ODIN score by up to 10 points would be to adopt a CC-BY or similar license.

The other low-scoring elements of openness were the provision of machine readable formats and the availability of metadata. Machine readable formats such as XLS, XLSX, CSV, TXT, or JSON files allow users to read and process data automatically using a computer. Non-machine readable formats

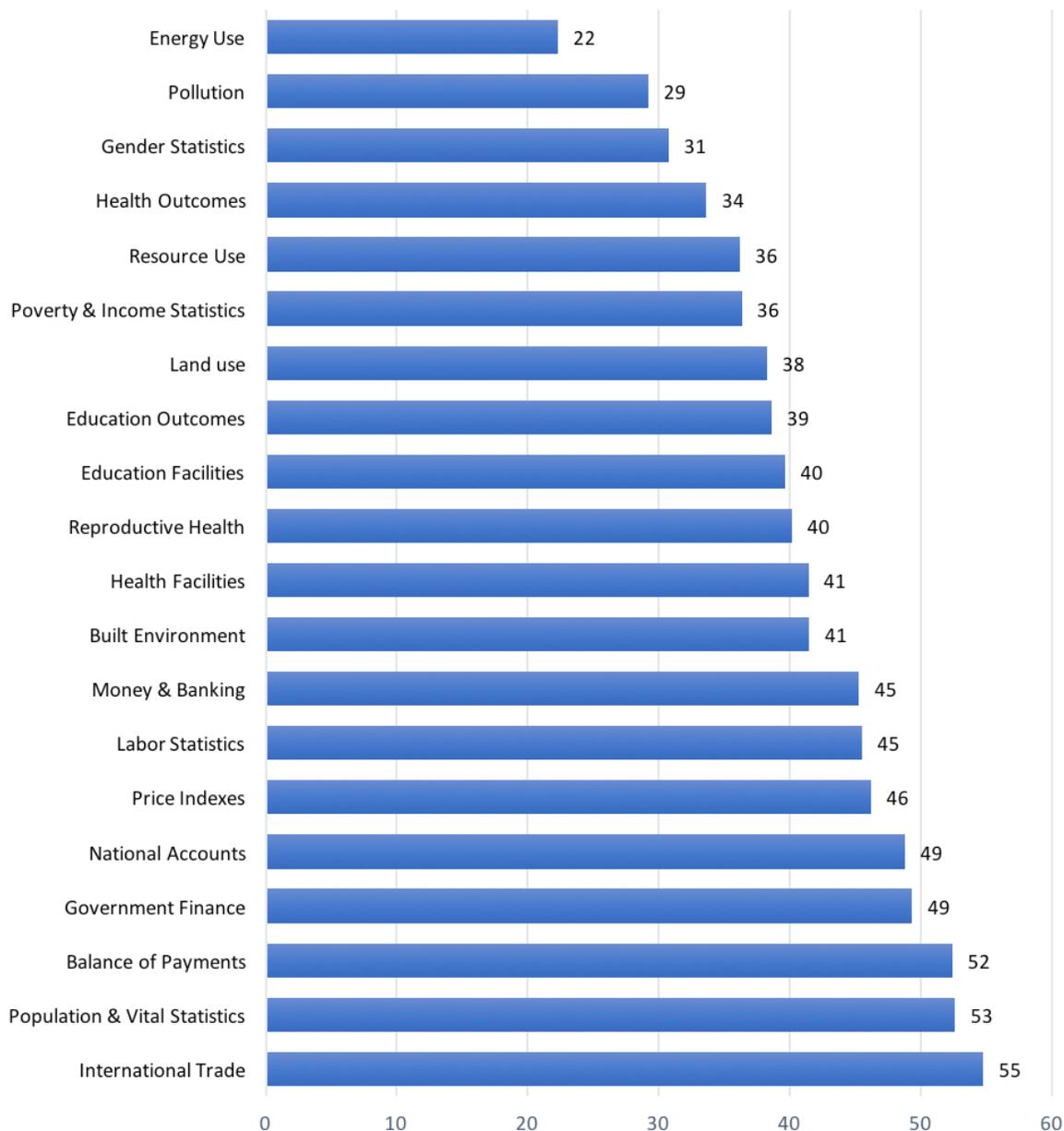
include PDF files and graphics formats such as JPG or GIF. The element for non-proprietary formats scored highest this year, likely due to a change in methodology, which now recognizes PDF files to be non-proprietary. Nonetheless, PDF files are not machine readable and countries who make data primarily available in this format should also make their information available in machine readable formats to be fully open.

Results by Data Category

Averaging scores across all ten elements gives a view of the availability and openness of data in the twenty categories of statistics included in ODIN. Figure 5 shows that international trade data scored highest and energy use data scored the lowest. The environmental data categories have the lowest scores with an average of 33 points. The economic and financial data categories score the highest with an average score of 49.

Further information on ODIN 2016 results by sector can be found on page 18.

Figure 5. ODIN scores by data category, 2016



Open Data for the SDGs

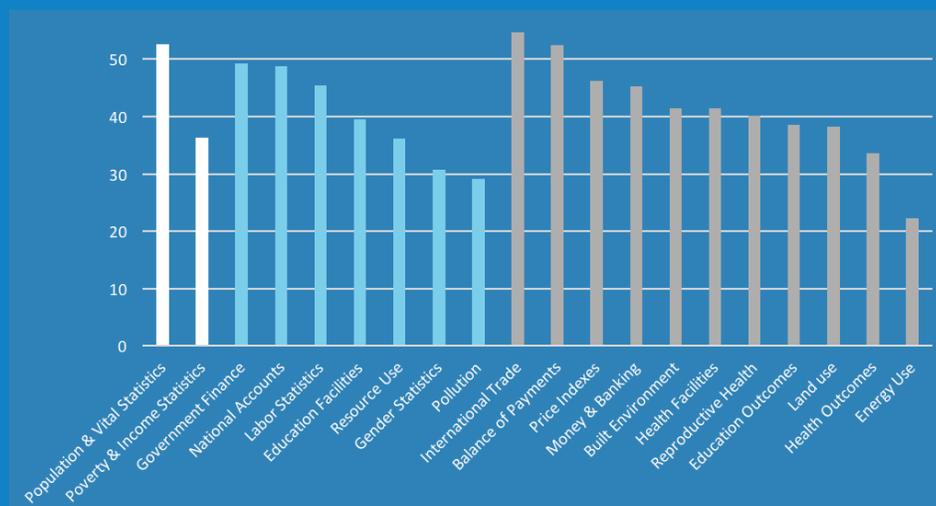
The Sustainable Development Goals (SDGs) have generated unprecedented demand on national statistical organizations and international agencies for the statistical indicators needed to measure and track progress towards the 17 goals, 169 targets, and 230 indicators. The importance of strong official statistics is noted in Goal 17 (“Revitalize the global partnership for sustainable development”), where target 18 calls for “support ... to increase significantly the availability of high-quality, timely and reliable [disaggregated] data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.” This target will be measured by “the proportion of sustainable development indicators produced at the national level with full disaggregation when relevant to the target, in accordance with the Fundamental Principles of Official Statistics.”

National statistics offices will play a critical role in the measuring and tracking of the SDGs. While the use of big data, call detail records, and other non-official data sources has gained attention, most data required to track development progress are derived from censuses, surveys, and administrative records conducted and maintained by official bodies. National Statistical Offices often

are the only official body in a government with the legal authority to collect, compile, and disseminate much of the data needed to monitor progress on the SDGs, and yet, many NSOs lack the financial and technical resources and, or in some cases, the political support to do so effectively.

Although the Open Data Inventory was not designed specifically to monitor the SDG indicators, many of the data series included in ODIN assessments are needed to monitor SDG targets. Figure 6 shows average scores by data category from the 2016 ODIN assessment. In keeping with the principle that the SDGs apply to all countries, the scores shown are the average of all countries. Scores based only on low- and middle-income countries would have been uniformly lower. Two data categories – population and vital statistics and poverty and income statistics -- are inputs to eight or more SDG goals; seven more, shown in yellow, contribute to four or five goals; the remaining appear in three or fewer goals. All but three had average scores of less than 50, suggesting that many countries are ill-prepared to produce and to disseminate the data needed to monitor the SDGs. The shortfalls of poverty and income, pollution, and gender statistics are particularly concerning.

Figure 6. Average ODIN Scores and the SDGs, 2016



SDG Goals Served

8+ goals

4-5 goals

3 or fewer goals

Geographic Results

Countries included in ODIN 2016 come from 20 regions defined by the United Nations. As shown in Table 2, as a continent, Europe has the highest average overall score, but there are regions in the Americas and Oceania that exceed the averages of many of the European regions.

Table 2. ODIN scores by region, 2016

Average Scores	No. of Countries	Overall Score	Coverage Score	Openness Score
Africa				
Eastern Africa	14	32	33	32
Middle Africa	7	27	26	28
Northern Africa	5	28	32	25
Southern Africa	5	30	30	31
Western Africa	16	31	31	32
Americas				
Caribbean	9	23	24	23
Central America	8	34	33	34
North America	2	75	70	80
South America	12	38	40	35
Asia				
Central Asia	5	36	39	32
Eastern Asia	6	49	47	50
South-Eastern Asia	10	34	34	33
Southern Asia	7	40	43	37
Western Asia	17	39	40	39
Europe				
Eastern Europe	11	56	59	54
Northern Europe	10	68	62	74
Southern Europe	12	54	52	57
Western Europe	7	57	50	64
Oceania				
Australia and New Zealand	2	63	54	72
Pacific Islands	8	25	27	22

Results by Income Groups

The income of a country may be expected to have an impact on the performance of their statistical systems, as collecting, documenting, and disseminating open data requires financial, technical, and human resources. However, capacity is only one part of the equation for implementing successful open data policies, and many low- and middle-income countries were able to increase the openness of their data with little resources. For example, Rwanda ranks 21st globally in openness and is the only low-income country to rank in the top 65 countries overall, largely due to the openness of its data.

Table 3 shows average overall, coverage, and openness scores for each of the income groups, as classified by the World Bank. Although openness scores are the easiest to increase despite low capacity, openness shows the largest score discrepancy between high- and low-income groups. Many low- and middle-income countries

could raise their openness scores simply by publishing open terms of use or by making data available as .XLSX or .CSV files. Publishing data with download options can require a more significant investment of resources, which may explain why wealthier countries attain the highest openness scores.

Table 3. Average ODIN scores by income level, 2016

Income Classification	No. of Countries	Overall Score	Coverage Score	Openness Score
Low Income	25	30	30	29
Lower-Middle Income	49	34	35	33
Upper-Middle Income	49	38	39	36
High Income	50	54	50	57

Regional Leaders Come from All Income Groups

High-income countries, dominated by the long-established statistical systems in Western and Northern Europe and North America, recorded the highest ODIN scores. However, within regions, the richest countries are not always the best performers.

Table 4 shows average scores for regions by income group. Numbers in parentheses show how many countries are in each income group within the region. Scores highlighted in blue indicate the income group of the top performing

country (or countries, if tied). And in 10 of the 16 regions with multiple income groups, the country with the highest average score is not from the highest income group in the region. In Eastern Africa, Mauritius, and in South-Eastern Asia, the Philippines, both upper-middle-income countries, were responsible for the top performing averages. In only four regions were the region's top performer from the highest income group. In seven out of the 16 regions with more than one income group present, the top performer came from the lowest income group.

Table 4. Average overall scores by income group and region, 2016

Regions	Regional Leader (ODIN Score)	Income Group of Regional Leader	Lowest Income Group in Region
Africa			
Eastern Africa	Rwanda (55)	Low Income	Low Income
Middle Africa	Cameroon (39)	Lower-Middle Income	Low Income
Northern Africa	Tunisia (45)	Lower-Middle Income	Lower-Middle Income
Southern Africa	South Africa (52)	Upper-Middle Income	Lower-Middle Income
Western Africa	Mali (43)	Low Income	Low Income
Americas			
Caribbean	Dominican Republic (45)	Upper-Middle Income	Low Income
Central America	Mexico (67)	Upper-Middle Income	Lower-Middle Income
North America	Canada (75)	High Income	High Income
South America	Ecuador (56)	Upper-Middle Income	Low-Middle Income
Asia			
Central Asia	Kyrgyzstan (55)	Lower-Middle Income	Lower-Middle Income
Eastern Asia	Korea, Rep. (61)	Lower-Middle Income	Lower-Middle Income
South-Eastern Asia	Philippines (43)	Lower-Middle Income	Lower-Middle Income
Southern Asia	India (54)	Lower-Middle Income	Low Income
Western Asia	Georgia (54)	Upper-Middle Income	Lower-Middle Income

Regions	Regional Leader (ODIN Score)	Income Group of Regional Leader	Lowest Income Group in Region
Europe			
Eastern Europe	Czech Republic (79)	High Income	Lower-Middle Income
Northern Europe	Sweden (81)	High Income	High Income
Southern Europe	Italy (71)	High Income	Lower-Middle Income
Western Europe	Netherlands (70)	High Income	High Income
Oceania			
Australia and New Zealand	New Zealand (65)	High Income	High Income
Pacific Islands	Samoa (35)	Lower-Middle Income	Lower-Middle Income

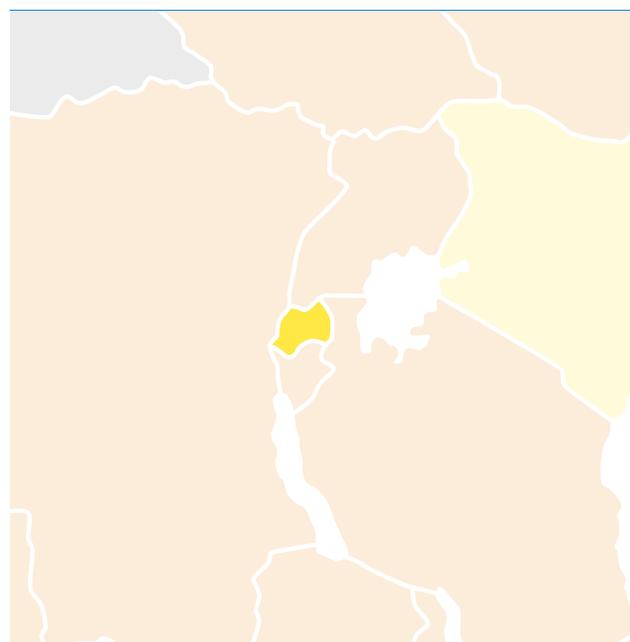
Regional Leaders

All statistical systems are different as are the demands placed on them. Their ODIN scores reflect their histories and choices made over time in response to those demands. Financial constraints and political pressure may limit their capacity, but new technologies and an expanding data ecosystem create opportunities for growth. Here are profiles of three regional leaders and their recent experience.

Rwanda

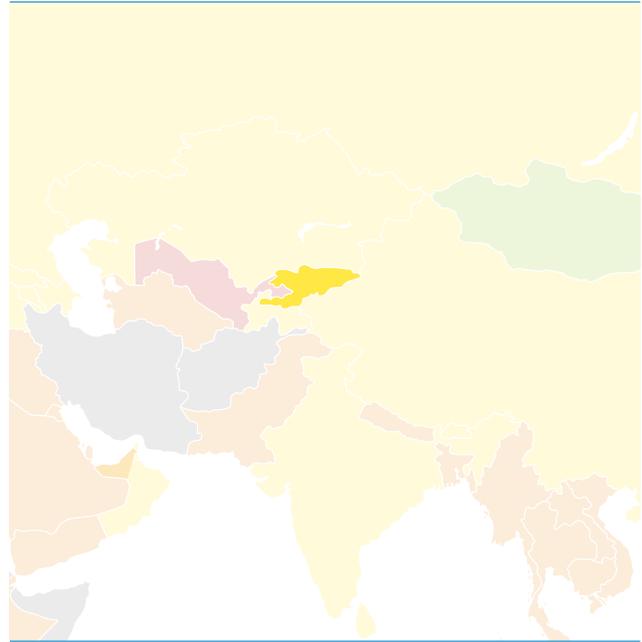
In both ODIN 2015 and 2016, Rwanda was the highest scoring low-income country included in the index. Rwanda was also the African regional leader in both overall and openness, with 2016 scores of 55 and 68. Even with limited resources, Rwanda dramatically increased the openness of its data, largely due to the creation of an open data portal that is integrated with the country’s national statistics office. Rwanda’s data portal is

the fourth of its kind to be launched in East Africa, with Kenya, Tanzania, and Uganda also having launched portals. Although Rwanda’s coverage is comparable to other Eastern African countries with similar portals, Rwanda has managed to lead the region by including much of its official data within the portal, adopting a fully open terms-of-use policy, and publishing indicator specific metadata with many data sets.



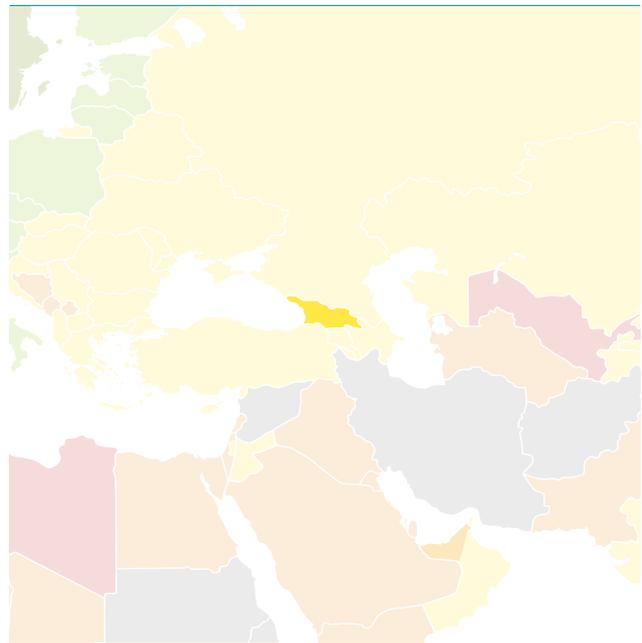
Kyrgyzstan

Kyrgyzstan remained the regional leader from 2015 to 2016 in Central Asia across overall, coverage, and openness scores despite being in the region's lowest income group (lower-middle income). In ODIN 2016, the country's openness scores increased partly due to a change in ODIN's methodology concerning non-proprietary formats, but also due to changes in the country's terms-of-use policy concerning all data published by the national statistics office. In late July 2015, the National Statistics Committee of the Kyrgyz Republic overhauled their website, not only making ODIN-relevant data sets easier to locate, but also providing a clearer terms-of-use policy to inform users. Kyrgyzstan could further improve its dissemination policy by adopting a terms-of-use policy similar to Creative Commons BY 4.0. Fully open terms of use along with expanded use of machine readable and non-proprietary file formats could make Kyrgyzstan a serious contender for highest openness score in Asia.



Georgia

In ODIN 2015 and 2016, Georgia was the regional leader in Western Asia, hailing from the region's second lowest income group. Though their score decreased slightly since ODIN 2015, this was not due to a change in practice. Economic statistics drive their high coverage subscore, scoring significantly higher than social or environmental statistics, while social statistics have the highest openness subscore. Economic statistics score full points in three out of five coverage elements and two openness elements. The main areas for improvement are second administrative level data across all data categories and the lack of open terms of use. In both ODIN 2015 and 2016, Armenia has been trailing only slightly behind Georgia. In order to keep its regional standing, Georgia will need to continue to make progress and address these gaps.



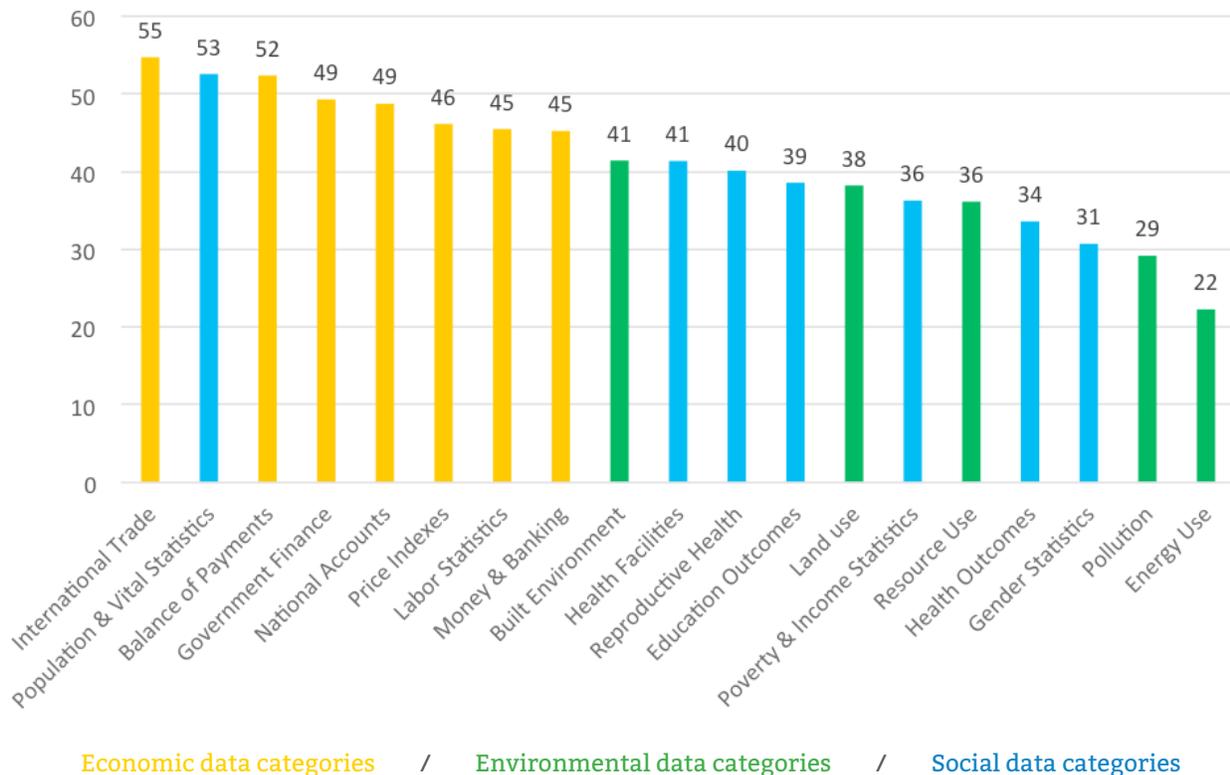
Sectoral Results Show Major Gaps

ODIN calculates sub-scores for each of the twenty data categories, showing where gaps in coverage and openness occur. Figure 7 shows global averages for each data category and reveals a clear global pattern: economic data (categories shown as gold bars) are, on average, published in more complete and open data sets than most environmental and social data (apart from population and vital statistics).

However, economic data scores are largely driven by coverage sub-scores, not openness. This result is likely due to the national prioritization of these data sets to meet requirements of donors and investors. However, some of the results are surprising, such as the poor performance of poverty and income statistics, health outcomes,

and gender statistics, which include target indicators that were monitored for 15 years as part of the Millennium Development Goals. These categories remain important for the 2030 Sustainable Development Agenda, as do many of the low-scoring environmental categories.

Figure 7. Average ODIN scores by data category, 2016



The Importance of Gender Statistics and Sex-Disaggregated Data

Gender statistics and sex-disaggregated data are vital to making responsible policy decisions. However, for young girls and women, much of the data that reflect the very basic dimensions of their lives are lacking. Within the SDGs, 53 indicators, or 23 percent of the total, specify sex-disaggregated or sex-specific indicators. These indicators are needed to plan programs for and to monitor progress on Goal 5 (“Achieve gender equality and empower all women and girls”). They are also needed to measure the impact of other goals tracking sex-disaggregated indicators. The results in Figure 7 show that there is much work to do in this realm.

The ODIN data category, gender statistics, includes two indicators: (1) data on violence against women and (2) proportion of women in parliament and/or management positions. However, sex-disaggregation is addressed in other data categories. Six of the twenty ODIN data categories require sex-disaggregated data to score full points on coverage (population and vital statistics, education outcomes, health outcomes, reproductive health, gender statistics, labor statistics). Not a single country in ODIN 2016 published data on every indicator within those categories with sex disaggregation. Table 5 shows the number of countries that published sex-disaggregated data for all sentinel indicators in the relevant ODIN categories.

Table 5. Number of countries with sex-disaggregated data for all sentinel indicators, by data category, 2016

Data Category	Countries with Sex-Disaggregated Data (Out of 173 countries)	Average Coverage Score for All Countries	Average Openness Score for All Countries
Education Outcomes	7	34	43
Gender Statistics	59	28	34
Health Outcomes	46	31	37
Labor Statistics	84	42	49
Population & Vital Statistics	97	55	50
Reproductive Health	67	36	45

Although no single country has yet to exemplify the gold standard for gender statistics or sex-disaggregated data, a few countries have provided sex-disaggregated data in five of the six relevant data categories. These countries are: Bangladesh, Canada, Finland, Lithuania, Mauritius,

the Philippines, the Solomon Islands, the United States, and Zambia. Although all these countries provide sex-disaggregated data, some fall short of providing adequate time series, subnational data, or meeting openness criteria.

Energy Consumption Data Ignored by Many

Energy use is the lowest ranked data category in ODIN in both coverage and openness. Out of the 173 countries included in ODIN 2016, 100 countries, or 58 percent, do not provide the minimum amount of data to earn any score. In fact, four entire regions score an average of zero on this data category (Middle Africa, Western

Africa, the Caribbean, and the Pacific Islands). Table 6 shows a regional view of scores for energy use. The minimum amount of information ODIN seeks in this category is simple: countries must report consumption data on at least two energy types (of their choosing) disaggregated by industry or end-use sector.

Table 6. ODIN scores by region, 2016

Average Scores	No. of Countries	Overall Score	Coverage Score	Openness Score
Africa				
Eastern Africa	14	18	18	19
Middle Africa	7	0	0	0
Northern Africa	5	20	18	22
Southern Africa	5	21	18	24
Western Africa	16	0	0	0
Americas				
Caribbean	9	0	0	0
Central America	8	18	18	19
North America	2	78	70	85
South America	12	5	5	6
Asia				
Central Asia	5	25	24	26
Eastern Asia	6	41	38	43
South-Eastern Asia	10	5	6	3
Southern Asia	7	26	27	26
Western Asia	17	14	14	13
Europe				
Eastern Europe	11	49	47	51
Northern Europe	10	57	50	64
Southern Europe	12	52	49	54
Western Europe	7	49	43	54
Oceania				
Australia and New Zealand	2	63	60	70
Pacific Islands	8	0	0	0

As the world continues its heavy reliance on fossil fuels and other non-clean energies, one of the first steps to adopting renewable and clean energy sources is to understand sector consumption by energy type. This will reveal which sectors are most important to target in efforts to transition to

renewable and clean energy. The fact that these data are not publicly available suggests a lack of political will or a commitment to transparency regarding environmental matters.

Data Coordination Across Agencies is Critical

National statistical offices (NSOs) are not expected to be the sole producers of official data in a world characterized by an ongoing data revolution. However, as the lead agency of the national statistical system, they must coordinate their work with other governmental bodies that produce official statistics to maximize their public benefit. It is because of this that ODIN only assesses data published on NSO websites or agency websites linked from them. Although centralized systems may have an easier time integrating data dissemination between agencies, decentralized systems have been just as successful providing users a consolidated location to access data from multiple agencies. Sometimes countries use data portals, while others simply provide users directions to other data sources from a central NSO website.

The following examples show how some countries have, and have yet to, integrate data between government agencies.

United Kingdom

The United Kingdom, like most high-income countries, was not assessed in ODIN until 2016. The inclusion of high-income countries increased the global average, but produced some surprising results. With an overall score of 50 and a global rank of 45, the United Kingdom's results fell short of expectations. The reason: scores suffered across many data categories because of a lack of integration of data from other units of government.

According to ODIN methodology, data can only be used in an ODIN assessment if the data are disaggregated appropriately and are presented, at minimum, at the national level. The website of the United Kingdom's Office of National Statistics provides many data sets for the entire country. However, data on education facilities, education outcomes, health facilities, health outcomes, and reproductive health omitted Scotland and Northern Ireland. Because these data sets did not meet our minimum criteria for inclusion in the assessment, a score of zero was given across all coverage and openness elements.

The good news is that this situation can easily be improved. Both Northern Ireland and Scotland have their own statistical office websites. If the

Office for National Statistics simply incorporated these data into their website, or directed users to those sites, their ODIN scores could increase by as much as 25 percent.

Russia

Russia is an example of a highly-centralized country that has only partially integrated its dissemination of national statistics. Russia's statistical agency, Rosstat, hosts a regional statistical page for each of its 80 or more first-level administrative regions, but most of these data did not meet the requirements for inclusion in the ODIN assessment. In addition, little information from other government agencies is linked from the Rosstat's main site.

In June 2016, Open Data Watch and the Russian Association of Statistics combined efforts to conduct an unofficial ODIN assessment, [ODIN.RU](#), using data produced and published by governmental agencies not integrated through Rosstat. In this assessment, numerous data sets were found, including, but not limited to, data from the central bank and the country's open data portal. At the time of writing this report, the results of the assessment have not been finalized. However, preliminary results show that if these data were integrated with Rosstat's data sets, the

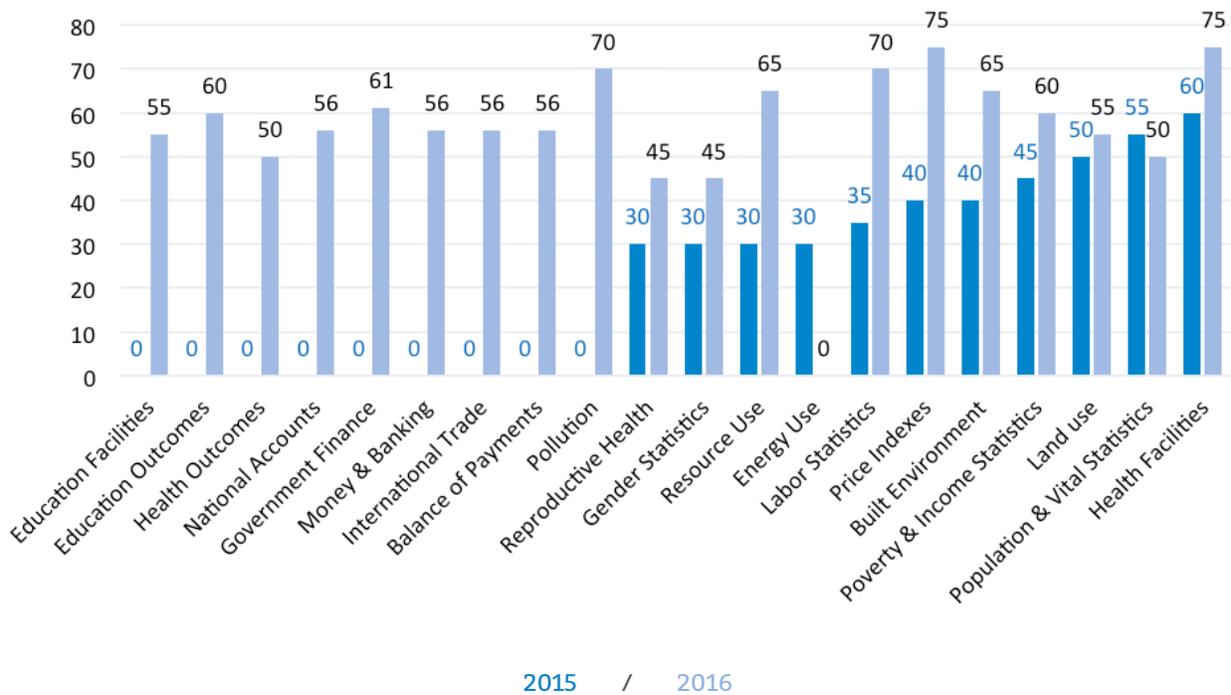
increase in both coverage and openness would be great enough to place Russia in the top three performing countries in Eastern Europe.

Ecuador

Ecuador’s ODIN 2015 assessment showed numerous gaps, but Ecuador made an impressive improvement in 2016. In nearly half of the data categories assessed by ODIN 2015, no information was found. Ecuador scored only 24, the second lowest ranked country in South America despite their ongoing commitment to the availability and accessibility of the country’s official statistics.

In 2016, Ecuador’s national statistical office, Instituto Nacional de Estadística y Censos (INEC), collaborated with Open Data Watch to better understand the ODIN assessment process. Based on these discussions, INEC^k overhauled its entire website, improved the online platform so that users could locate data sets more easily, and integrated data sets produced by other government agencies. Figure 8 shows their score improvements by data category. As a result, Ecuador improved their overall ODIN score by 32 points.

Figure 8. Ecuador’s ODIN 2015 vs. ODIN 2016 scores by data category



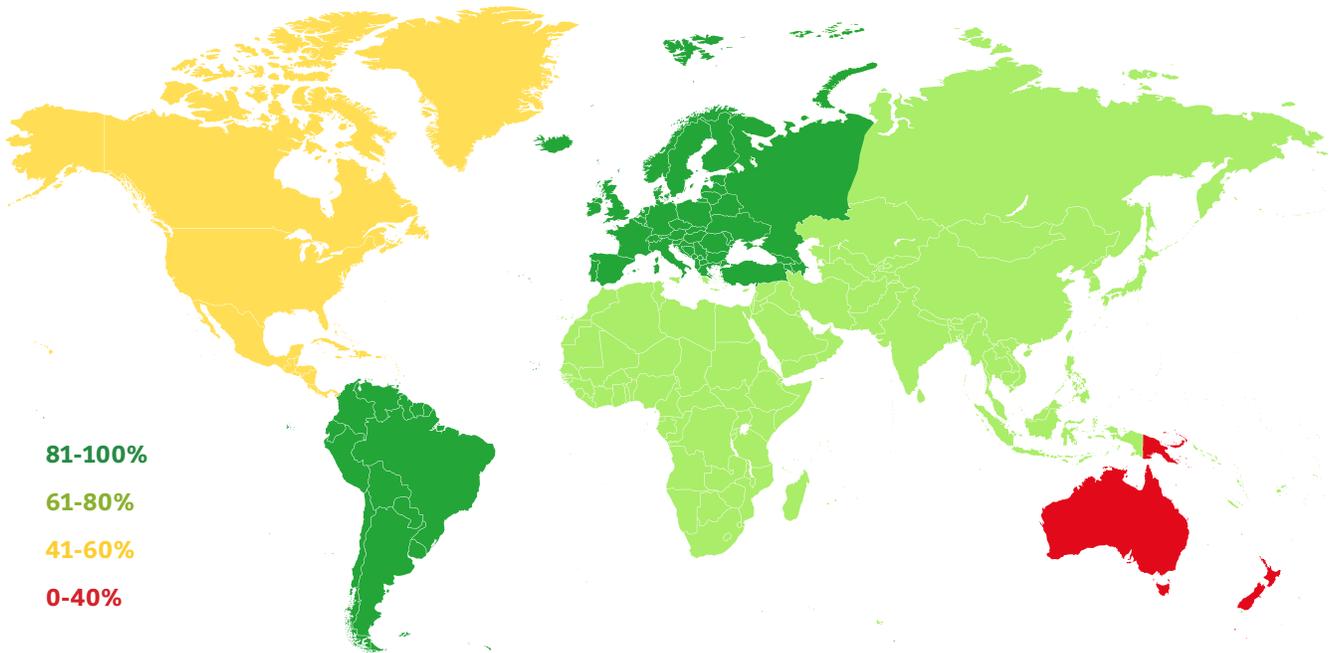
The Potential of Open Data Portals

As countries seek to find ways to embrace the data revolution, one of the initiatives they often undertake is creating an open data portal. Open data portals are web-based interfaces designed to make it easier to find reusable information. At minimum, they have a certain level of search functionality. Often, they also have other user-selectable functions, data export customization features, and quick access to metadata.

Some countries have created and hosted their own open data portals, while others have created portals in collaboration with external initiatives. Common data portals that are a result of these collaborative efforts include DevInfo, Open Data for Africa, AfricaData.org, and CountrySTAT. However, not all of these data portals are used for ODIN assessments. The ODIN methodology only allows the use of portals whose data are updated and maintained by the NSO or by an

official domestic agency. According to information recorded by ODIN assessors, 124 of the 173 countries assessed have at least one data portal that qualifies for use in ODIN. Figure 9 shows the percentage of countries in each continent having data portals. Unfortunately, many of these portals hold only a subset of data, are no longer functioning, or have serious functionality issues which severely reduces their usefulness.

Figure 9. Continents by percentage of countries with data portals, 2016



Data portals, or more specifically open data portals, can play a great role in helping NSOs disseminate data from many sources in a user-friendly format. However, if not done well, these portals can lead to more problems than they solve

and can ultimately inhibit data access via clumsy navigation controls, mislabeling of data sets, and “data dumping” (where a large amount of disorganized data is uploaded into a portal).

The following are a few examples of country data portals that have been implemented particularly well.

Sweden

Sweden not only ranks number one overall in ODIN 2016 but also in openness, with a score of 91. Although not all the information assessed for Sweden is located within a single portal, Statistics Sweden's data portal, Statistikdatabasen, has some impressive features that contribute to the country's high openness score. Users are able to access a convenient list of data topics and select various disaggregations including geographic location, sex, number of years, and data export format. Detailed metadata is also included for many indicators, as well as contact information if users have questions. Perhaps one of the most distinguishing aspects of Sweden's open data portal is the availability of an [API](#). Not only is an open data API available, but it is accompanied by detailed instructions and tutorials on how to use it.

Canada

Ranking fourth in openness globally, Canada takes a different approach to its data organization than Sweden, integrating its data portal within a general data catalog. Users start by selecting a subject, an indicator, and then choose between various sources of those indicators. Sources range from summary tables, census figures, redirect links to their data portal, publications, or even methodology reports. If a user selects a table from the data portal ([CanSim[™]](#)) they're able to customize the table before downloading. CanSim also gives users the option to manipulate the data prior to downloading. For example, users can calculate year-to-date sums or averages, as well as percentage changes over time, and view results before exporting the file. Rich customization features such as these increase the usability of data by increasing its usefulness to users.

Rwanda

Rwanda is one country that has multiple data portals. Typically, having many data portals is not advised, unless each portal contains a specific type of data. Otherwise, users unnecessarily need to use multiple portals to access similar data. Two of the four data portals utilized by the National Institute of Statistics of Rwanda overlap in the type of data disseminated. This section will focus on the portal that holds the most data, [DevInfo Rwandaⁿ](#).

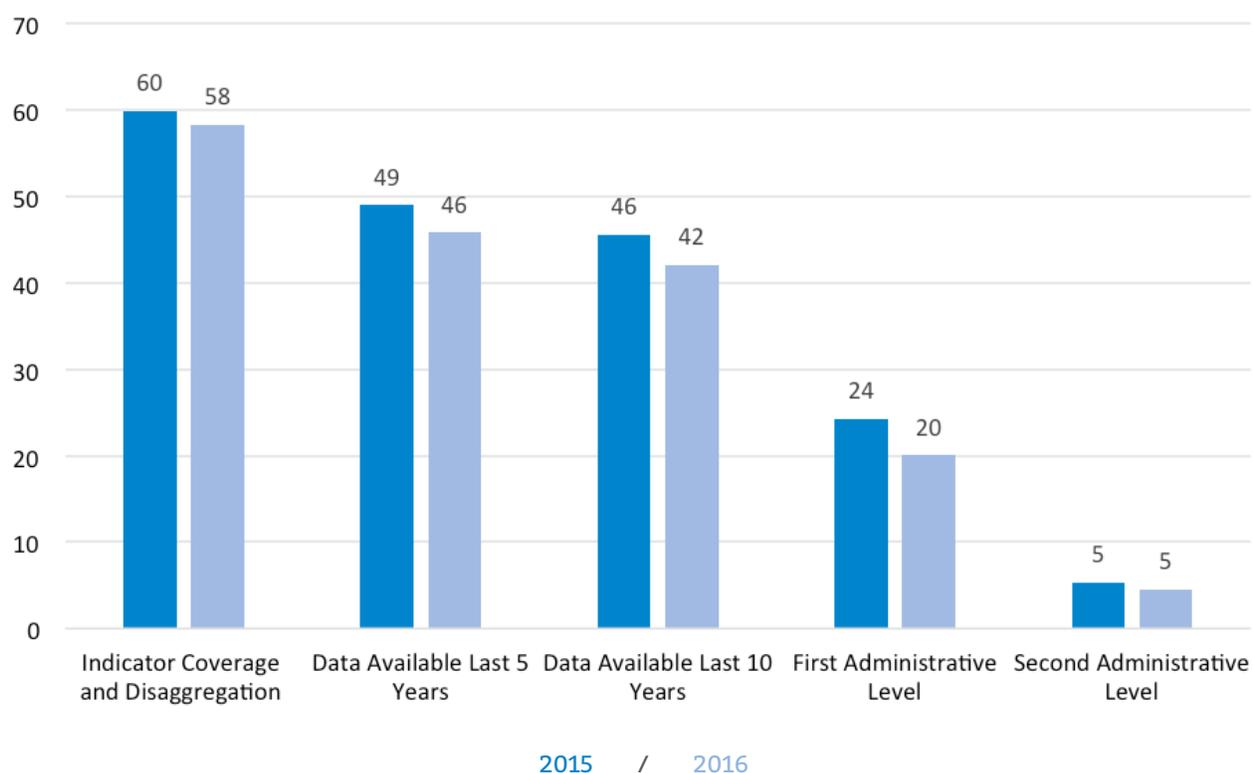
While many countries have their own DevInfo portal (147 countries according to DevInfo.org), from our experience, they are difficult to use or are not well maintained. Rwanda's DevInfo portal is an exception, providing a relatively easy way for users to access, visualize, and export data. After users choose a topic and indicator, they can visualize the data in a variety of charts and tables with many customized options. On the main page, there is also contact information for the database administrator from the NSO, as well as an option to download the entire data set in one machine readable and non-proprietary file.

For countries without the resources to create their own interface for a data portal, Rwanda is a great example how DevInfo can be used effectively by NSOs to disseminate data in an organized and user-friendly way.

Changes Since ODIN 2015

Now that ODIN 2016 has been completed, two years of assessments exist for 122 countries. Because of changes in the ODIN methodology, scores for some elements may not be comparable between the two years. Figure 10 presents score changes by element. For nearly all elements, scores decreased slightly in ODIN 2016. Because of a change in the definition of the non-proprietary element, which expands the formats that are considered non-proprietary, average scores on this element increased from 10 to 64. The other element that saw an increase in ODIN 2016 is free/unrestricted terms of use which doubled its average score from 7 to 16. However, this was not the result of a change in ODIN methodology, but reflects more countries adopting open terms of use.

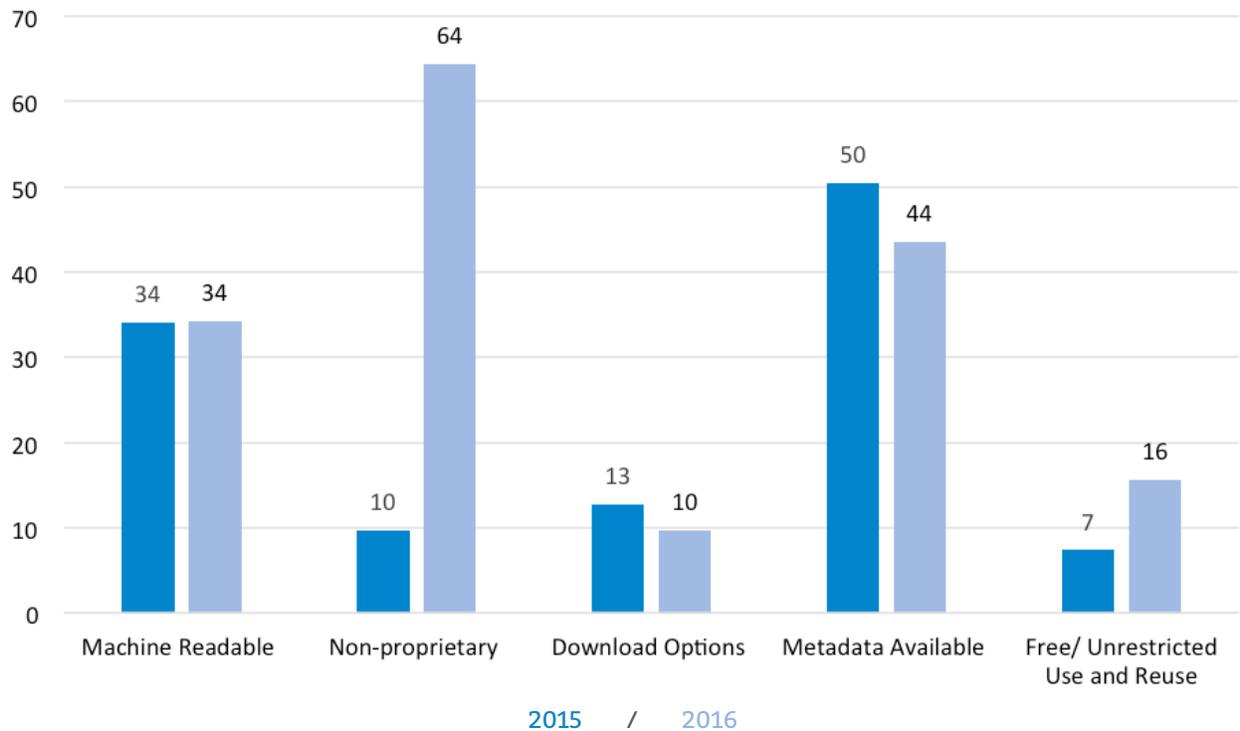
Figure 10. Average ODIN 2015/2016 scores by coverage elements



Lower scores across coverage elements may be related to the stricter enforcement of scoring guidelines, rather than changes made in 2016. For instance, in ODIN 2016, assessors were given an definitive list of qualifying data types. This is why a data set on attitudes toward domestic violence against women may have been accepted for indicator 7.1 (data on violence against women),

or data on forest fire damage for indicator 17.2 (data on deforestation) in ODIN 2015, but not in ODIN 2016. Offsetting the more restrictive list of indicators, ODIN 2016 assessors were instructed to use any official, domestic source of data linked from the NSO website. In ODIN 2015 assessors may have overlooked links to non-NSO sources.

Figure 11. Average ODIN 2015/2016 scores by openness elements



Among the 122 countries where ODIN 2015 and ODIN 2016 data exist, very few countries made large changes in either direction. Here are some that did.

Ecuador

Between ODIN 2015 and ODIN 2016, Ecuador made the largest improvement, increasing its score by 32 points, from 24 to 56. Prior to their ODIN 2016 assessment, Ecuador's statistical office collaborated with Open Data Watch and implemented recommendations to increase the coverage and openness of their statistics. To read more about their efforts, please see page 23.

Mauritius

In ODIN 2016, Mauritius's overall score rose from 29 to 55. The increase is due partly to the inclusion of non-NSO sources, such as the ministry of health, as well as inclusion of data from the country's data portal in the assessment. During the ODIN 2015 assessment, although a

link to the country's data portal was provided on the NSO website, it was not functioning properly. The addition of this information not only increased the country's openness score by providing more data in machine readable and non-proprietary formats, it also increased the years of coverage for many indicators.

Kyrgyzstan

In ODIN 2016, Kyrgyzstan made notable increases in openness, jumping from an openness sub-score of 23 to 52. Since ODIN 2015, Kyrgyzstan has completely revamped its NSO website and has added a terms-of-use policy. Although the policy does not fully satisfy the standards for open access, it permits reuse of data with some restrictions. The new website also features an

extensive methodology section which includes a large amount of metadata for many indicators. These two changes, combined with the effect of ODIN's 2016 methodology change in the criterion for non-proprietary formats, are responsible for Kyrgyzstan's progress.

Guinea

Like Kyrgyzstan, Guinea saw a large increase between ODIN 2015 and 2016, which is mostly accounted for by an increase in openness. The openness elements for machine readability, non-proprietary formats, and download options improved. Although the increase in the non-proprietary element is due to methodology changes, the other elements increased primarily because of the inclusion of Guinea's AfricaData.org portal. In ODIN 2015, this portal was omitted from the assessment because the web page was offline. During the ODIN 2016 assessment and review process, the website was functioning. However, at the time of writing this report, the data portal is offline again.

Burundi

In ODIN 2016, Burundi increased both its coverage and openness scores by considerable margins, resulting in an overall score increase from 19 to 38. In both years, Burundi's main source of information is their annual statistical yearbook. In their most recent publication, the disaggregation of data has increased for several indicators, elevating scores for a handful of data categories that were previously scored zero. However, at the time of writing, the NSO's website is offline.

Sao Tome and Principe

In Sao Tome and Principe, openness scores increased from 4 to 37 because of the addition of data from their data portal. This change was not due to technical issues being resolved, but rather the deliberate decision to link the data portal from the NSO website. According to ODIN methodology, data sources may only be used if a

web link is provided from the NSO website. With this addition, scores for machine readability, non-proprietary format, download options, and terms of use increased across many data categories.

The Gambia

In 2016 The Gambia omitted links to national data portals from the NSO website. In the case of The Gambia, the exclusion of both their DevInfo and AfricaData.org portals led to a decrease of 18 points overall, affecting both coverage and openness. The easiest way for The Gambia to make a quick comeback in ODIN 2017 is to reinstate these web links.

Madagascar

Madagascar had the lowest score of all countries. During the ODIN 2016 assessment, Madagascar began revamping its website. However, during this process data were removed and information on only two data categories was available (money & banking and international trade). At the time of writing, more data have appeared on their website. However, because of the delayed process in returning information to the site, it will remain to be seen if all the data included in the ODIN 2015 assessment have been restored.

Afghanistan, Iraq, and Sudan

In 2016 Afghanistan, Iraq, and Sudan were not included in the inventory because their websites were offline. Although these three countries were the only ones to be completely removed from the inventory due to non-functioning NSO websites, many other NSO websites experienced fluctuations in performance, requiring assessors and reviewers to continuously revisit the sites to complete their work.

Looking Ahead to ODIN 2017

The next round of ODIN assessments will begin in the summer of 2017 following the same process as ODIN 2016. However, incremental improvements are possible. Here are a few changes under consideration for next round to strengthen the usefulness and accuracy of ODIN.

Crime Statistics

ODIN covers twenty data categories, but the intention has always been to add data categories to reflect the growing demand for data, especially data relevant to monitoring sustainable development. The ODIN data category Gender Statistics currently specifies an indicator of violence against women, but the SDGs also call for measures of criminal activity such as illegal arms transfers, payment of bribes, occurrence of homicides, and victimization rates. We are currently working to expand these types of statistics into their own data category.

Agricultural and Food Security Statistics

ODIN has data categories that encompass agricultural statistics, but it is our goal to not only add data categories as needed, but improve the specifications for data categories already included in ODIN. This is why we have partnered with the Food and Agriculture Organization of the United Nations to ensure our agricultural indicators are consistent with their latest guidelines. Results of this collaboration will be put into effect in ODIN 2017.

User-Selected Score Weighting

On the ODIN website, averages of computed across data categories (such as the overall score and the coverage and openness sub-scores) apply equal weights to social, economic, and environmental categories. (See the [ODIN 2016 Methodology Report](#)⁹, page 22.) In ODIN 2017, users will have the option to input their own weights on the ODIN website prior to exporting data. This will permit isolating results for of a data category or a single element of coverage or openness or creating new aggregates of data categories. Statistical offices may also use this function to set priorities for improvements in coverage or openness.

ODIN 2017: FAQs & Methodology Updates

ODIN 2016 is an assessment of the coverage and openness of data provided on the websites maintained by national statistical offices (NSOs) in 173 countries. Building on the previous year's work, ODIN 2016 now includes most of the world's high-income and OECD countries. The assessments analyze datasets across 20 data categories that are the most pertinent to managing and monitoring progress on the SDGs, as well as the social, economic, and environmental development of a country more generally.

The ODIN 2016 assessments were carried out between June and September 2016. Assessment results were reviewed and, if necessary, revised between October and December 2016. All results are based on the data available from the principal NSO website during the assessment period.

What is ODIN?

The Open Data Inventory (ODIN) is an evaluation of the coverage and openness of data provided on the websites maintained by national statistical offices (NSOs). The overall ODIN score is an indicator of how complete and open an NSO's data offerings are. The summary scores for social, economic, and environmental statistics and summary scores for coverage and openness produce a picture of the national statistical systems' strengths and weaknesses. To see a video on ODIN 2016, visit www.opendatawatch.com/odin2016video.

What is ODIN's Purpose?

ODIN helps identify critical gaps, promote open data policies, improve data access, and encourage dialogue between NSOs and data users. NSOs and their development partners can use ODIN as part of a strategic planning process and as a measuring rod for the development of the statistical system. ODIN provides valuable information to data users within the government and private sectors and to the public about the availability of important statistical series. In addition to the ratings of coverage and openness in twenty statistical categories, ODIN assessments record the online location of key indicators in each data category, permitting quick access to hundreds of indicators.

How are Open Data Defined?

There is general agreement on the core meaning of open data. As summarized in the Open Definition, version 2.1, "Knowledge is open if anyone is free to access, use, modify, and share it — subject, at most, to measures that preserve provenance and openness." This definition has been operationalized in the [International Open Data Charter](#)^P. In practical terms, open data should be machine readable in non-proprietary formats, selectable by users, accompanied by descriptive metadata, and free to be used and reused for any purpose without limitations other than acknowledgement of the original source. These requirements have been incorporated in the five elements of the ODIN openness assessment.

What Data Categories are Included?

ODIN assessments review published statistics in twenty categories, grouped as social statistics, economic and financial statistics, and environmental statistics. The ODIN overall score weights the three groups equally. In each category, principal or sentinel indicators were selected because they are frequently needed for public policies or private initiatives and because they provide evidence of underlying statistical processes for which statistical offices are responsible. The guidelines for assessing data coverage in each category are described in the methodological report on the ODIN website.

1. **Population and Vital Statistics**
2. **Education Facilities**
3. **Education Outcomes**
4. **Health Facilities**
5. **Health Outcomes**
6. **Reproductive Health**
7. **Gender Statistics**
8. **Poverty Statistics**
9. **National Accounts**
10. **Labor Statistics**
11. **Price Indexes**
12. **Government Finance**
13. **Money and Banking**
14. **International Trade**
15. **Balance of Payments**
16. **Land Use**
17. **Resource Use**
18. **Energy Use**
19. **Pollution**
20. **Built Environment**

Why Assess National Statistical Offices?

ODIN assessments begin with the websites maintained by national statistical offices because, in most countries, the NSO is the lead agency of the national statistical system, coordinating its work with other governmental bodies that produce official statistics. If an official national data source can be reached from the NSO's website, it is included in the ODIN assessment. NSOs, as producers and caretakers of official statistics, have a special obligation to maximize their public benefit. NSOs can and should be the leading advocate for and provider of high quality, official statistics to government, the public, and to the international community.

Methodology Changes Since ODIN 2015

Assessment process

In 2016 the ODIN research process recorded assessments using an online platform developed for exclusive use of ODIN. This platform allows assessors immediate access to methodology guidelines, examples of data they may encounter and FAQs. The platform has built-in functionality

designed to catch common mistakes and automate some of the scoring process to ensure comparability of scores across countries. The new platform also provides greater ease of use for assessors and reviewers alike, making possible the inclusion of additional countries without extending the research period. Because of the benefits of the new platform, combined with a more extensive training program for country assessors, only one assessor was assigned per country. Following the initial assessment, each country assessment underwent two layers of review, as was the case for ODIN 2015.

Greater coverage

ODIN 2015 covered 125 countries in mostly low- and middle-income countries. In ODIN 2016, this scope was expanded to include many high-income and OECD countries; an addition of 51 countries. Between 2015 and 2016, there are comparable data for 122 countries. (Three countries – Afghanistan, Iran, and Sudan – were removed from the 2016 assessment due to non-functioning websites).

Non-proprietary formats

In ODIN 2016 several file formats are scored as non-proprietary which were treated as proprietary in ODIN 2015. These changes have been made to align with international standards widely recognized by the open data community. The following formats now receive full scores for non-proprietary format: XLSX, DOCX, PPTX, and PDF. These changes had the effect of raising the openness scores for many countries.

Frequency criteria

Many countries currently participate in the IMF's Enhanced General Data Dissemination System (e-GDDS) or Special Data Dissemination Standard (SDDS). These standards provide countries guidance on, among other things, the coverage, periodicity and timeliness of data. During this edition of ODIN, we incorporated the IMF's e-GDDS periodicity requirements for three

economic data categories: National Accounts, Price Indexes, and International Trade. For countries to score full points on the first coverage element for these categories, data published in the last 5 years must be available on at least a quarterly basis. In future versions of ODIN, we will extend this requirement to data published in the last 10 years and likely to additional data categories.

Indicator guidelines

To better align our representative indicators with international guidelines and ensure comparability with the additional countries added in ODIN 2016, updates were made to the indicators and disaggregation of indicators for certain data categories. To learn more specifics, please read ODIN 2016 Methodology Report, which can be downloaded from the ODIN website.

The [ODIN website](#) includes scores for every round of ODIN and provides numerous ways for users to interact and manipulate scores. The following is a brief outline of page of the ODIN website and what it has to offer.

ODIN Home

- The Home page displays a map of the world, showing in color the countries that have been included in the 2016 ODIN assessment. Colors indicate the range of their overall ODIN score. Countries in gray were not include in the 2016 ODIN assessments. The view between different years can be toggled by selecting from the drop-down menu above the map.
- Clicking on a country brings up an information box with the country's aggregate scores and rank. Clicking on the country name takes users to the Country Profile page.
- The data locator tab is available in the Country Profile page, which provides a description of sources used for ODIN assessments.
- A PDF report of a countries' findings can be downloaded from this page by clicking "Download country report." This report shows a summary of results, provides a brief narrative with a list of recommendations, and provides other useful information to better understand the country's context.
- The Country Profile page also provides a multi-year comparison (2015 and 2016) when both years are selected.

Rankings

- The Rankings page displays the overall score and aggregate sub-scores for data coverage and openness for all countries. The display can be sorted by country name, region, or scores by clicking on the table headers.
- The view defaults to ODIN 2016 data, but this can be changed by selecting a year from the drop-down menu.
- To download the dataset as seen on screen, click the download button in the top right corner and select the export file format

Country Profile

- The Country Profile page provides the most detailed information on a country's ODIN scores. Summary scores are shown for the 20 data categories (aggregated over the elements of coverage and openness) and for the 10 elements of coverage and openness (aggregated over the social, economic, and data categories). Graphs provide regional and global comparisons.

Regional Comparison

- The Regional Comparison page gives users the option to compare country scores by geographic regions or income groups within geographic regions. Users choose options from the top drop down menu to display data.
- To download the dataset as seen on screen, click the download button in the top right corner and select the export file format.

DIN countries are grouped by continents and regions defined by the United Nation Statistics Division's [M49 listing of macro geographical regions](#)⁹. Country codes are three character ISO codes. ODIN also includes the Republic of Kosovo and Taiwan, Province of China with the respective ISO codes of XKX and TWN, which are not included in the UN list. Three character regional codes were created for use in ODIN and are not part of the M49 listing.

- ODIN countries have also been classified by the World Bank's income groups.

Country Comparison

- The Country Comparison page allows users to tabulate aggregate scores for one or more countries. The overall score and five scores aggregated over categories and elements are displayed.
- First select the year, followed by regions or sub-regions from which to select countries; then select some or all of the countries.
- To download the dataset as seen on screen, click the download button in the top right corner and select the export file format.

Data Download

- The Data Download provides access to the full ODIN dataset at the item level. Three types of scores can be selected: raw, weighted, and standardized. Raw scores are the original scores recorded by the assessors. Weighted scores have been multiplied by a weighting matrix that gives greater weight to the environment and economic data categories in order to compensate for the fewer number of categories in the overall

score. Standardized scores are derived from the weighted scores by dividing by the sum of their weights and multiplying by 100. The item level standardized scores differ from the raw scores by a factor of 100. Weighting only has an effect on the aggregate scores.

- First select regions or sub-regions and then select countries. The entire database can be selected by choosing all years, regions, and countries.
- The aggregate sub-scores for social, economic, and environmental categories and sub-scores for coverage and openness elements can be selected for downloading. Aggregates or raw scores and weighted scores are simple sums. Aggregates for standardized scores are weighted averages.

Reports

- The Reports page gives access to the ODIN Annual Report, ODIN Methodology Report, and one page country and regional briefs in PDF format.

2016 ODIN 2016 Scores and Rankings

Annex 1: 2016 ODIN Scores and Rankings

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Sweden	Northern Europe	81.0	1	69.7	6	91.3	1
Czech Republic	Eastern Europe	79.1	2	73.7	4	84.0	6
Norway	Northern Europe	77.8	3	66.9	8	87.8	3
Poland	Eastern Europe	77.5	4	74.8	3	80.0	8
Lithuania	Northern Europe	76.6	5	80.8	1	72.7	17
Denmark	Northern Europe	76.1	6	62.4	11	88.7	2
Estonia	Northern Europe	75.8	7	73.0	5	78.5	10
Canada	North America	74.8	8	63.5	10	85.3	4
United States	North America	74.8	9	75.0	2	74.6	14
Finland	Northern Europe	72.0	10	66.7	9	77.0	11
Italy	Southern Europe	71.5	11	61.8	13	80.4	7
Latvia	Northern Europe	71.4	12	68.3	7	74.2	15
Netherlands	Western Europe	69.6	13	52.9	37	85.0	5
Slovenia	Southern Europe	67.7	14	61.6	15	73.4	16
Portugal	Southern Europe	66.9	15	58.2	20	74.9	13
Mexico	Central America	66.8	16	52.8	38	79.7	9
New Zealand	Australia and New Zealand	65.4	17	54.7	31	75.3	12
Germany	Western Europe	64.3	18	55.9	29	72.0	19
Austria	Western Europe	63.4	19	54.5	32	71.5	20
Spain	Southern Europe	63.3	20	53.2	36	72.7	17
Australia	Australia and New Zealand	60.9	21	53.5	34	67.8	22

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Korea, Rep.	Eastern Asia	60.9	22	61.7	14	60.2	27
Mongolia	Eastern Asia	60.7	23	57.8	22	63.4	25
Moldova	Eastern Europe	59.4	24	53.4	35	64.8	24
Switzerland	Western Europe	59.3	25	58.0	21	60.5	26
Ireland	Northern Europe	59.3	26	50.0	43	67.8	22
Bulgaria	Eastern Europe	59.0	27	60.5	17	57.6	30
Hungary	Eastern Europe	57.7	28	58.7	19	56.7	36
Croatia	Southern Europe	57.5	29	60.8	16	54.5	39
Macedonia, FYR	Southern Europe	57.1	30	56.8	25	57.4	32
Ecuador	South America	55.8	31	51.8	41	59.4	28
Rwanda	Eastern Africa	55.4	32	41.6	75	68.1	21
Kyrgyzstan	Central Asia	55.3	33	59.0	18	51.8	43
Mauritius	Eastern Africa	54.8	34	52.7	39	56.8	35
Albania	Southern Europe	54.2	35	53.9	33	54.4	40
Georgia	Western Asia	54.0	36	55.0	30	53.0	42
India	Southern Asia	53.7	37	49.9	44	57.2	33
Russian Federation	Eastern Europe	53.6	38	57.3	23	50.2	45
Serbia	Southern Europe	53.2	39	48.9	47	57.1	34
Armenia	Western Asia	52.4	40	51.3	42	53.4	41
South Africa	Southern Africa	52.1	41	48.3	48	55.6	37
Slovakia	Eastern Europe	51.9	42	56.1	28	48.1	51
Japan	Eastern Asia	51.9	43	45.8	53	57.5	31
Belgium	Western Europe	51.8	44	43.5	65	59.4	28

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Romania	Eastern Europe	51.3	45	56.3	26	46.8	54
United Kingdom	Northern Europe	50.3	46	45.3	56	54.9	38
Belarus	Eastern Europe	48.9	47	62.0	12	36.8	90
Azerbaijan	Western Asia	48.4	48	56.2	27	41.2	71
Kenya	Eastern Africa	47.6	49	45.5	54	49.6	48
Greece	Southern Europe	47.5	50	45.0	59	49.8	47
Kazakhstan	Central Asia	46.8	51	57.2	24	37.2	88
Cyprus	Western Asia	46.6	52	45.9	52	47.3	52
France	Western Europe	45.9	53	41.5	77	50.1	46
Bhutan	Southern Asia	45.8	54	47.2	49	44.4	60
Dominican Republic	Caribbean	45.4	55	44.9	60	46.0	56
Sri Lanka	Southern Asia	45.0	56	46.2	51	43.8	62
Tunisia	Northern Africa	44.7	57	40.4	81	48.7	49
Jordan	Western Asia	44.6	58	49.3	45	40.3	73
Luxembourg	Western Europe	44.4	59	41.4	78	47.2	53
China	Eastern Asia	44.1	60	42.5	71	45.6	58
Chile	South America	44.1	61	45.1	58	43.1	64
Iceland	Northern Europe	43.8	62	38.5	87	48.7	49
Philippines	South-Eastern Asia	43.5	63	49.2	46	38.2	80
Cuba	Caribbean	43.0	64	42.3	73	43.7	63
Mali	Western Africa	42.9	65	38.6	86	46.8	54
Turkey	Western Asia	42.7	66	42.6	69	42.8	66
Brazil	South America	42.7	67	43.6	64	41.8	69

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Palestine	Western Asia	41.9	68	44.4	62	39.5	75
Oman	Western Asia	41.9	69	32.0	123	51.0	44
Ukraine	Eastern Europe	41.6	70	52.4	40	31.7	105
Colombia	South America	41.3	71	44.0	63	38.9	77
Panama	Central America	41.2	72	42.3	73	40.1	74
Bolivia	South America	41.0	73	43.4	67	38.8	78
Guinea	Western Africa	40.8	74	40.2	82	41.3	70
Tajikistan	Central Asia	40.3	75	42.9	68	37.8	82
Singapore	South-Eastern Asia	40.1	76	35.8	101	44.1	61
Malta	Southern Europe	40.0	77	36.8	94	42.9	65
Taiwan, Province of China	Eastern Asia	39.9	78	33.4	115	46.0	56
Montenegro	Southern Europe	39.5	79	45.3	56	34.1	98
Bahrain	Western Asia	39.4	80	35.7	102	42.8	66
Nigeria	Western Africa	39.2	81	40.9	80	37.7	84
Kosovo	Eastern Europe	38.8	82	41.0	79	36.8	90
Cameroon	Middle Africa	38.6	83	34.7	107	42.3	68
Indonesia	South-Eastern Asia	38.5	84	46.9	50	30.7	107
Uganda	Eastern Africa	38.2	85	40.1	83	36.5	93
Suriname	South America	37.8	86	34.8	106	40.6	72
Burundi	Eastern Africa	37.7	87	42.6	69	33.1	100
Kuwait	Western Asia	37.6	88	38.0	88	37.1	89
Nicaragua	Central America	37.5	89	36.8	94	38.1	81
Egypt	Northern Africa	37.3	90	42.4	72	32.5	101

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Thailand	South-Eastern Asia	37.1	91	36.3	98	37.8	82
Malawi	Eastern Africa	36.8	92	34.4	109	39.1	76
Pakistan	Southern Asia	36.7	93	44.7	61	29.2	112
Nepal	Southern Asia	36.5	94	45.4	55	28.3	116
Malaysia	South-Eastern Asia	36.4	95	34.0	111	38.7	79
Liberia	Western Africa	35.7	96	33.9	112	37.3	86
Peru	South America	35.6	97	43.5	65	28.4	115
Senegal	Western Africa	35.5	98	33.3	118	37.5	85
Israel	Western Asia	35.4	99	24.4	148	45.6	58
Paraguay	South America	35.3	100	41.6	75	29.5	111
Vietnam	South-Eastern Asia	35.0	101	33.1	119	36.7	92
Samoa	Pacific Islands	34.9	102	36.7	96	33.2	99
United Arab Emirates	Western Asia	34.7	103	37.7	91	31.9	103
Bangladesh	Southern Asia	34.4	104	40.1	83	29.1	113
Bosnia and Herzegovina	Southern Europe	34.2	105	36.4	97	32.2	102
Hong Kong SAR, China	Eastern Asia	33.7	106	39.9	85	27.9	117
Togo	Western Africa	32.2	107	28.1	135	35.9	95
Sierra Leone	Western Africa	32.1	108	37.7	91	26.9	122
Yemen	Western Asia	32.0	109	37.9	89	26.6	125
Botswana	Southern Africa	31.9	110	33.4	115	30.6	108
Burkina Faso	Western Africa	31.5	111	37.4	93	26.1	129
Tanzania	Eastern Africa	31.4	112	37.9	89	25.4	132
Lesotho	Southern Africa	31.3	113	31.8	124	30.9	106

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Mauritania	Western Africa	31.3	114	30.8	128	31.8	104
Myanmar	South-Eastern Asia	31.2	115	26.2	140	35.8	96
Iraq	Western Asia	31.1	116	35.9	99	26.6	125
Namibia	Southern Africa	30.6	117	31.4	127	29.9	109
Qatar	Western Asia	30.6	118	33.5	114	27.9	117
Argentina	South America	30.5	119	34.6	108	26.8	123
Cabo Verde	Western Africa	30.4	120	24.7	146	35.7	97
Niger	Western Africa	29.7	121	32.7	120	27.0	121
Venezuela	South America	29.6	122	35.3	105	24.3	137
Uruguay	South America	29.3	123	35.9	99	23.3	140
Chad	Middle Africa	29.3	124	32.1	121	26.7	124
Maldives	Southern Asia	29.0	125	30.7	129	27.5	119
Belize	Central America	29.0	126	29.0	132	29.1	113
Timor-Leste	South-Eastern Asia	28.7	127	35.4	104	22.5	144
Lebanon	Western Asia	28.5	128	31.8	124	25.5	131
The Bahamas	Caribbean	28.2	129	32.1	121	24.7	133
Honduras	Central America	28.1	130	33.4	115	23.2	141
Sao Tome and Principe	Middle Africa	28.1	131	18.1	164	37.3	86
Saudi Arabia	Western Asia	28.0	132	33.6	113	22.9	143
Mozambique	Eastern Africa	28.0	133	29.6	131	26.5	127
Morocco	Northern Africa	28.0	134	35.7	102	20.8	152
Guyana	South America	27.8	135	25.7	141	29.7	110
Guinea-Bissau	Western Africa	27.7	136	18.3	163	36.4	94

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Ghana	Western Africa	27.2	137	34.2	110	20.7	153
Fiji	Pacific Islands	27.0	138	31.8	124	22.5	144
Congo, Rep.	Middle Africa	26.6	139	27.1	139	26.1	129
Micronesia, Fed. Sts.	Pacific Islands	26.6	140	28.9	134	24.4	136
Lao PDR	South-Eastern Asia	26.1	141	24.9	144	27.3	120
Djibouti	Eastern Africa	26.1	142	27.9	136	24.5	135
Zimbabwe	Eastern Africa	26.0	143	29.8	130	22.5	144
Guatemala	Central America	25.7	144	24.9	144	26.4	128
Solomon Islands	Pacific Islands	24.9	145	29.0	132	21.1	151
Vanuatu	Pacific Islands	24.9	146	27.6	138	22.3	147
Cote d'Ivoire	Western Africa	24.1	147	23.5	152	24.7	133
Congo, Dem. Rep.	Middle Africa	23.7	148	27.7	137	20.0	156
Ethiopia	Eastern Africa	22.8	149	24.5	147	21.2	150
St. Lucia	Caribbean	22.7	150	23.9	150	21.6	149
Turkmenistan	Central Asia	22.6	151	25.0	143	20.5	154
Angola	Middle Africa	22.6	152	22.2	157	23.0	142
South Sudan	Eastern Africa	22.3	153	20.7	159	23.8	138
Kiribati	Pacific Islands	22.3	154	20.6	160	23.8	138
Benin	Western Africa	22.2	155	22.7	156	21.7	148
Algeria	Northern Africa	21.8	156	24.2	149	19.5	158
Cambodia	South-Eastern Asia	21.6	157	22.9	155	20.4	155
St. Vincent & Grenadines	Caribbean	21.2	158	25.4	142	17.4	164
Marshall Islands	Pacific Islands	21.1	159	23.0	154	19.4	159

Country	Region	Overall		Coverage		Openness	
		Score	Rank	Score	Rank	Score	Rank
Zambia	Eastern Africa	21.1	160	23.9	150	18.5	161
El Salvador	Central America	20.8	161	23.1	153	18.7	160
Costa Rica	Central America	18.7	162	21.2	158	16.4	165
Gabon	Middle Africa	18.5	163	17.3	165	19.7	157
Jamaica	Caribbean	18.5	164	19.4	161	17.6	162
Trinidad and Tobago	Caribbean	18.3	165	19.1	162	17.6	162
The Gambia	Western Africa	15.2	166	15.2	168	15.2	166
Papua New Guinea	Pacific Islands	13.8	167	15.6	167	12.0	168
Uzbekistan	Central Asia	12.5	168	12.8	169	12.3	167
Anguilla	Caribbean	9.7	169	9.3	170	10.1	169
Libya	Northern Africa	8.0	170	15.7	166	1.0	173
Swaziland	Southern Africa	5.0	171	4.0	171	6.0	170
Haiti	Caribbean	4.5	172	3.6	172	5.2	171
Madagascar	Eastern Africa	3.2	173	3.1	173	3.3	172

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