

Chapter 2. Measuring the distance to the SDGs in OECD regions and cities: Framework and overview

Measuring the distance of regions and cities towards the SDGs implies developing an adapted, comparable and consensual framework that builds on, but goes beyond, the country-centred UN framework. This chapter presents the OECD localised indicator framework for SDGs, as well as its methodology to measure the distance of regions and cities to each of the 17 Sustainable Development Goals. Being a unique internationally comparable SDGs indicator framework for subnational units, it allows documenting the share of OECD regions and cities that are lagging behind with respect to the objectives for 2030 and quantifies the average distance that these regions and cities have to travel in order to reach the desired outcomes. Finally, the chapter identifies the main data gaps and sets the statistical agenda to improve the measurement of the SDGs at the subnational level.

Introduction

The 2030 Agenda for Sustainable Development is an ambitious action plan that requires the involvement of all sectors of the society and levels of government. The 17 Sustainable Development Goals framework with its 169 targets recognises that ending all kinds of social deprivations must go hand in hand with economic prosperity and the planet's protection and that the achievement of this agenda will be possible only with the engagement and co-operation of all sectors of society and levels of government.

Regions and cities have a shared responsibility, alongside national governments, in delivering the Sustainable Development Goals. Regions and cities are closer to people's needs. Their role, when potentiated with adequate capacities and resources, is crucial to ensure “no one is left behind”. In 2016, OECD subnational governments were responsible for around 40% of total public expenditure and 60% of total public investment. Of these public resources, at least 70% were invested in core areas of the SDGs, such as education, public services, economic affairs and environmental protection (see OECD, 2018c).

Subnational governments need to know where they stand against the SDGs in order to achieve the 2030 Agenda. Evidence regarding their “distance” to the SDGs is crucial for local governments to redefine priorities, strategies, budgeting and redirect action towards the achievement of the SDGs. Monitoring progress over time is also key for regions and cities. For example, local authorities need data to ensure policies are delivering the intended outcomes and to readjust their actions when necessary.

This chapter presents a framework to localise the SDG targets and indicators in regions and cities. The framework includes a method to measure the distance of regions and cities to each of the 17 Sustainable Development Goals, trying to maximise international comparisons. To shed light on regional disparities and go beyond the national average reported under the UN global indicator framework, many regions and cities are defining place-specific indicator frameworks for SDGs. However, what is currently missing is a consensual, comparable and standardised localised SDGs indicator framework to benchmark performances within countries and across regions and cities. The work presented in this chapter contributes to bridging this gap and supporting public action in cities, regions and countries.

Applying the OECD methodology to measure the distance to the SDGs to a selection of headline indicators, this chapter presents normalised indexes by goal to capture the performance of regions and cities in each of the 17 SDGs. The OECD localised indicator framework normalises SDGs indicators from 0 to 100 – where 100 is the suggested end value of an indicator (to be achieved by 2030) – and aggregates the indicators that belong to the same goal to provide an index score towards each of the SDGs. The distance to the target or goal is simply the number of units the index needs to travel to reach the maximal score of 100. It is worth noting that even if the OECD localised indicator framework builds on the OECD country-level framework (OECD, 2019a); particularly for the definition of end values, there are some methodological differences between the two frameworks that are explained by the nature and objectives of each tool (see section below for more details).

The average distance of OECD regions to the end values for 2030 varies across the 17 goals and ranges from regions being 25% to 60% of the way to achieving the desired outcomes. For example, while the average distance to achieving SDGs 10 “Reduced inequalities”, 8 “Decent work”, 11 “Sustainable cities”, and 16 “Peace and institutions” is on average less than 30% of the total possible distance (the total possible distance being the difference between the end value and the worst possible outcome in the sample of regions), SDGs 15

on “Life on land”, 9 “Industry and innovation” and 14 “Life below water” are, on average, halfway from the end values. In SDG 17 (Partnerships and enablers for SDGs), SDG 3 (Good health) and SDG 1 (No poverty), regions are, on average, one-third of the way to reaching the end values for 2030.

According to the available indicators, at least 80% of OECD regions have not achieved the end values for 2030 in any of the 17 goals. Not a single region in the OECD has achieved the suggested end values set for SDG 13 on “Climate action” and SDG 5 on “Gender equality”, and only around 20% of OECD regions have achieved the end values of SDG 10 on “Reduced inequalities” and SDG 12 on “Responsible consumption”. SDGs 14 (Life below water), 9 (Industry and innovation) and 7 (Clean energy) display the largest distances to the end values for lagging regions (lagging regions being the regions that have not achieved the end values), with an average distance above 50%. SDG 7 about clean energy displays high regional disparities in distances to the objective. While 18% of the regions have completed the goal’s end values, the remaining 82% of regions average a distance higher than 44% of the total possible way to travel.

Measuring the distance to the SDGs with an index by goal is sensitive to the selected indicators. This implies that policymakers should always consider the full set of information available to design and implement policies towards the SDGs. The framework presented here includes more than 130 indicators available at the scale of regions or cities (functional urban areas). However, having a readable picture for communication purposes requires reduced metrics. Therefore, this report also provides indexes by goal. SDGs indexes are useful for communication and visualisation, but they are only an entry point to further analyse the whole set of indicators underlying each goal. For this reason, and to ensure the highest transparency of the measurement exercise, it is essential that all individual indicators are easily accessible – for this report, all indicators and the corresponding metadata will be available in the OECD Regional Statistics Database and in the SDGs visualisation tool (see oecd-local-sdgs.org).

The SDGs are pushing the statistical frontier for territorial indicators, where new sources of data and partnerships are key to fill the data gaps and to advance the statistical agenda. In addition to the traditional statistical indicators regularly supplied by national statistical offices (NSOs) and included in the OECD Regional and Metropolitan databases, new sources of information can help to bridge the SDGs data gaps at the subnational level for OECD countries. For example, the OECD is developing protected area statistics at the subnational level using the World Database on Protected Areas (see IUCN/UNEP-WCMC, 2019) and is currently leveraging the potential of earth observation and geospatial information to produce more SDGs indicators disaggregated by geographical location. For instance, through the publicly available GHSL gridded data on population and built-up area (see Schiavina et al., 2019; and Corbane et al., 2018), it has been possible to estimate the gap “of land consumption rate to population growth rate” (SDG 11.3.1) for all regions and cities in OECD countries.

The OECD localised indicator framework for SDGs

The UN global indicator framework defines countries as the main spatial scale at which national governments and agencies should measure and report progress towards the SDGs. The UN General Assembly adopted the UN global indicator framework in July 2017 (resolution A/RES/71/313). The Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) developed a set of 232 indicators to follow and

review the SDGs. These indicators are “a voluntary and country-led instrument that includes the initial set of indicators to be refined annually” (see UN, 2017).

National averages often misrepresent realities in regions and cities, and they tend to mask large territorial disparities, compromising the SDGs’ premise of leaving no one behind. OECD economic and well-being indicators at the subnational level confirm that national averages mask important within-country disparities. For example, while “fine particulate matter 2.5” seems to have been achieved in Australia at the country level in 2017 (value lower than 10 micrograms per cubic metre), four cities of Australia appear to be lagging behind in this indicator – the worst-off city being 5 micrograms per cubic metre above the suggested levels.

At the same time, cities and regions are increasingly using the SDGs to shape their local development plans and strategies, which is generating a demand for subnational indicators to assess policies and progress towards the SDGs. Regions and cities require a more adapted and context-specific indicator framework to monitor progress towards all the SDGs and to generate evidence to guide local actions. A localised indicator framework for subnational geographies should go far beyond SDG 11 on “Sustainable cities and settlements” and build on the consideration of the UN global indicator framework that “Sustainable Development Goal indicators should be disaggregated, where relevant, by [...] geographic location, [...] in accordance with the Fundamental Principles of Official Statistics”.

The OECD has identified that at least 105 out of the 169 SDG targets require the full engagement and participation of regions and cities to deliver the intended outcomes. These targets often relate to core public services and policies that subnational governments are responsible for, such as the “percentage of seats held by women in local governments”, or relate to outcomes strongly associated to place characteristics, such as the “gender gap in the unemployment rate”.

The localised indicator framework for SDGs presented in this chapter aims at supporting regions and cities in OECD and partner countries to measure their distance towards the SDGs. With more than 130 indicators, the OECD localised indicator framework for SDGs covers more than 600 regions and 600 cities in 65 out of the 105 subnational SDG targets (although the regional and city coverage can widely vary from one indicator to another). To shed light on territorial disparities and to go beyond national averages, many regions and cities are defining place-specific sets of SDGs indicators. However, what is currently missing is a consensual, comparable and standardised localised SDGs indicator framework to measure performances across regions and cities from an international comparative perspective. The OECD localised indicator framework aims to bridge this gap by ensuring consistent definitions and comparable indicators across regions and cities of OECD and selected partner countries.

Building on and complementing other initiatives linked to SDGs at the subnational level

The OECD localised indicator framework gets part of its inspiration from the OECD country-level framework presented in the series of “Measuring the Distance to SDG Targets” (OECD, 2017a; 2019a), particularly for the methodology to measure distance and the definition of end values. However, due to the nature and objectives of each tool, there are important methodological differences between the two frameworks.

The three main differences between the OECD country-level framework and the OECD localised framework are the selection process of relevant indicators, the method to normalise indicators, and the level of aggregation of indexes for communication purposes. While the country-level framework is quite strict in following the UN global indicator framework, the localised framework prioritises indicators with good spatial coverage over following the exact definitions of the official UN indicators. This is mainly for two reasons, lower data availability at the subnational level and a higher number of spatial units. The country-level framework currently covers 36 OECD countries in 105 targets, while the localised framework covers more than 1 000 OECD regions and cities in 65 SDG targets.

Regarding the normalisation process, for communication purposes the localised indicator framework uses scores from 0 to 100 (using the ratio scale max-min method); whereas the country-level framework measures distance in terms of standard deviations (modified z-score method)¹. Finally, even if both frameworks can measure the distance at the indicator, target and goal levels, the national framework tends to communicate results using indexes at the level of the target (see OECD, 2019a) and the subnational framework presented here focuses on indexes at the goal level.

The OECD localised indicator framework has also benefitted from the work and knowledge of other initiatives to localise the SDGs, mainly to identify relevant subnational targets and indicators. For example, to identify the relevant SDGs targets to be measured at the subnational level (see section below), the OECD drew inspiration from the conceptual work of United Cities and Local Governments (UCLG) that provides a rationale to localise a broad selection of targets (UCLG, n.d.). Once the relevant OECD subnational targets were identified, the necessary step consisted in mapping SDG indicators. This exercise benefitted from other indicators mappings initiatives, such as the ones by Eurostat (for the national level), the World Council on City Data (WCCD), the European Commission's Joint Research Centre (JRC) and the UN Sustainable Development Solutions Network (SDSN), among others (see Box 2.1 for more details about other initiatives).

Box 2.1. Other initiatives to localise the SDGs at the subnational level

In parallel to the *OECD Territorial Approach to the SDGs*, other initiatives led by national and local governments or international organisations have been supporting the monitoring of the SDGs at the subnational level. Many of the programmes and initiatives to localise SDGs focus on providing guidelines, roadmaps and mappings of indicators, which have inspired some aspects of the OECD localised framework; with respect to the existing initiatives, the OECD localised indicator framework focuses on measuring the distance to the SDGs and in particular in a broad and diverse international setting.

Many national statistical offices (NSOs) are working on localising SDGs data to help their regions and cities monitor progress towards the SDGs. These initiatives provide useful tools for regional policy at the country level, although they tend to focus less on ensuring international comparability. For instance, the government of Ireland – in partnership with Ordnance Survey Ireland, the Central Statistics Office and the Environmental Systems Research Institute (Esri) – has created an online SDG platform (irelandsdg.geohive.ie) that provides data and maps at the regional level (large and small regions) for some of the indicators listed in the UN indicator framework. The Italian Alliance for Sustainable Development (ASviS) – with the statistical support of the Italian National Institute for Statistics (Istat) – has created an interactive online database that allows tracking the

progress of the Italian regions with respect to the SDGs. The platform contains the time series of available UN indicators and indexes by SDG (<https://asvis.it/dati/#>). The government of Mexico and the INEGI (*Instituto Nacional de Estadísticas y Geografía*) have gathered state-level data in the Information System of Sustainable Development Goals (SIODS) to track the evolution of Mexican states in several indicators drawn from the UN framework (agenda2030.mx). Although these national governments, NSOs and associations have engaged in the production of publicly available detailed statistics to measure the SDGs at the local level, they often adopt an approach that focuses on their country's territory and does not allow for international comparisons. An international perspective can nonetheless enhance co-operation and sharing of best practices across regions and cities from different countries.

Other international organisations are also working on the localisation of the SDGs with an international perspective. Some of the initiatives do not focus on the measurement aspects or have limited coverage in terms of regions and cities. Among the most visible initiatives figure the ones of the Joint Research Centre (JRC), the World Council on City Data (WCCD) and the Sustainable Development Solutions Network (SDSN):

- The JRC developed *The European Handbook for the preparation of Voluntary Local Reviews on SDGs*. One of the objectives of the handbook is to help European cities access and utilise European Union (EU) data so they can assess where they stand regarding the SDGs. The handbook provides a detailed description of each relevant indicator, its advantages and limitations and specifies the data sources where cities can extract information for each indicator. Most of these data are available from Eurostat (ec.europa.eu/eurostat/data/database) and in the Urban Platform Database (urban.jrc.ec.europa.eu).

This JRC work is in line with the OECD approach to identify relevant SDG targets and indicators at the subnational level, as well as making the data and methodologies easily accessible for policymakers. One difference between the JRC handbook and the OECD localised framework – explained by the aim of each initiative – is that the OECD approach provides results on the distance of OECD regions and cities towards the SDGs. Another difference is that while JRC focuses on cities and urban areas, the OECD approach also includes regions in the analysis.

- The WCCD report *WCCD City Data for the United Nations Sustainable Development Goals* (2018). The WCCD has started to implement the first ISO standard (ISO 37120) to grant certification to cities that collect and measure a certain range of indicators on sustainable development – with a focus on city services and quality of life (www.dataforcities.org). After mapping the standardised 100 indicators with the UN indicator framework for SDGs, the WCCD provides the results by indicator for each city that belongs to the network. Since certification is demand-led, the WCCD's network currently covers around 60 cities across the world.

One important difference between the WCCD and the OECD approach relates to the OECD methodology to measure the distance towards goals. In addition, while the WCCD defines cities based on municipal administrative boundaries, the OECD approach defines them following the functional urban areas (FUAs) approach.

- The SDSN *2019 SDG Index and Dashboards Report on European Cities*. The SDSN's initiative has achieved both a degree of measurement at the subnational

level and an international perspective (for Europe). Similar to the OECD approach, the SDSN's work also provides quantitative results based on scores by goal (euro-cities.sdgindex.org), although it uses a system of rankings and scoreboards for cities rather than focusing on distances to the end values. In its first prototype, the SDSN covers around 45 cities that are either the capital or large cities in Europe. It is worth noting that while the SDSN defines cities based on the administrative boundary approach, the OECD framework follows the functional urban approach and includes regions – which allows coverage of the entire territory of each country included in the analysis.

One similar element between the OECD localised framework and the SDSN is the use of normalised indexes from 0 to 100 (where 100 is the best possible score). However, while the SDSN defines upper bounds or end values using top performer cities (five top cities), the OECD localised framework uses the average generated by the top regions or cities of each OECD country. The OECD approach – which covers all regions and cities in each country – allows this method to set end values, where at least one region or city of each country involved in the analysis participates to define an end value that is both ambitious and feasible in their own context.

Sources: JRC (2020), *The European Handbook for the preparation of Voluntary Local Reviews on SDGs*; WCCD (2018); *WCCD City Data for the United Nations Sustainable Development Goals*, <https://www.dataforcities.org/>; SDSN (2019), *2019 SDG Index and Dashboards Report on European Cities*, https://s3.amazonaws.com/sustainabledevelopment.report/2019/2019_sdg_index_euro_cities.pdf.

Identifying the relevant SDG targets for OECD regions and cities

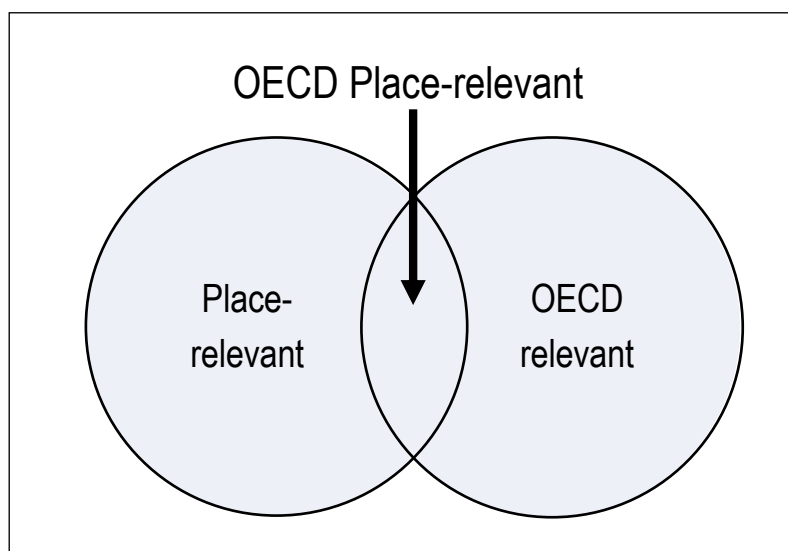
Localising an indicator framework for SDGs requires identifying which SDG targets are most relevant at the subnational scale. In the context of OECD countries, 105 out of the 169 SDG targets have been identified as very relevant for regions and cities. Through an extensive literature review and expert consultation (see Box 2.1 and Box 2.3), the 169 SDG targets from the UN indicator framework have been classified by their level of relevance – in terms of measurement – at the subnational level. Subsequently, a subset of these SDG targets has been selected on the basis of its applicability to the context and specificities of OECD countries. The result is a selection of 105 SDG targets for OECD regions and cities (hereafter also referred to as the “subnational SDG targets”, see Annex Table 2.A.1).

Measuring SDGs at the subnational level requires selecting the appropriate scale of analysis. Depending on the phenomenon under consideration, specific geographical scales at which to monitor indicators can be more appropriate than others and different levels of granularity should be ideally pursued. Going subnational requires that consistent definitions of geographical units are used when collecting or producing indicators in order to maximise international comparability. At the same time, it is important to ensure a clear link between the indicators and the action of subnational governments. This implies that measuring SDGs at the subnational level should integrate, to the extent possible, geographical units based on the existing administrative organisation of regions and cities (administrative boundary approach) with those reflecting the actual economic and functional organisation of places (the functional economic approach). While subnational authorities are interested in measuring outcomes within the boundaries of their jurisdictions, in several policy domains it is important to take into account the economic

dynamic of the many contiguous local authorities that function as an integrated whole. This analysis looks at both regions² – administrative approach – and cities³ – functional approach – to capture the SDGs at two of the main subnational scales relevant for policymakers.

The SDGs indicator framework for OECD regions and cities is place-based and OECD relevant. The SDG targets for regions and cities under the framework presented here fulfil two criteria. The first is that the SDG targets should have a strong subnational component, (in opposition to being place-neutral). The second criterion requires the SDG targets to be relevant in the context of OECD countries (contrary to targets highly directed at “low-income countries”) (Figure 2.1). While 159 of the SDG targets appear to have a strong subnational component, only 105 of them are also very important in the context of OECD countries, and thus should be included in the OECD localised indicator framework for SDGs (Table 2.1). The indicators suggested for these targets (by the IAEG-SDG in the UN indicator framework) are by default considered as potentially relevant for OECD regions and cities and subjected to a second assessment, similar to the one applied at the target level.

Figure 2.1. Relevant SDG targets for OECD regions and cities



SDG targets and indicators are relevant for OECD regions and cities either for being a competence or jurisdiction of a subnational government or because they are connected to regional development policy (i.e. due to potential regional disparities within countries). For example, SDG indicators 1.5.4 “[...] local governments implementing a disaster risk reduction strategy” or 5.5.1 “[...] seats held by women in local governments” explicitly evoke the subnational dimension of the target. Alternatively, the OECD has largely documented that SDG indicators such as 8.5.2 “unemployment rates, by sex and age” or 11.6.2 “exposure to air pollution (PM2.5)” depict strong regional disparities within countries and thus require subnational monitoring and place-based policies to be dealt with (OECD, 2018b).

SDG targets and indicators that refer explicitly to a domain of national governments or that are not generally relevant in the context of OECD countries are not included in the OECD localised framework. All SDGs and targets are crucial for the world’s sustainable development, and all countries, regions and cities should contribute to their achievement.

However, some targets' elements and indicators are less relevant for OECD regions and cities and thus their measurement and monitoring are not seen as a priority. For instance, SDG indicator 8.8.2 about “compliance with labour rights based on national legislation” explicitly highlights that the implementation has to take place at the national level. Other types of SDG indicators such as 7.1.1 on “access to electricity” and 2.1.1 on “undernourishment” seem not to be among the main challenges for OECD countries, which pushes the OECD to focus on indicators better adapted or more relevant to the OECD context, namely “percentage of renewable energy in total electricity production” or “adult obesity rates” respectively.

In 15 out of the 17 goals, at least half of the targets are relevant for OECD regions and cities. As shown in Table 2.1, the proportion of sub-nationally relevant targets in the context of the OECD countries reaches 75% or more in the case of SDG 9 “Industry and innovation”, SDG 7 “Clean energy”, SDG 13 “Climate action”, SDG 4 “Quality education”, SDG 1 “No poverty”, SDG 5 “Gender equality” and SDG 11 “Sustainable cities”. While 90% of the targets for “Sustainable cities” are clearly applicable to OECD regions and cities, only around 30% of the targets of SDG 17 “Partnerships and enablers for the SDGs” and 40% of the targets for SDG 14 “Life below water” appear as a priority to be measured at the subnational level in OECD countries.

Table 2.1. Relevant SDG targets for OECD regions and cities, by SDG

	Number of SDG targets	Targets with a subnational component (OECD and non-OECD)	Relevant targets for OECD regions and cities	Percentage of targets relevant for OECD regions and cities
All SDGs	169	159	105	62.1
SDG 1. No poverty	7	7	6	85.7
SDG 2. Food security and agriculture	8	6	5	62.5
SDG 3. Good health	13	11	7	53.8
SDG 4. Quality education	10	10	8	80.0
SDG 5. Gender equality	9	9	8	88.9
SDG 6. Clean water	8	8	5	62.5
SDG 7. Clean energy	5	4	4	80.0
SDG 8. Decent work	12	11	8	66.7
SDG 9. Industry and innovation	8	8	6	75.0
SDG 10. Reduced inequalities	10	9	5	50.0
SDG 11. Sustainable cities	10	10	9	90.0
SDG 12. Responsible consumption	11	11	7	63.6
SDG 13. Climate action	5	4	4	80.0
SDG 14. Life below water	10	10	4	40.0
SDG 15. Life on land	12	12	6	50.0
SDG 16. Peace and institutions	12	11	7	58.3
SDG 17. Partnerships and enablers for SDGs	19	18	6	31.6

Mapping OECD territorial indicators to the subnational SDG targets

Building on its longstanding work on territorial indicators, the OECD has gathered 135 indicators to monitor progress in regions and cities towards the SDGs. Comparable indicators for regions and cities in OECD member and partner countries are consolidated in the OECD Regional and Metropolitan Databases (see Box 2.2 for more information). Over the last 20 years, these tools have extensively supported regional analysis and policymaking, as well as the monitoring of well-being and inclusive growth in regions and cities.

The localised indicator framework presented in this chapter builds on the subnational statistics of the OECD Regional and Metropolitan Databases but it is not limited to those sources. By looking at the OECD databases through the SDG lens (OECD, 2016a), more than 100 indicators for regions and cities have been identified as relevant to monitor the SDG targets of the UN framework. These indicators cover around 62% of the subnational SDG targets. In addition to the OECD databases, other indicators were collected or modelled from different sources, including Eurostat, JRC and specific large international databases of microdata such as Gallup World Poll (see Brezzi and Diaz, 2016; and OECD, 2013) or world gridded data (see the complete list of indicators in Annex Table 2.A.2). While the OECD databases provide around 67% of the indicators to monitor SDGs in regions and cities (with the OECD Regional and Metropolitan Databases contributing to around 60% and the OECD Environmental Database to 7%), the remaining 33% of the indicators come either from Eurostat and JRC or from OECD estimations using sources such as Gallup World Poll, the World Database on Protected Areas (IUCN/UNEP-WCMC, 2019), the Global Database of Power Plants (Byers L. et al. 2019; Global Energy Observatory, 2018) and the Historical global-gridded degree-days Database (Mistry, 2019). Besides, to fill the data gaps, the OECD is increasing its work with the Working Party on Territorial Indicators as well as exploring new sources of data and modelling methods.

Box 2.2. The OECD Regional and Metropolitan Databases

The OECD Regional Database provides a unique set of comparable statistics and indicators on about 2 000 regions in 36 OECD countries, plus Brazil, China, Colombia, India, Peru, the Russian Federation, South Africa and Tunisia. It currently encompasses yearly time series for more than 100 indicators of demography, economic accounts, labour market, social and innovation themes in the OECD member countries and other economies.

The OECD classifies its regions on two territorial levels, reflecting the administrative organisation of countries. The 398 OECD large (TL2) regions represent the first administrative tier of subnational government, for example the Ontario Province in Canada. The 2 251 OECD small (TL3) regions correspond to administrative regions, with the exception of Australia, Canada and the United States. These TL3 regions are contained in a TL2 region, with the exception of the United States for which the economic areas cross the states' borders. For New Zealand, TL2 and TL3 levels are equivalent and defined by regional councils. All regions are defined within national borders.

This classification – which, for European countries, is largely consistent with the Eurostat NUTS 2013 classification – facilitates greater comparability of geographic units at the same territorial level. Indeed, these two levels, which are officially established and relatively

stable in all member countries, are used as a framework for implementing regional policies in most countries.

The OECD Metropolitan Database provides a set of economic, environmental, social, labour market and demographic estimated indicators on the 649 OECD metropolitan areas (functional urban areas with 250 000 or more inhabitants).

The OECD Metropolitan Database relies on a consistent definition of functional urban areas (FUAs) applied across countries, which was developed in collaboration with the European Union. Using population density and travel-to-work flows as key information, an FUA consists of a densely inhabited city and of a surrounding area (commuting zone) whose labour market is highly integrated with the city (OECD, 2012). The ultimate aim of the OECD-EU approach to functional urban areas is to create a harmonised definition of cities and their areas of influence for international comparisons as well as for policy analysis on topics related to urban development.

Using FUAs allows designing policies at the right scale, for example, for mobility and accessibility to services. At the same time, FUAs provide a harmonised methodology to compare similar urban units in size and function. This is particularly relevant in the context of the SDGs, a universal global agenda that requires comparability across the globe in order to track progress towards sustainable development.

Sources: OECD (2019c), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>; OECD (2019e), “Metropolitan areas”, <https://doi.org/10.1787/data-00531-en>.

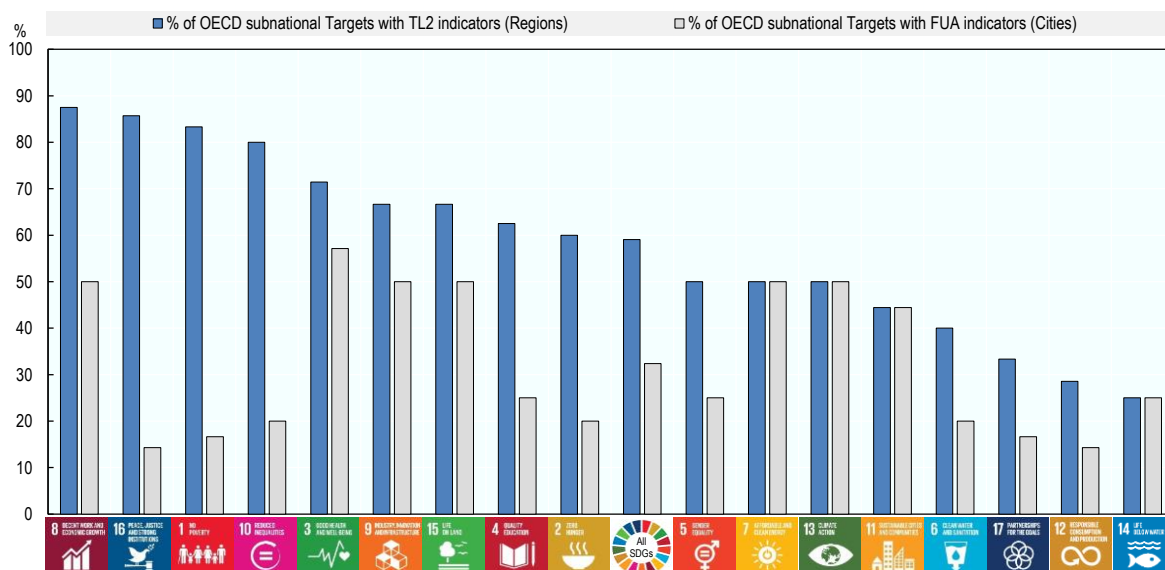
Monitoring the achievement of SDGs at subnational level requires setting priorities in terms of indicators and identifying good proxies. The UN global indicator framework for SDGs provides an “official” list of suggested indicators to measure the SDG targets, which in most cases mirrors the statistics adapted and produced by national statistical offices (NSOs) at the national level. Therefore, finding the exact “UN indicator” for OECD subnational units is often challenging, and sometimes not even relevant. In order to select subnational indicators for SDGs, the framework presented here prioritises proxy indicators – those capturing the essence of the target – with high methodological comparability and spatial coverage over exact UN “official” indicators with low territorial availability.

With its 135 indicators, the set of indicators for SDGs presented here covers at least one aspect of each of the 17 SDGs for both regions and cities. Nevertheless, the coverage in terms of indicators and targets is higher for regions than for cities. Table 2.2 shows that in total 135 indicators are available for the measurement of the SDGs in both regions (TL2) and cities (functional urban areas, FUAs). However, the coverage varies depending on the type of geographical unit to which each indicator is associated. While 122 indicators (covering 59% of the subnational SDG targets) are available for regions, only 56 indicators (covering 32% of the subnational SDG targets) are currently available for cities. Although the set of indicators aims to cover the broad spectrum of all 17 SDGs, the coverage in terms of indicators also varies widely across SDGs. Whereas SDGs 8 and 16 have indicators for at least 85% of the selected targets, SDGs 12 and 14 have indicators for less than one-third of the selected targets (Figure 2.2).

Table 2.2. Subnational SDG targets with indicators for regions and cities, by SDG

	OECD subnational targets with TL2 indicators	Number of TL2 indicators	OECD subnational targets with FUA indicators	Number of FUA indicators	OECD subnational targets with TL2 or FUA indicators	Number of different TL2 or FUA indicators
All SDGs	62	122	34	56	65	135
SDG 1. No poverty	5	5	1	1	5	5
SDG 2. Food security and agriculture	3	4	1	1	4	5
SDG 3. Good health	5	9	4	4	5	10
SDG 4. Quality education	5	8	2	3	5	10
SDG 5. Gender equality	4	6	2	2	4	6
SDG 6. Clean water	2	4	1	2	2	4
SDG 7. Clean energy	2	6	2	5	3	7
SDG 8. Decent work	7	20	4	6	7	20
SDG 9. Industry and innovation	4	11	3	5	4	14
SDG 10. Reduced inequalities	4	9	1	2	4	9
SDG 11. Sustainable cities	4	8	4	8	5	12
SDG 12. Responsible consumption	2	3	1	2	2	3
SDG 13. Climate action	2	6	2	5	2	6
SDG 14. Life below water	1	3	1	3	1	3
SDG 15. Life on land	4	7	3	5	4	7
SDG 16. Peace and institutions	6	10	1	1	6	10
SDG 17. Partnerships and enablers for SDGs	2	3	1	1	2	4

Note: TL2 indicators correspond to regions and FUA indicators to cities.

Figure 2.2. Percentage of subnational SDG targets with indicators for regions and cities

Note: TL2 indicators correspond to regions and FUA indicators to cities.

How to measure the distance to the SDGs in regions and cities?

In order to achieve sustainable development globally, the SDGs provide 169 targets to be reached by 2030. Although some of these targets set specific quantitative or qualitative end values, most end values are not explicit in the UN framework. Measuring distance facilitates the understanding of how much progress a region or city needs in order to reach the desired outcomes.

Defining precise end values for 2030 is essential to measuring the distance to the SDGs. By defining end values for 2030, regions and cities can assess where they stand today and seize how much distance they have to travel in order to reach the intended end value. They can also compare their distance with respect to national averages and other peer regions and cities, and monitor progress over time. The distance to the SDGs can be in practice measured either by indicator, target or goal.

This report defines end values with the purpose of shedding light on the global trends in OECD regions and cities towards the SDGs, based on available indicators and with the objective of providing technical guidance for governments on a possible way to use the SDGs indicator framework as a tool to advance local development plans and sustain evidence-based policies. The OECD recognises that the definition of end values by a specific region or city is a political process based on the knowledge of the contextual strengths and challenges, and should be accompanied by a consultative process with local stakeholders. For this reason, it should be kept in mind that the end values defined in this framework are just a mean to exemplify how the SDGs indicators can be used to inform policymakers. These end values do not correspond to any political decision or prioritisation process of any subnational government, hence they should not be regarded as a rule or as a hard policy recommendation – although they can be indicative of a desirable and reachable outcome according to the OECD and other international agencies or expert groups (e.g. the World Health Organization [WHO], UN-Habitat or the International Labour Organization [ILO]).

End values in the OECD localised framework are sufficiently ambitious to reflect the context of OECD countries. When end values are not defined in the UN framework, the setting of end values by local authorities (for their jurisdictions) can turn out to be a sensitive issue. This might favour, for example, the setting of end values that are very easy to achieve. Nevertheless, the SDGs are an urgent call for action and thus require ambitious objectives. The OECD is acting as a platform for regions and cities to set ambitious, realistic and impartial end values for 2030.

While many end values are defined at the level of the target in the UN framework, in practice, end values have to be set at the level of the indicator. For example, Target 4.5 “By 2030, eliminate gender disparities in education [...]” suggests achieving zero gender gaps in education whichever indicators are used. For the OECD localised framework, this implies setting to zero the end value for the indicators of the gender gap in the rate of early leavers from education and the gender gap in the adult population with tertiary education.

When they are not inferable from the UN framework, the OECD defines end values for indicators based on the knowledge of experts in the field or, alternatively, based on the best performance of regions and cities in that indicator. Many end values for the indicators are set by the UN framework in the description of the target. For example, Target 3.2 states that by 2030, all countries should “[...] reduce neonatal mortality to at least as low as 12 per 1 000 live births and children (under five years old) mortality to at least as low as 25 per

1 000 live births”. This is a clear indication of the levels that all regions and cities should be aiming at.

Nevertheless, most UN targets and indicators are not very clear about the intended end value. For instance, Target 7.2 suggests that by 2030 all countries should “increase substantially the share of renewable energy in the global energy mix”. Although this target provides the intended direction of the indicator (an increase), it does not explain what a “substantially increase” is and thus leaves the end value subject to interpretations and ambiguity. Similarly, Target 11.6 that aims at reducing “[...] the adverse per capita environmental impact of cities [...]” – measured by annual mean levels of fine particulate matter (PM2.5) – delineates the “positive” sense of the indicator, which is reducing air pollution, but does not specify which levels countries should aim at. For these types of targets, the OECD framework sets end values based on the knowledge from experts and practitioners in the field or, alternatively, based on the best-performing regions or cities in the OECD for the indicator in question. In the case of the indicator on “percentage of electricity production that comes from renewable sources”, the end value is based on the best-performing regions and cities (i.e. 82% or more of electricity coming from renewable sources), while in the example of “exposure to air pollution from PM2.5”, the recommendation of the WHO (to reach a value of PM2.5 lower than 10 micrograms per cubic metre) is followed (WHO, 2006).

The localised SDG indicator framework presented here attributes end values to 88% of its indicators, of which 65% are defined using the criteria of “best performers”. There is a subset of indicators for which end values should not be set, as these indicators are only useful to contextualise or complement an indicator with an actual end value. These indicators are still included in the OECD localised framework since they are useful and informative to understand the context of regions and cities in a specific issue. For example, Target 8.8 aims at protecting “labour rights and promote safe and secure working environments for all workers, including migrant workers [...]”. For this target, the OECD localised framework uses indicators of labour market integration of migrants such as unemployment rates and over-qualification rates for the foreign-born population. However, it also integrates the indicator of the percentage of foreign-born among the total population as this indicator can help policymakers to gauge the magnitude and contextualise the aforementioned indicators. For example, while Baja California (Mexico) and Queensland (Australia) display very similar levels of unemployment for the foreign-born (of around 6.5%), the presence of migrants varies widely suggesting different needs in terms of resources and policy to tackle unemployment of migrants – in Baja California, only 2.5% of the population (90 000 people) is of foreign origin, whereas in Queensland 25.5% of the population (1 225 000) is migrant (Diaz Ramirez et al., 2018).

Indicators and end values for monitoring distance to SDGs at the subnational level are the result of multiple consultations with experts from NSOs, the pilot regions and cities actively involved in the OECD’s programme *A the Territorial Approach to SDGs* and other key stakeholders working on the same topic. The OECD has already held two workshops to consult and discuss the OECD localised indicator framework. The first workshop with the pilot regions took place on 8 March 2019. The second workshop “Towards an OECD localised indicator framework for SDGs”, held on 14 May 2019 gathered representatives of the pilots with delegates from the NSOs, and members of the Working Party on Territorial Indicators (WPTI) and the Working Party on Urban Policy (WPURB), as well as other organisations working on localising the SDGs, e.g. the Sustainable Development Solutions Network (SDSN), the Joint Research Centre (JRC), United Cities and Local Governments (UCLG) and associations of local and regional governments (LRG). Through

these dialogues, technical and conceptual bottom-up feedback from stakeholders is reshaping the OECD localised framework into an adapted and useful tool for regions and cities (see Box 2.3).

Box 2.3. Co-designing the OECD localised indicator framework for SDGs

The first workshop on localised SDGs indicators took place in Paris (France) on 8 March 2019. It gathered representatives of the OECD pilot regions and cities working on the localisation of the SDGs. The main conclusions of the workshop were:

- The need to combine international comparable indicators with context-specific indicators.
- Indicators should be used to raise awareness and promote policy dialogue (not only to create rankings).
- Setting end values tends to be a difficult local political process: the OECD can help by suggesting end values based on experts' knowledge and objective criteria.
- Preference for disaggregated data: when using indexes, always show individual indicators.

The second workshop on localised SDGs indicators was held in Paris (France) on 14 May 2019. The pilots, OECD delegates (from the WPTI and WPURB) and stakeholders from other international organisations attended the workshop. The discussion was very technical and centred around two questions:

- For indicators without a predetermined “end value” for 2030, how to define these values?
- For a composite index by SDG, how to normalise and aggregate indicators?

The OECD has also collected bottom-up feedback from the pilots on the OECD indicator framework. This feedback has helped the OECD to identify common relevant indicators for regions and cities, as well as data gaps at the subnational level. The OECD asked the pilot regions and cities for detailed feedback on the indicators for the OECD localised framework. The main questions of the questionnaire were:

- For each OECD indicator, assess how relevant this indicator is to help measuring the SDGs in regions and cities (from 0 to 5; where 0 stands for “Not relevant” and 5 stands for “Very relevant”).
- For each OECD indicator, mark the ones you are also integrating or considering to include in your region- or city-specific indicator framework.
- Which indicators would you suggest to fill the OECD data gaps?

The third workshop on localised SDGs indicators took place in Bonn (Germany) on 10 December 2019 and gathered representatives of the nine OECD pilot regions and cities. This session focused on how to utilise and articulate both SDGs indicators from the OECD localised framework (comparative international perspective) and specific indicators from the pilots (local perspective) to monitor progress and guide their policies towards the SDGs.

A composite index by SDG

A composite index by goal can be useful for communication purposes, although policymaking should always consider all the information available. While the 135 available indicators are the most important and reliable source to help regions and cities to measure their distances to the SDGs (by indicator), having a readable picture for communication purposes requires reduced metrics. Communicating results to the general public can be challenging and ineffective with a large set of indicators. For this reason, the OECD localised SDG framework also presents an index by goal. Contrary to having only one index that aggregates the 17 SDGs (and potentially creating a black box effect), an index by goal seems to represent a good compromise between the need to make an overall assessment for the SDGs and the accuracy and coherence of the information provided.

Even though the SDGs indexes are useful for data communication and visualisation, they are only an entry point to further analyse the whole set of indicators. Policymakers should always consider the full set of information available to have a reliable picture of the distance to SDGs, as well as to design and implement policies for sustainable development. For this reason, transparency is an essential feature of the OECD localised framework, where accessibility to all individual indicators is always ensured.

Each of the 17 indexes uses a selection of indicators that better reflect the essence of the goal and that benefit from good coverage across OECD regions and cities. One of the main issues when dealing with composite indexes is the fact that if one of the selected indicators is missing for one region or city, this region or city has to be excluded from the analysis in order to avoid biased and misleading results. Using too many indicators within goals would also increase complexity and create a “black box” effect. For these reasons, in this framework, each index by goal does not use more than four indicators.

Apart from prioritising indicators that capture the essence of the goals and with a good data coverage across OECD regions and cities, the composite index by goal combines only certain types of indicators to keep some readability and coherence in the framework. The main technical criteria used to select the indicators included in the computation of the composite index are the following:

- Indicators expressed in relative terms are not combined with indicators expressed in absolute terms. Indicators in relative terms are generally prioritised, as they ensure higher comparability and less dependency on the size of the geographical units. Examples of such indicators include, among many others, the gross value added (GVA) per worker, patent applications per 1 000 000 people, or early leavers from education expressed as a percentage of the 18-24 year-old population.
- Avoid combining the same indicator expressed in levels and changes over time. For example, income levels and income growth rate since the growth levels of low-income economies will tend to be higher, everything else being equal.
- Favour the combination of positively correlated indicators (once the indicators have been defined towards a “positive” direction, e.g. “reduce” air pollution, or “increase” productivity) as tracking progress over time can become very difficult when using highly uncorrelated indicators.
- Prioritise indicators from official and consolidated data sources over new modelled indicators or experimental data sources, as official sources tend to be more reliable and undisputed by policymakers.

The index by goal is estimated as the aggregation of normalised indicators that take values from 0 to 100, where 0 is the worst possible outcome and 100 is the end value of the goal. The process of estimation can be described in six steps that have to be applied separately for regions and for cities (the description below focuses on regions):

1. For each selected indicator, define its desired direction. For example, the gender gap in the unemployment rate (female-male) is positive on average, hence the desired direction for this indicator is “negative” as it should “decrease” from current positive values towards zero in 2030.
2. Define the end value of the indicators based on the UN framework, experts’ knowledge or best performers. According to the 2030 Agenda (UN framework), countries should aim at eradicating gender disparities; therefore, the selected end value should be equal to zero for the indicator of the gender gap in the unemployment rate. If the end value for the indicator is based on the “best performers” criteria, the OECD estimates an unweighted average using the top performer region of each country. This method is preferred over the one using the top 10% of all regions together as the latter can result in an end value being determined by the regions of only one or very few countries. Although there is an ongoing discussion on whether end values should be defined separately for OECD and non-OECD countries or by macro-region (e.g. Latin American Countries [LAC], Middle East and North Africa [MENA], European Union [EU], etc.), this report uses only OECD countries to define the end values for all the OECD and non-OECD regions and cities included in the analysis.
3. Define the start value (estimated worst possible performance) of the indicators based on the bottom 10% of regions and cities. Outliers can have a distortive and misleading interpretation of normalised indicators. For this reason, instead of using the minimum value of the whole distribution of regions as the starting value, the OECD methodology opts for using the average of the bottom 10% of all regions.
4. Normalise indicators using the min-max method, where *min* stands for the start value and *max* represents the end value. The scores of the indexes are obtained using the formula \hat{x}_i in the case of a positive indicator (e.g. employment rate or patent application rate) or the formula \check{x}_i for negative indicators (e.g. unemployment rate or air pollution). Regions with values below 0 are set to 0, and regions with values above 100 are set to 100 (indicator achieved).

$$\hat{x}_i = 100 * \left(\frac{x_i - \min(x)}{\max(x) - \min(x)} \right)$$

$$\check{x}_i = 100 * \left(\frac{\max(x) - x_i}{\max(x) - \min(x)} \right)$$

5. For goals with more than one indicator, the index is defined by the unweighted mean of the normalised value of the respective indicators. The decision of not assigning weights to the indicators comes from the fact that there is not a clear rule on which indicator is more relevant with respect to the others. All the indicators included for a composite index aim at capturing one specific component of the goal that would not be captured by the other indicators alone. Most composite indexes rely on equal weighting (EW), which implies that each indicator is worth the same in the index (see OECD/JRC, 2008).
6. Finally, the distance of each region to the end value for 2030 is simply estimated as 100 minus the value of its index in that goal. For example, a region with an index of 75 in SDG 3 is 25 points away from the end value of 100. A distance equal to zero implies that the goal has been achieved.

The composite index by goal summarises the performance of a region or city, based on today's outcomes (i.e. most recent data), towards the intended end values (from 0 to 100, where 100 is the end value). As end values are normalised to 100, the index allows inferring in an easy way the distance that a region or city still has to travel to reach the intended outcome for 2030 (i.e. 100 minus the value of the index). In this sense, one can also interpret the average distance of a region or city to an end value in terms of the remaining trajectory that the region or city has to travel as a percentage of the longest distance a region or city could face in a given indicator or index. For example, since the maximal distance one can face is always of 100 points, if the index in one goal is of 70 points, thus the distance to reach the goal is of 30 points and this represents 30% of the maximal distance a region or city could face in this or any goal.

Based on the criteria outlined above, the OECD has selected 39 indicators for regions and 25 indicators for cities to produce the 17 indexes for the goals. Tables 2.3 and 2.4 show the indicators selected for the indexes as well as the desired direction of the indicator and the rule to define end value. While 39 indicators were selected for regions, only 25 indicators were identified for cities due to the lower availability of indicators at the FUA level. Nevertheless, the complete set of 135 indicators selected for the framework will be available through the visualisation tool designed by the OECD (Box 2.4). It is worth noting that these indexes capture some elements of each SDG, while they might miss other important aspects of the goals. For this reason, the indexes should always be interpreted based on the indicators that compose them. Table 2.5 summarises some of the main OECD relevant data gaps identified for each SDG, as well as some of the OECD ongoing work to fill these data gaps.

Table 2.3. Selected indicators for the regional indexes, by SDG

Goal	OECD TL2 indicator	Desired direction of indicator	Rule to define end value
SDG 1. No poverty	Average disposable income per day of the first quintile (equivalised household, in USD purchasing power parity [PPP], constant prices of 2010)	+	Best performers
	Percentage of population with a disposable income below the 60% of national median disposable income	-	Best performers
SDG 2. Food security and agriculture	Productivity (GVA per worker) in agriculture, forestry and fishing (ISIC rev4) (in constant 2010 USD PPP)	+	Best performers
	Change in cropland (from 1992 to 2015, percentage points)	+	Based on UN framework
SDG 3. Good health	Infant mortality rate (number of deaths of children 1-year-old or younger per 1 000 live births)	-	Best performers
	Life expectancy at birth	+	Best performers
	Active physicians rate (active physicians per 1 000 people)	+	Best performers
SDG 4. Quality education	Percentage of early leavers from education and training, for the 18-24 year-old population	-	Best performers
	Percentage of population from 25 to 64 years old with at least tertiary education	+	Best performers
SDG 5. Gender equality	Gender gap in employment rate (male-female, percentage points)	-	Based on UN framework
	Gender gap in part-time employment incidence (female-male, percentage points)	-	Based on UN framework
SDG 6. Clean water	Change in water bodies (from 1992 to 2015, percentage points)	+	Best performers

Goal	OECD TL2 indicator	Desired direction of indicator	Rule to define end value
SDG 7. Clean energy	Percentage of total electricity production that comes from renewable sources	+	Best performers
	Percentage of total electricity production that comes from coal	-	Based on Paris Agreement
	Percentage of total electricity production that comes from fossil fuels (natural gas and oil, excluding coal)	-	Based on Paris Agreement
SDG 8. Decent work	Annual growth rate of real GVA per worker (%)	+	Best performers
	Unemployment rate (%)	-	Best performers
	Youth unemployment rate (%)	-	Best performers
SDG 9. Industry and innovation	Productivity (GVA per worker) in manufacture (ISIC rev4) (in constant 2010 USD PPP)	+	Best performers
	Patent applications (Patent Cooperation Treaty [PCT]) per 1 000 000 people	+	Best performers
	Percentage of labour force with at least tertiary education	+	Best performers
SDG 10. Reduced inequalities	Gini index of disposable income (after taxes and transfers) (from 0 to 1)	-	Best performers
	Ratio between average disposable income of top and bottom quintiles	-	Best performers
SDG 11. Sustainable cities	Difference between built-up area growth rate and population growth rate (percentage points)	-	Based on OECD (2017b)
	Exposure to PM2.5 in µg/m ³ , population weighted (micrograms per cubic metre)	-	Based on WHO
SDG 12. Responsible consumption	Municipal waste rate (kilos per capita)	-	Best performers
	Number of motor road vehicles per 100 people	-	Best performers
SDG 13. Climate action	Percentage of population satisfied with efforts to preserve the environment	+	Best performers
	CO2 emissions per electricity production (in tons of CO2 equivalent per gigawatt hours)	-	Best performers
	Change in cooling degree-days needed to maintain an average building indoor temperature of 22 degree Celsius, from 1970-84 to 2004-18 ⁴	-	Based on Paris Agreement
SDG 14. Life below water	Protected coastal area as a percentage of total coastal area ⁵	+	Best performers
SDG 15. Life on land	Change in tree cover (from 1992 to 2015, percentage points)	+	Best performers
	Terrestrial protected areas as a percentage of total area	+	Best performers
SDG 16. Peace and institutions	Homicides per 100 000 persons	-	Best performers
	Percentage of population that feel safe walking alone at night around the area they live	+	Best performers
	Percentage of population that have confidence in the national government	+	Best performers
	Percentage of population that have confidence in the local police force	+	Best performers
SDG 17. Partnerships and enablers for SDGs	Share of PCT co-patent applications that are done with foreign regions (in % of co-patent applications)	+	Best performers
	Percentage of households with broadband internet access	+	Best performers

Table 2.4. Selected indicators for the city indexes, by SDG

Goal	OECD FUA indicator	Desired direction of indicator	Rule to define end value
SDG 1. No poverty	Percentage of population with a disposable income below the 60% of national median disposable income	-	Best performers
SDG 2. Food security and agriculture	Percentage of people with access to at least one food shop within 15 minutes' walking distance	+	Best performers
SDG 3. Good health	Infant mortality rate (number of deaths of children 1-year-old or younger per 1 000 live births)	-	Best performers
	Transport-related mortality rates (deaths per 100 000 people)	-	Best performers
SDG 4. Quality education	Percentage of people with access to at least one school within 20 minutes' walking distance	+	Best performers
	Percentage of population from 25 to 64 years old with at least tertiary education	+	Best performers
SDG 5. Gender equality	Gender gap in employment rate (male-female, percentage points)	-	Based on UN framework
SDG 6. Clean water	Change in water bodies (from 1992 to 2015, percentage points)	+	Best performers
SDG 7. Clean energy	Percentage of total electricity production that comes from renewable sources	+	Best performers
	Percentage of total electricity production that comes from coal	-	Based on Paris Agreement
	Percentage of total electricity production that comes from fossil fuels (natural gas and oil, excluding coal)	-	Based on Paris Agreement
SDG 8. Decent work	Annual growth rate of real GDP per worker (%)	+	Best performers
	Unemployment rate (%)	-	Best performers
SDG 9. Industry and innovation	Patent applications (PCT) per 1 000 000 people	+	Best performers
SDG 10. Reduced inequalities	Gini index of disposable income (after taxes and transfers) (from 0 to 1)	-	Best performers
SDG 11. Sustainable cities	Difference between built-up area growth rate and population growth rate (percentage points)	-	Based on OECD (2017b)
	Exposure to PM2.5 in $\mu\text{g}/\text{m}^3$, population weighted (micrograms per cubic metre)	-	Based on WHO
SDG 12. Responsible consumption	Number of motor road vehicles per 100 people	-	Best performers
SDG 13. Climate action	CO2 emissions per electricity production (in tons of CO2 equivalent per gigawatt hours)	-	Best performers
	Change in cooling degree-days needed to maintain an average building indoor temperature of 22 degree Celsius, from 1970-84 to 2004-18	-	Based on Paris Agreement
SDG 14. Life below water	Protected coastal area as a percentage of total coastal area	+	Best performers
SDG 15. Life on land	Change in tree cover (from 1992 to 2015, percentage points)	+	Best performers
	Terrestrial protected areas as a percentage of total area	+	Best performers
SDG 16. Peace and institutions	Homicides per 100 000 persons	-	Best performers
SDG 17. Partnerships and enablers for SDGs	Percentage of houses and buildings connected to optical fibre	+	Best performers

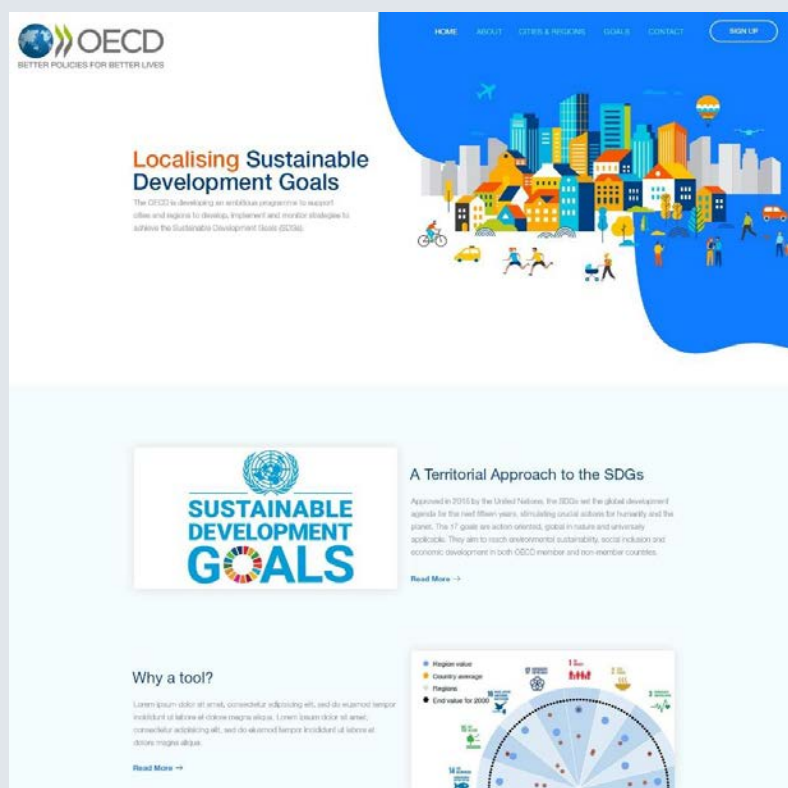
Table 2.5. Summary of data gaps in SDG indexes

Goal	Some relevant data gaps in SDGs indexes	Ongoing OECD work related to data gaps
SDG 1. No poverty	<ul style="list-style-type: none"> Households with access to basic services (e.g. sewer lines, heating, water and electricity) 	
SDG 2. Food security and agriculture	<ul style="list-style-type: none"> Malnutrition (e.g. undernourishment and obesity) 	<ul style="list-style-type: none"> Adult obesity (data collection in progress through the WPTI)
SDG 3. Good health	<ul style="list-style-type: none"> Mortality from non-communicable diseases (e.g. mortality attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease) Deaths and illnesses from pollution (e.g. mortality attributed to ambient air pollution) 	<ul style="list-style-type: none"> Mortality due to respiratory and cardiovascular diseases (data collection in progress through the WPTI)
SDG 4. Quality education	<ul style="list-style-type: none"> Lifelong learning Population with information and communications technology (ICT) skills 	<ul style="list-style-type: none"> Percentage of population from 25 to 64 years old participating in education and training (data collection in progress through the WPTI)
SDG 5. Gender equality	<ul style="list-style-type: none"> Violence towards women (e.g. physical or sexual violence, and feminicides) Women participation in government 	<ul style="list-style-type: none"> Percentage of women who experienced physical or sexual violence in the last 12 months (data collection in progress through the WPTI) Percentage of women who are mayors (data collection in progress through the WPTI)
SDG 6. Clean water	<ul style="list-style-type: none"> Proportion of wastewater safely treated Level of water stress 	<ul style="list-style-type: none"> Households with at least secondary wastewater treatment (data collection in progress through the WPTI)
SDG 7. Clean energy	<ul style="list-style-type: none"> Population with primary reliance on clean fuels 	
SDG 8. Decent work	<ul style="list-style-type: none"> Child labour Sustainable tourism 	
SDG 9. Industry and innovation	<ul style="list-style-type: none"> Access of small- and medium-sized enterprises (SMEs) to credit High-tech industry value added (in total value added) CO2 emission per unit of value added 	
SDG 10. Reduced inequalities	<ul style="list-style-type: none"> Income growth of the poorest population 	
SDG 11. Sustainable cities	<ul style="list-style-type: none"> Slums (geolocalised) Homelessness Victims of physical or sexual harassment 	
SDG 12. Responsible consumption	<ul style="list-style-type: none"> Recycling Material footprint per capita 	<ul style="list-style-type: none"> Percentage of municipal waste that is recycled (data collection in progress through the WPTI) Electric vehicles as a percentage of total vehicles (data collection in progress through the WPTI)
SDG 13. Climate action	<ul style="list-style-type: none"> Victims of natural disasters 	
SDG 14. Life below water	<ul style="list-style-type: none"> Plastics debris Sustainable fishing 	
SDG 15. Life on land	<ul style="list-style-type: none"> Conservation of mountain ecosystems 	<ul style="list-style-type: none"> Assessing the possibility of estimating mountainous protected areas
SDG 16. Peace and institutions	<ul style="list-style-type: none"> Corruption Discrimination Victims of violence 	<ul style="list-style-type: none"> Using Gallup World Poll to estimate percentage of population that believes corruption is spread throughout the government Using Gallup World Poll to estimate percentage of population that believes their place of residence is a good place to live for migrants, or gays and lesbians
SDG 17. Partnerships and enablers for SDGs	<ul style="list-style-type: none"> Subnational finance and decentralisation (e.g. government revenue as a percentage of gross domestic product (GDP), and budget funded by own taxes) Decentralised development co-operation (e.g. official development assistance [ODA]) Partnerships for SDGs between regions and cities, and between the public and private sector 	<ul style="list-style-type: none"> Assessing the use of individual regional accounts to estimate government revenue as a percentage of GDP, and budget funded by own taxes When available, using agency codes to disaggregate ODA at the subnational level

Box 2.4. OECD visualisation tool for SDGs in regions and cities

Under the Territorial Approach to the SDGs programme, the OECD is developing a visualisation tool to help policymakers to measure the distance of regions and cities towards the SDGs (see oecd-local-sdgs.org). The tool will cover around 600 regions and 600 cities from OECD and partner countries (Argentina, Brazil, Colombia, Costa Rica, Peru, the Russian Federation, Tunisia and the non-OECD EU-28) and will include around 130 indicators to monitor progress across the 17 SDGs. These indicators can be visualised individually or as a composite index (based on the methodology described in this chapter).

Figure 2.3. Homepage of the visualisation tool



The web tool will allow each region and city to visualise its distance to an end value for 2030, compare it to its country peer regions and to the country average. In the example below, the region of Brussels-Capital was selected. The wheel of distances (Figure 2.4) displays the normalised performance (from 0 to 100) of Brussels-Capital in each of the 17 SDGs. The pointed circumference at the end of the wheel is the normalised end value to be achieved by 2030. The tool allows visualising in a simple way the distance that Brussels-Capital has to travel in order to achieve each SDG and to compare it to the national average distance of Belgium, as well as the distances of its peer Belgian regions of Wallonia and Flanders.

With the objective of enhancing partnerships and the sharing of best practices for the SDGs among regions and cities, the tool will also suggest three profiles of similar regions or cities from different countries (e.g. similar to Brussels-Capital). The similarity between regions is determined in terms of relevant characteristics (e.g. population size or GDP per capita).

However, only the regions or cities that overall are performing better on their path towards achieving the Sustainable Development Goals are considered. Finally, the web tool will also allow visualising the distance of a region or city towards an end value with respect to all OECD regions or cities (Figure 2.5). This visualisation can be done either by goal index or by individual indicator.

Figure 2.4. Wheel of regions' and cities' distances to the SDGs

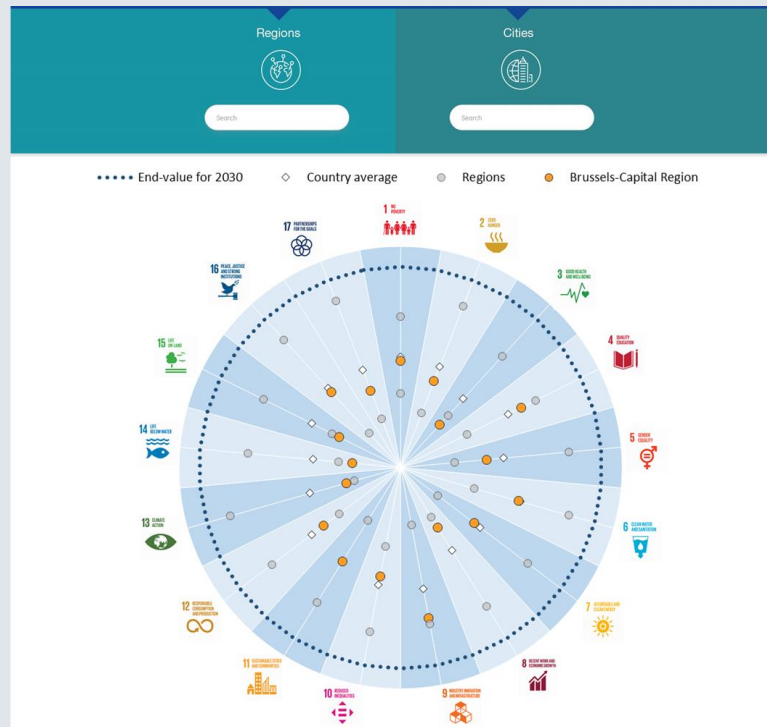


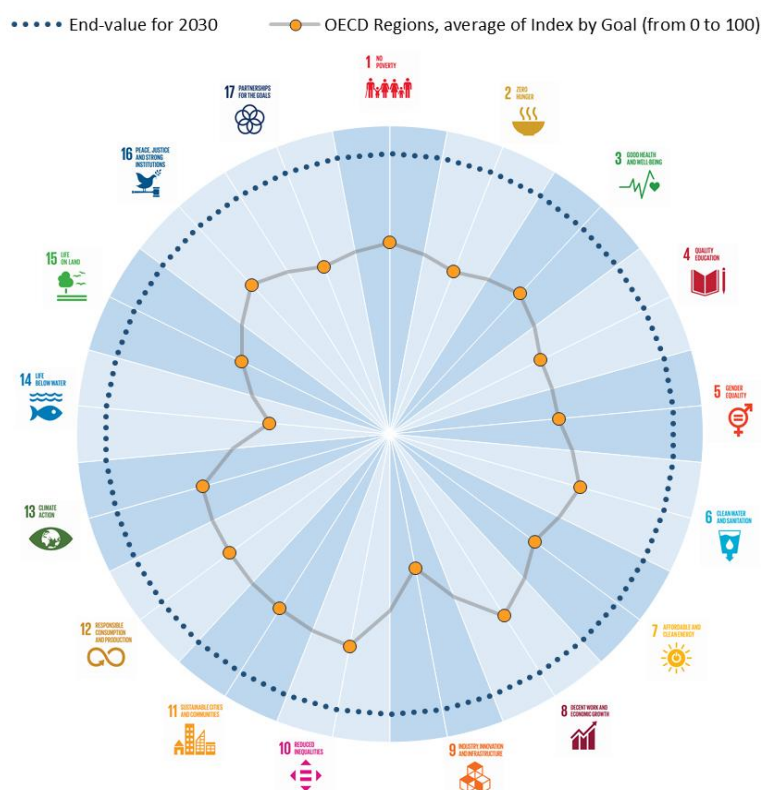
Figure 2.5. Distance to end value by index and indicator



General overview of the distance to the SDGs in OECD regions and cities

The average distance of OECD regions to the end values for 2030 varies across the 17 goals and ranges from 25% to 60% of the total possible distance to achieve the desired outcomes. The average distance of a region or city to an end value is the remaining trajectory the region or city has to travel as a percentage of the longest distance a region or city could face in a given indicator or index. While the average distance of regions to achieve SDGs 10 “Reduced inequalities”, 8 “Decent work”, 11 “Sustainable cities” and 16 “Peace and institutions” is on average less than 30% of the total possible trajectory, SDGs 15 on “Life on land”, 9 “Industry and innovation” and 14 “Life below water” are, on average, halfway from the end values. In SDG 17 (Partnerships and enablers for SDGs), SDG 3 (Good health) and SDG 1 (No poverty), regions are, on average, one-third of the way to reach the end values for 2030 (Figure 2.6).

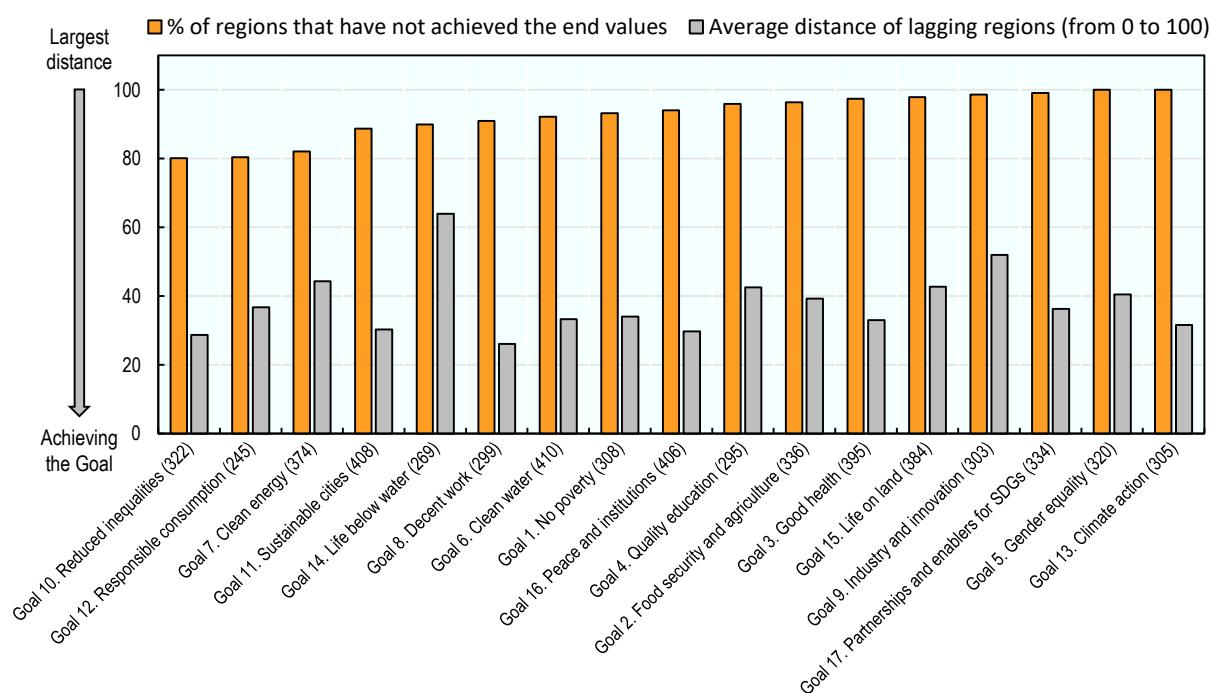
Figure 2.6. Distance of OECD regions to the end values for 2030, by SDG



Note: This graph uses 39 indicators distributed across the 17 SDGs. OECD averages include Colombia when data are available; this applies to all the Figures and Tables of this chapter. On 25 May 2018, the OECD Council invited Colombia to become a Member. While Colombia is included in the OECD averages reported in this publication, at the time of its preparation, Colombia was in the process of completing its domestic procedures for ratification and the deposit of Colombia’s instrument of accession to the OECD Convention was pending.
Sources: OECD (2019c), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>; OECD (2019b), *OECD Environment Statistics (database)*, <https://doi.org/10.1787/env-data-en>; IUCN/UNEP-WCMC (2019), *The World Database on Protected Areas (WDPA)*, <http://www.protectedplanet.net>; Mistry (2019), “Historical global-gridded degree-days: A high-spatial-resolution database of CDD and HDD”, <https://doi.org/10.1002/gdj3.83>; Byers L. et al. (2019), “A Global Database of Power Plants”, <https://www.wri.org/publication/global-power-plant-database>; and Gallup World Poll (2019), *Gallup World Poll (database)*, www.gallup.com/services/170945/world-poll.aspx.

In all the 17 SDGs, at least 80% of OECD regions have not achieved the end values for 2030. While around 20% of regions have achieved the end value for reduced inequalities (Gini of 0.28 or lower and an inter-quintile ration below 4), not a single region in the OECD has achieved the end values suggested for SDG 5 on Gender equality (i.e. zero gender gap in both employment rate and part-time job incidence) and for SDG 13 on Climate action. Figure 2.7 also presents the average distance of the lagging regions – regions that have not achieved the end value – by goal. SDG 7 about clean energy displays high regional disparities in distances to the objective. While 18% of the regions have completed the goal’s end values of at least 82% of their electricity coming from renewable sources and 0% coming from coal or fossil fuels (therefore having a distance to travel equal to zero), the remaining 82% of regions average a distance close to 44% of the total way to travel.

Figure 2.7. Share of regions that have not achieved the end values for 2030, by SDG



Note: This graph uses 39 indicators distributed across the 17 SDGs. Number of regions between parentheses. Lagging regions are the regions that have not achieved the end values for 2030.
Sources: Same as Figure 2.6.

Similar to regions, the average distance of OECD cities to the completion of the suggested end values varies widely across the 17 SDGs. Figure 2.8 displays the average distance of cities – including the ones that have already met the proposed end values – towards the end values calculated for each of the 17 goals. For OECD cities, the best overall performance is in SDG 16 “Peace and institutions”, SDG 2 “Food security and agriculture” and SDG 4 “Quality of education”, where only 20% or less of the distance remains to be travelled to achieve the suggested end values. Conversely, SDGs 9 “Industry and innovation” and 17 “Partnership and enablers for SDGs” are the goals for which cities are the furthest away from the suggested end values – they are 70 points (out of 100) away from reaching the suggested outcomes.

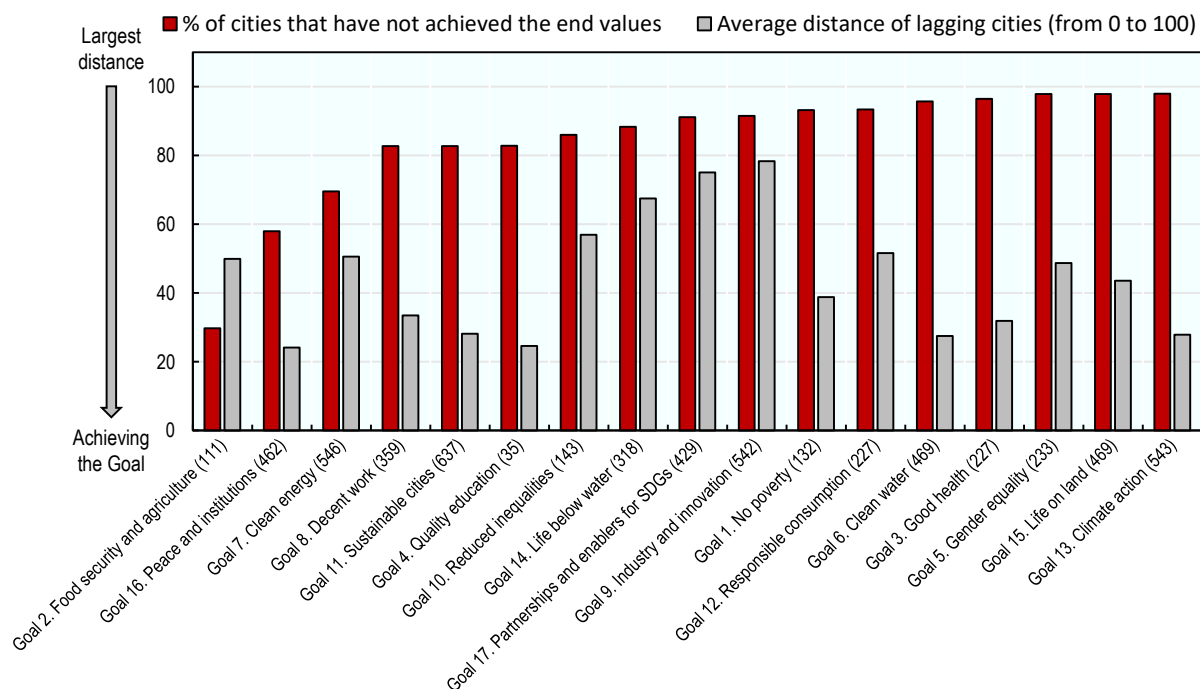
OECD cities' path towards reaching the SDGs is still challenging, as 70% of cities or more have not yet achieved the suggested end values for 2030 in 15 out of the 17 SDGs – the two goals for which this does not apply are SDG 2 about food security and SDG 16 about peace and institutions. The goals where most cities are lagging behind are those related to the environment (SDGs 13 “Climate action” and 15 “Life on land”) and to gender equality (SDG 5), where at least 95% of cities have not met the suggested end values (Figure 2.9). In contrast to Figure 2.8 that shows the performance of all cities, Figure 2.9 focuses exclusively on the distances of the cities that have not achieved the goals. This allows seeing that even if in SDG 2 (about food security and agriculture) only 30% of OECD cities have not reached the end value for 2030, these remaining cities are on average halfway from the goal, a distance that is relatively large. In 6 out of the 17 goals, the registered average distance of the lagging regions is greater than 50% of the total possible way.

Figure 2.8. Distance of OECD cities to the end values for 2030, by SDG



Note: This graph uses 25 indicators distributed across the 17 SDGs.

Sources: OECD (2019e), “Metropolitan areas”, <https://doi.org/10.1787/data-00531-en>; OECD (2019b), *OECD Environment Statistics (database)*, <https://doi.org/10.1787/env-data-en>; IUCN/UNEP-WCMC (2019), *The World Database on Protected Areas (WDPA)*, <http://www.protectedplanet.net>; Mistry (2019), “Historical global-gridded degree-days: A high-spatial-resolution database of CDD and HDD”, <https://doi.org/10.1002/gdj3.83>; Byers L. et al. (2019), “A Global Database of Power Plants”, <https://www.wri.org/publication/global-power-plant-database>; and Eurostat (2019), *Functional Urban Areas (database)*, <https://ec.europa.eu/eurostat/web/cities/data/database>.

Figure 2.9. Share of cities that have not achieved the end values for 2030, by SDG

Note: This graph uses 25 indicators distributed across the 17 SDGs. Number of regions between parentheses. Lagging regions are the regions that have not achieved the end values for 2030.
Sources: Same as Figure 2.8.

Although Figure 2.6-2.9 allow exploring the performance of OECD regions across the 17 SDGs (see Annex Tables of Chapter 3 for more details about the indicators and end values), they hide important within-countries inequalities in terms of regional performance towards the SDGs. Chapter 3 provides a more disaggregated analysis where regional and city distances to the goals' end values are presented by country, and within-country disparities are highlighted. The format of Chapter 3 is based on two-pagers for each of the 17 Sustainable Development Goals. It should be noted that the next chapter focuses on a selection of headline indicators (39 for regions and 25 for cities) to build indexes and look at OECD regional and city trends towards the SDGs. Nevertheless, a more in-depth assessment of the performance of a region or a city with respect to the SDGs would require the use of further and more specific indicators. For this reason, the OECD localised indicator framework for SDGs provides complementary indicators that go beyond the ones used for the indexes (135 in total) and recognises the potential need of other local indicators – not included in this framework – to expand the analysis and for policymaking towards the 2030 Agenda.

New sources, technologies and partnerships for subnational SDG indicators

The SDGs are pushing the statistical frontier at the global, national and subnational levels. By defining a broad range of ambitious global targets to achieve by 2030, the UN global framework has indirectly set new statistical challenges for international organisations, countries, regions and cities worldwide. The clearest evidence of this is the creation of the “Tier Classification for SDGs indicators” by the Inter-agency and Expert Group on

Sustainable Development Goal Indicators (IAEG-SDGs), which categorises the official UN indicators into different tiers based on their level of methodological development and the availability of data across the world.⁶ While Tiers I and II focus on indicators with established methodologies, Tier III gathers indicators without internationally established methodologies or consolidated standards. As new methodologies are developed and applied to measure Tier III indicators, these indicators can be reclassified into Tiers II or I – depending on their level of availability across countries. Since the adoption of the global indicator framework in 2017, the different statistical agencies and expert groups have made remarkable progress in creating new methodologies to monitor SDG Tier III indicators. For instance, while one of the initial tier classifications of official UN indicators (in December 2017) suggested that around 70 indicators (out of 232) were Tier III, and by December 2019 only 20 of these indicators were still classified as without a well-established methodology.

While creating robust methodologies is essential to measure the distance to the SDGs, resources and capacity are also needed to produce SDGs indicators in a timely manner and at the adequate spatial scale. For example, as December 2019, around 40% of the official UN indicators were classified as Tier II, meaning that even if the methodology and standards to measure these indicators have been consolidated, the data is not regularly produced by countries. What is more, even when indicators are classified as Tier I for their established methodology and availability for countries worldwide (which is the case only for 116 out of the 232 official UN indicators), this does not guarantee the possibility to disaggregate the indicators at the adequate subnational scale. This suggests that if disaggregation at the regional or city scale were also a criterion of “availability”, less than 50% of the UN indicators would be classified as Tier I.

The statistical gaps and challenges in measuring SDGs at the subnational level are more pronounced than at the country level. While the OECD approach to monitoring SDGs at the country level is currently able to cover 105 targets (out of 169) using 132 indicators (out of 232 official UN indicators) (OECD, 2019a), the OECD localised indicator framework for regions and cities presented in this report covers 65 targets (out of 105 deemed relevant for OECD subnational units) using 135 indicators. However, it is worth noting that while the OECD country-level framework uses official UN indicators, the localised framework for regions and cities has to rely mostly on proxy indicators (i.e. indicators that capture part of the essence of the SDGs targets, but do not necessarily coincide with the exact definition suggested by the UN). It is also important to highlight that while the OECD country-level framework uses all its indicators to measure the distance to the targets, the localised indicator framework uses only a subset of 64 indicators (43 unrepeated indicators) to produce indexes that measure the distance of regions and cities to the global goals. The localised framework uses a subset of indicators, instead of the whole set, in order to maximise the coverage of OECD regions and cities as data availability tends to be lower at the subnational level.

The SDGs are increasing the demand for more and better territorial indicators and geospatial information, where new sources of data and partnerships are key to filling the SDG data gaps. Despite the longstanding work of the OECD on territorial indicators, clearly reflected in the Regional and Metropolitan Databases, more efforts such as collecting data from OECD countries (e.g. through the WPTI) and modelling new indicators were required to fill many of the initial data gaps faced when building the first version of the localised indicator framework for SDGs. Nevertheless, bridging the remaining SDGs data gap will require further efforts, resources and capacity building, as

well as new sources of data, technologies and innovation, all of which could be enhanced through new collaborations, such as public-private and civil society partnerships.

New sources and technologies for SDG territorial indicators and analysis

Using the Global Human Settlement Layer (GHSL) to measure land consumption and “sustainable urbanisation”, the OECD has estimated the “Difference of land consumption rate to population growth rate” suggested in SDG 11 about sustainable urbanisation. Beyond the official UN indicator, the GHSL on built-up area and population allows for more profound analyses of the world urbanisation process. For example, DG-REGIO and the JRC are suggesting the complementary indicators to capture relevant elements of the urbanisation phenomenon, such as infill and expansion, and the marginal land consumption per new inhabitant.

Exploiting remote sensing and machine learning to capture the spatial component of “slums” is another example of how new sources and technologies are advancing the measurement of SDGs at the subnational level. Following the work of UN-Habitat (the custodian agency for SDG 11), the SDG framework captures slums at the level of the household – i.e. if the household suffers certain housing deprivations, it is classified as a “slum household”. This definition of slum does not capture one of the most relevant characteristics of slums, which is their spatial dimension. Clusters of deprived households might yield negative externalities, such as (more than proportionally) higher crime rates and health risks. The University of Twente (the Netherlands) is developing new methodologies to capture the spatial dimension of slums using remote sensing (from satellites) and machine learning.

To advance the monitoring of SDGs 14 and 15 on “Preserving life on land and below water”, the OECD is taking stock of the World Database on Protected Areas to estimate terrestrial and coastal protected areas at the subnational level. Across different initiatives to measure SDGs at the subnational level, SDGs 14 and 15 tend to appear as the goals with the largest data gaps. Using different geospatial techniques applied to the World Database on Protected Areas (IUCN/UNEP-WCMC, 2019), the OECD has initiated some work to model the share of protected terrestrial and coastal areas in regions and cities.

To fill the data gaps in SDG 7 for “Clean energy” and SDG 13 for “Climate action”, the OECD is taking advantage of global gridded data such as the Global Database of Power Plants and the Historical global-gridded degree-days Database. By applying standard geospatial analysis techniques to the Global Database of Power Plants (Byers et al., 2019), it is possible to estimate the percentage of total electricity production that comes from different sources of energy such as coal, fossil fuels, nuclear power and renewable sources. Similarly, by analysing the Historical global-gridded degree-days Database (Mistry, 2019), it is possible to calculate the evolution in cooling and heating degree days from 1970 to 2018. Since all these statistics are modelled using gridded data, these indicators can be estimated for both regions and cities, as well as for other relevant geographical scales.

New partnerships for SDG territorial indicators and analysis

Measuring SDG targets and indicators at the local level requires a joint effort between all stakeholders, including governments, universities, non-governmental organisations (NGOs), the private sector and the civil society. The measurement of homelessness is an enlightening example of a partnership between universities, NGOs and the civil society. While the SDG Target 11.1 aims to “By 2030, ensure access for all to adequate, safe and affordable housing [...]”, the UN indicator framework does not currently propose a

measure of homelessness. Homeless people are among the most vulnerable population groups – particularly in urban areas – and even if they might represent small shares of the overall population, ensuring basic standards of well-being for this population is crucial to achieving the SDGs. Currently, good quality and comparable statistics of homelessness are unavailable even at the country level. The University of Bocconi and Fondazione Rodolfo De Benedetti, together with NGOs and volunteers from the civil society are developing new methodologies and working on the field to measure homelessness in cities and urban areas.

Monitoring SDGs requires also agreeing on the definition of cities, rural and urban areas – as several SDGs indicators that are reported at those geographical levels can be highly scale-sensitive. In this respect, partnerships between experts are crucial to reach consensus and sound comparable definitions. The OECD – in collaboration with five international organisations, namely the European Commission (EC), the Food and Agriculture Organization (FAO), the International Labour Organization (ILO), UN-Habitat and the World Bank – is developing a new method to delineate cities, metropolitan, urban and rural areas for international statistical comparison purposes. This project is particularly relevant in the context of the Sustainable Development Goals, as many SDGs indicators are very sensitive to the definition of urban and rural areas (e.g. accessibility to transport and services). For this reason, using different national definitions of urban and rural areas undermines international comparability and thus the global monitoring of the SDGs. The method proposed by this group of organisations consists of two definitions, the degree of urbanisation (DEGURBA) and the functional urban areas (FUAs), which have a common definition of a city. The proposed definitions will be discussed for endorsement at the UN Statistical Commission in New York in 2020.

Notes

¹ For a detailed discussion of the pros and cons of both methods, see OECD, 2017a.

² OECD large regions (TL2) also include “administrative cities” that belong to the first administrative tier of subnational government, such as Mexico City and the City of Moscow.

³ Functional urban areas (FUAs) of more than 250 000 people.

⁴ The initial (1970-84) and final (2004-18) time reference points are estimated as multi-annual averages to avoid year-to-year volatility, in particular for small spatial units.

⁵ A coastal area corresponds to a region or city area within 50 km from the coastline. This method can include regions or cities without an actual coastline (in an administrative-boundary sense) but that are within 50 km from any coastline. The regions and cities with less than 15 km² of their area being coastal are excluded from the analysis.

⁶ Tier I: Indicator is conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50% of countries and of the population in every region where the indicator is relevant. Tier II: Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries. Tier III: No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.

References

- Brezzi, M. and M. Diaz Ramirez (2016), “Building subjective well-being indicators at the subnational level: A preliminary assessment in OECD regions”, *OECD Regional Development Working Papers*, No. 2016/03, OECD Publishing, Paris, <https://doi.org/10.1787/5jm2hhcjftvh-en>.
- Byers L., et al. (2019), “A Global Database of Power Plants”, Washington, DC: World Resources Institute, <https://www.wri.org/publication/global-power-plant-database>.
- Corbane, C., et al. (2018): GHS built-up grid, derived from Landsat, multitemporal (1975-1990-2000-2014), R2018A. European Commission, Joint Research Centre (JRC) doi: 10.2905/jrc-ghsl-10007 PID: <http://data.europa.eu/89h/jrc-ghsl-10007>.
- Diaz Ramirez, M., et al. (2018), “The integration of migrants in OECD regions: A first assessment”, *OECD Regional Development Working Papers*, 2018/01, OECD Publishing, Paris, <http://dx.doi.org/10.1787/fb089d9a-en>.
- Eurostat (2019), *Functional Urban Areas (database)*, <https://ec.europa.eu/eurostat/web/cities/data/database>.
- Gallup World Poll (2019), *Gallup World Poll (database)*, www.gallup.com/services/170945/world-poll.aspx.
- Global Energy Observatory, Google, KTH Royal Institute of Technology in Stockholm, Enipedia, World Resources Institute (2018), *Global Power Plant Database*, Published on Resource Watch and Google Earth Engine; <http://resourcewatch.org>, <https://earthengine.google.com>.
- Global Taskforce of Local and Regional Governments, UNDP and UN-Habitat (2016), *Roadmap for Localizing the SDGs: implementation and monitoring at subnational level*, http://docs.wixstatic.com/ugd/bfe783_49c2d8178d214bde9ec14154dd70e921.pdf.
- Hašič, I. and A. Mackie (2018), "Land Cover Change and Conversions: Methodology and Results for OECD and G20 Countries", *OECD Green Growth Papers*, No. 2018/04, OECD Publishing, Paris, <https://doi.org/10.1787/72a9e331-en>.
- IUCN/UNEP-WCMC (2019), *The World Database on Protected Areas (WDPA)*, <http://www.protectedplanet.net> (accessed on 7 August 2019).
- JRC (2020), *The European Handbook for the preparation of Voluntary Local Reviews on SDGs*.
- JRC (2019), *Urban Data Platform (database)*, <https://urban.jrc.ec.europa.eu/#/en> (accessed on 11 June 2019).
- Mackie, A., et al. (2017), "Indicators on Terrestrial and Marine Protected Areas: Methodology and Results for OECD and G20 countries", *OECD Environment Working Papers*, No. 126, OECD Publishing, Paris, <https://doi.org/10.1787/e0796071-en>.
- Mackie, A., I. Hašič and M. Cárdenas Rodríguez (2016), “Population Exposure to Fine Particles: Methodology and Results for OECD and G20 Countries”, *OECD Green Growth Papers*, No. 2016/02, OECD Publishing, Paris, <https://doi.org/10.1787/5jlsqs8g1t9r-en>.
- Mistry (2019), “Historical global-gridded degree-days: A high-spatial-resolution database of CDD and HDD”; <https://doi.org/10.1002/gdj3.83>, <http://www.energy-a.eu/historical-degree-days>.
- Natural Earth, Free vector and raster map data, <https://www.naturalearthdata.com>.
- OECD (2019a), *Measuring Distance to the SDG Targets 2019: An Assessment of Where OECD Countries Stand*, OECD Publishing, Paris, <https://doi.org/10.1787/a8caf3fa-en>.

- OECD (2019b), *OECD Environment Statistics (database)*, OECD, Paris, <https://doi.org/10.1787/env-data-en>.
- OECD (2019c), *OECD Regional Statistics (database)*, OECD, Paris, <http://dx.doi.org/10.1787/region-data-en>.
- OECD (2019d), “Decentralised development co-operation: Unlocking the potential of cities and regions”, *OECD Development Policy Papers*, No. 22, OECD Publishing, Paris, <https://doi.org/10.1787/e9703003-en>.
- OECD (2019e), “Metropolitan areas”, *OECD Regional Statistics (database)*, OECD, Paris, <https://doi.org/10.1787/data-00531-en>.
- OECD (2018a), *Divided Cities: Understanding Intra-urban Inequalities*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264300385-en>.
- OECD (2018b), *OECD Regions and Cities at a Glance 2018*, OECD Publishing, Paris, https://doi.org/10.1787/reg_cit_glance-2018-en.
- OECD (2018c), *Subnational governments in OECD countries: Key data (brochure)*, OECD, Paris, <https://www.oecd.org/cfe/regional-policy/subnational-finance.htm>.
- OECD (2017a), *Measuring Distance to the SDG Targets: An assessment of where OECD countries stand*.
- OECD (2017b), *The Governance of Land Use in OECD Countries: Policy Analysis and Recommendations*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264268609-en>.
- OECD (2016a), *Better Policies for 2030: An OECD Action Plan on the Sustainable Development Goals*, <https://www.oecd.org/dac/Better%20Policies%20for%202030.pdf>.
- OECD (2016b), *Making Cities Work for All: Data and Actions for Inclusive Growth*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264263260-en>.
- OECD (2015), *All on Board: Making Inclusive Growth Happen*, OECD Publishing, Paris, DOI: <http://dx.doi.org/10.1787/9789264218512-en>.
- OECD (2013), *OECD Guidelines on Measuring Subjective Well-being*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264191655-en>.
- OECD-ITF (2019), *Transport Statistics (database)*.
- OECD/UCLG (2019), *2019 Report of the World Observatory on Subnational Government Finance and Investment*, http://www.sng-wofi.org/reports/Key_Findings_2019.pdf.
- OECD/JRC (2008), *Handbook on Constructing Composite Indicators: Methodology and User Guide*, OECD, Paris, <https://www.oecd.org/sdd/42495745.pdf>.
- Piacentini, M. (2014), “Measuring Income Inequality and Poverty at the Regional Level in OECD Countries”, *OECD Statistics Working Papers*, No. 2014/03, OECD Publishing, Paris, <https://doi.org/10.1787/5jxzf5khtg9t-en>.
- SDSN (2019), *2019 SDG Index and Dashboards Report for European Cities*, https://s3.amazonaws.com/sustainabledevelopment.report/2019/2019_sdg_index_euro_cities.pdf.
- Schiavina, M., et al. (2019): GHS population grid multitemporal (1975, 1990, 2000, 2015) R2019A. European Commission, Joint Research Centre (JRC) DOI: 10.2905/42E8BE89-54FF-464E-BE7B-BF9E64DA5218 PID: <http://data.europa.eu/89h/0c6b9751-a71f-4062-830b-43c9f432370f>.

- UCLG (n.d.), *The Sustainable Development Goals: What Local Governments need to know*, https://www.uclg.org/sites/default/files/the_sdgs_what_localgov_need_to_know_0.pdf.
- UN (2017), *Resolution adopted by the General Assembly on 6 July 2017, 71/313. Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development*, <https://undocs.org/A/RES/71/313>.
- WCCD (2018), *WCCD City Data for the United Nations Sustainable Development Goals*, <https://www.dataforcities.org>.
- WHO (2006), *World Health Organization: Air Quality Guidelines for Particulate Matter, Ozone, Nitrogen Dioxide and Sulfur Dioxide, Global Update 2005*, World Health Organisation, www.who.int/phe/health_topics/outdoorair/outdoorair_aqg/en.

Annex 2.A. Complete list of SDG targets and indicators of the OECD localised framework

Annex Table 2.A.1. Complete list of SDG targets for OECD regions and cities

Goal	OECD subnational SDG targets	OECD subnational SDG targets with available indicators
SDG 1. No poverty	1.1, 1.2, 1.3, 1.4, 1.5, 1.b	1.1, 1.2, 1.3, 1.4, 1.b
SDG 2. Food security and agriculture	2.1, 2.2, 2.3, 2.4, 2.5	2.1, 2.2, 2.3, 2.4
SDG 3. Good health	3.2, 3.3, 3.4, 3.5, 3.6, 3.8, 3.c	3.2, 3.4, 3.6, 3.8, 3.c
SDG 4. Quality education	4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.a	4.1, 4.2, 4.3, 4.5, 4.6
SDG 5. Gender equality	5.1, 5.2, 5.4, 5.5, 5.6, 5.a, 5.b, 5.c	5.1, 5.2, 5.4, 5.5
SDG 6. Clean water	6.3, 6.4, 6.5, 6.6, 6.b	6.3, 6.6
SDG 7. Clean energy	7.1, 7.2, 7.3, 7.b	7.1, 7.2, 7.b
SDG 8. Decent work	8.1, 8.2, 8.3, 8.5, 8.6, 8.8, 8.9, 8.b	8.1, 8.2, 8.3, 8.5, 8.6, 8.8, 8.b
SDG 9. Industry and innovation	9.1, 9.2, 9.3, 9.4, 9.5, 9.c	9.1, 9.2, 9.5, 9.c
SDG 10. Reduced inequalities	10.1, 10.2, 10.3, 10.4, 10.7	10.1, 10.2, 10.3, 10.4
SDG 11. Sustainable cities	11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.a, 11.b	11.1, 11.2, 11.3, 11.6, 11.7
SDG 12. Responsible consumption	12.2, 12.3, 12.4, 12.5, 12.6, 12.8, 12.b	12.5, 12.8
SDG 13. Climate action	13.1, 13.2, 13.3, 13.b	13.1, 13.2
SDG 14. Life below water	14.1, 14.3, 14.4, 14.5	14.5
SDG 15. Life on land	15.1, 15.2, 15.3, 15.4, 15.5, 15.9	15.1, 15.3, 15.4, 15.5
SDG 16. Peace and institutions	16.1, 16.2, 16.3, 16.5, 16.6, 16.7, 16.b	16.1, 16.3, 16.5, 16.6, 16.7, 16.b
SDG 17. Partnerships and enablers for SDGs	17.1, 17.6, 17.8, 17.16, 17.17, 17.19	17.6, 17.8

Annex Table 2.A.2. Complete list of SDG indicators for OECD regions and cities

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
SDG 1. No poverty	Average disposable income per day of the first quintile (equivalised household, in USD PPP, constant prices of 2010)	TL2	OECD Regional Database	Positive	Best performers	TL2
	Percentage of population with a disposable income below the 60% of national median disposable income	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	Best performers	TL2 and FUA
	Decrease in poverty rates (national poverty line) due to transfers and taxes (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Rooms per person	TL2	OECD Regional Database	Positive	Best performers	No
	Percentage of population satisfied with efforts to deal with poverty	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
SDG 2. Food security and agriculture	Percentage of people with access to at least one food shop within 15 minutes' walking distance	FUA	OECD-ITF Database	Positive	Best performers	FUA

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
	Obesity rate of adults (%)	TL2	OECD Regional Database	Negative	Best performers	No
	Productivity (GVA per worker) in agriculture, forestry and fishing (ISIC rev4) (in constant 2010 USD PPP)	TL2	OECD Regional Database	Positive	Best performers	TL2
	Change in cropland (from 1992 to 2015, percentage points)	TL2	OECD Environment Database	Positive	0 percentage points	TL2
	Cropland as a percentage of total area in 2015	TL2	OECD Environment Database	Informative	Not applicable	No
SDG 3. Good health	Mortality rates for the 0 to 4 years old population	TL2	OECD Regional Database	Negative	Best performers	No
	Infant mortality rate (number of deaths of children 1-year-old or younger per 1 000 live births)	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Negative	Best performers	TL2 and FUA
	Mortality rate due to diseases of the circulatory or respiratory systems, for the under 65-year-old population	TL2 and FUA	Eurostat	Negative	Best performers	No
	Satisfaction with life as a whole (from 0 to 10)	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Life expectancy at birth	TL2	OECD Regional Database	Positive	Best performers	TL2
	Transport-related mortality rates (deaths per 100 000 people)	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Negative	Best performers	FUA
	Percentage of people satisfied with the availability or quality of healthcare	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Percentage of people with access to at least one hospital within 20 minutes' driving distance	FUA	OECD-ITF Database	Positive	Best performers	No
	Active physicians rate (active physicians per 1 000 people)	TL2	OECD Regional Database	Positive	Best performers	TL2
	Hospital beds rate (hospital beds per 10 000 people)	TL2	OECD Regional Database	Positive	Best performers	No
SDG 4. Quality education	Percentage of population from 15 to 19 years old enrolled in public or private institutions	TL2	OECD Regional Database	Positive	100%	No
	Percentage of early leavers from education and training, for the 18-24 year-old population	TL2	OECD Regional Database	Negative	Best performers	TL2
	Percentage of people with access to at least one school within 15 minutes of public transport	FUA	OECD-ITF Database	Positive	Best performers	No
	Percentage of people with access to at least one school within 20 minutes' walking distance	FUA	OECD-ITF Database	Positive	Best performers	FUA
	Percentage of population from 25 to 64 years old participating in education and training	TL2	OECD Regional Database	Positive	Best performers	No
	Percentage of population from 25 to 64 years old with at least tertiary education	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Positive	Best performers	TL2 and FUA

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
	Gender gap in tertiary education (percentage points)	TL2	OECD Regional Database	Negative	0 percentage points	No
	Gender gap in the rate of early leavers (percentage points)	TL2	OECD Regional Database	Negative	0 percentage points	No
	Gender gap in the rate of young population (from 18 to 24 years old) not in education, employment or training (NEET) (percentage points)	TL2	OECD Regional Database	Negative	0 percentage points	No
	Mean literacy score of the 16-65 year-old population (PIAAC – Survey of Adult Skills)	TL2	OECD PIAAC Database	Positive	Not applicable	No
SDG 5. Gender equality	Percentage of population that believe women are treated with respect and dignity in their country	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Percentage of women who experienced physical and sexual violence in the previous 12 months, for the female population aged 15 years or more	TL2	OECD Regional Database	Negative	0%	No
	Gender gap in employment rate (male-female, percentage points)	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Negative	0 percentage points	TL2 and FUA
	Gender gap in part-time employment incidence (female-male, percentage points)	TL2	OECD Regional Database	Negative	0 percentage points	TL2
	Percentage of women who are mayors	TL2 and FUA	OECD Regional and Metropolitan Databases	Positive	At least 50%	No
	Female research and development personnel as a percentage of total research and development employment	TL2	OECD Regional Database	Positive	At least 50%	No
SDG 6. Clean water	Percentage of population connected to at least secondary wastewater treatment	TL2	OECD Regional Database	Positive	Best performers	No
	Percentage of population satisfied with quality of water	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Change in water bodies (from 1992 to 2015, percentage points)	TL2 and FUA	OECD Environment Database	Positive	Best performers	TL2 and FUA
	Water bodies as percentage of total area in 2015	TL2 and FUA	OECD Environment Database	Informative	Not applicable	No
SDG 7. Clean energy	Total electricity production per capita (in kWh)	TL2	OECD Regional Database	Informative	Not applicable	No
	Final energy consumption per capita (in kg of oil equivalent)	TL2	OECD Regional Database	Negative	Best performers	No
	Percentage of total electricity production that comes from renewable sources	TL2 and FUA	OECD based on Global Power Plant Database	Positive	Best performers	TL2 and FUA
	Percentage of total electricity production that comes from coal	TL2 and FUA	OECD based on Global Power Plant Database	Negative	0%	TL2 and FUA

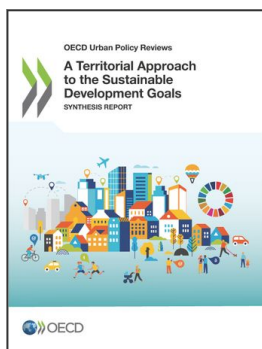
Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
	Percentage of total electricity production that comes from fossil fuels (natural gas and oil, excluding coal)	TL2 and FUA	OECD based on Global Power Plant Database	Negative	0%	TL2 and FUA
	Percentage of total electricity production that comes from nuclear power	TL2 and FUA	OECD based on Global Power Plant Database	Informative	Not applicable	No
	Percentage of residential houses which have been built after the year 1980	FUA	Urban Data Platform	Positive	Best performers	No
SDG 8. Decent work	Annual growth rate of real GDP per capita (%)	TL2 and FUA	OECD Regional and Metropolitan Databases	Positive	Best performers	No
	Annual growth rate of real GVA (GDP for FUA) per worker (%)	TL2 and FUA	OECD Regional and Metropolitan Databases	Positive	Best performers	TL2 and FUA
	Employment in knowledge-intensive services as a percentage of total employment	TL2	OECD Regional Database	Positive	Best performers	No
	Percentage of labour force with at least secondary education	TL2	OECD Regional Database	Positive	Best performers	No
	Firm creation rate (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Employment rate associated to newly created firms (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Three-year survival rate of firms (%)	TL2	OECD Regional Database	Positive	Not applicable	No
	Net firm creation rate (%) (firm birth rate minus firm death rate)	TL2	OECD Regional Database	Positive	Not applicable	No
	Unemployment rate (%)	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	Best performers	TL2 and FUA
	Gender gap in unemployment rate (percentage points)	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Negative	0 percentage points	No
	Long-term unemployment incidence (%)	TL2	OECD Regional Database	Negative	Best performers	No
	Part-time employment incidence (%)	TL2	OECD Regional Database	Negative	Best performers	No
	Employment rate (%)	TL2 and FUA	OECD Regional and Metropolitan Databases	Positive	Best performers	No
	Percentage of young population (from 18 to 24 years old) not in education, employment or training (NEET)	TL2	OECD Regional Database	Negative	Best performers	No
	Employment rate of the foreign-born (%)	TL2	OECD Regional Database	Positive	0 percentage points	No
	Unemployment rate of the foreign-born (%)	TL2	OECD Regional Database	Negative	0 percentage points	No
	Over-qualification rates for the foreign-born (%)	TL2	OECD Regional Database	Negative	0 percentage points	No
	Gender gap in employment rate for the foreign-born (percentage points)	TL2	OECD Regional Database	Negative	Best performers	No

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
	Percentage of foreign-born among the total population	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Informative	Not applicable	No
	Youth unemployment rate (%)	TL2	OECD Regional Database	Negative	Best performers	TL2
SDG 9. Industry and innovation	Percentage of population satisfied with roads and highways	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Percentage of population that lives in rural remote areas	TL2	OECD Regional Database	Informative	Not applicable	No
	Percentage of population that lives in the commuting zones	FUA	OECD Metropolitan Database	Informative	Not applicable	No
	Performance of public transport network, ratio between accessibility and proximity to people	FUA	OECD-ITF Database	Positive	Best performers	No
	Performance of car transport network, ratio between accessibility and proximity to people	FUA	OECD-ITF Database	Positive	Best performers	No
	Productivity (GVA per worker) in manufacture (ISIC rev4) (in constant 2010 USD PPP)	TL2	OECD Regional Database	Positive	Best performers	TL2
	GVA in manufacture (ISIC rev4) as a percentage of GDP	TL2	OECD Regional Database	Informative	Not applicable	No
	Manufacturing employment as a percentage of total employment	TL2	OECD Regional Database	Informative	Not applicable	No
	Employment in high-technology manufacturing as a percentage of total manufacturing employment	TL2	OECD Regional Database	Positive	Best performers	No
	Research and development expenditure as a proportion of GDP (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Research and development personnel as a share of total employment	TL2	OECD Regional Database	Positive	Best performers	No
	Patent applications (PCT) per 1 000 000 people	TL2 and FUA	OECD Regional and Metropolitan Databases	Positive	Best performers	TL2 and FUA
	Percentage of labour force with at least tertiary education	TL2	OECD Regional Database	Positive	Best performers	TL2
	Percentage of households connected to high-speed internet (30 megabytes per second)	TL2 and FUA	OECD Regional and Metropolitan Databases	0	Best performers	No
SDG 10. Reduced inequalities	Growth in disposable income per capita (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Average disposable income per equivalised household (in USD PPP, constant prices of 2010)	TL2 and FUA	OECD Regional and Metropolitan Databases	Positive	Best performers	No
	Gini index of disposable income (after taxes and transfers) (from 0 to 1)	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	Best performers	TL2 and FUA
	Ratio between average disposable income of top and bottom quintiles	TL2	OECD Regional Database	Negative	Best performers	TL2
	Median disposable income per equivalised household (in USD PPP, constant prices of 2010)	TL2	OECD Regional Database	Positive	Best performers	No

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
SDG 11. Sustainable cities	Percentage of population living below the 50% of regional median disposable income	TL2	OECD Regional Database	Negative	Best performers	No
	Percentage of population that believes their place of residence is a good place to live for racial and ethnic minorities	TL2	OECD based on Gallup World Poll (2019)	Positive	100%	No
	Decrease in poverty rates (regional poverty line) due to transfers and taxes (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Decrease in Gini index due to transfers and taxes (%)	TL2	OECD Regional Database	Positive	Best performers	No
	Percentage of households' expenses dedicated to housing costs	TL2	OECD Regional Database	Negative	Best performers	No
	Percentage of population satisfied with affordability of housing	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Performance of public transport network, ratio between accessibility and proximity to hospitals	FUA	OECD-ITF Database	Positive	Best performers	No
	Performance of car transport network, ratio between accessibility and proximity to hospitals	FUA	OECD-ITF Database	Positive	Best performers	No
	Percentage of population satisfied with the quality of public transportation systems	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Difference between built-up area growth rate and population growth rate (percentage points)	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	0 percentage points	TL2 and FUA
	Built-up area per capita (square metres per capita)	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	Best performers	No
	Exposure to PM2.5 in $\mu\text{g}/\text{m}^3$, population weighted (micrograms per cubic metre)	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	Less than $10 \mu\text{g}/\text{m}^3$	TL2 and FUA
	Percentage of population satisfied with quality of air	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Percentage of people exposed to more than $10 \mu\text{g}/\text{m}^3$ (micrograms per cubic metre) of PM2.5	TL2 and FUA	OECD Environment Database	Negative	0%	No
	Percentage of population with access to at least 1 hectare of green urban areas (parks) and forests within 15 minutes' walking distance	FUA	OECD-ITF Database	Positive	Best performers	No
Percentage of population with access to at least one recreational opportunity (theatres, museums, cinemas, stadiums or cultural attractions) within 15 minutes of cycling	FUA	OECD-ITF Database	Positive	Best performers	No	
SDG 12. Responsible consumption	Municipal waste rate (kilos per capita)	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Negative	Best performers	TL2
	Percentage of municipal waste that is recycled	TL2	OECD Regional Database	Positive	Best performers	No

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
	Number of motor road vehicles per 100 people	TL2 and FUA	OECD Regional Database (TL2) and Eurostat (FUA)	Negative	Best performers	TL2 and FUA
SDG 13. Climate action	Percentage of population satisfied with efforts to preserve the environment	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	TL2
	CO2 emissions per electricity production (in tons of CO2 equivalent per gigawatt hours)	TL2 and FUA	OECD based on Global Power Plant Database	Negative	Best performers	TL2 and FUA
	Change in cooling degree days needed to maintain an average building indoor temperature of 22 degree Celsius, from 1970-84 to 2004-18	TL2 and FUA	OECD based on Historical Global-Gridded Degree-Day Database	Negative	0 percentage points	TL2 and FUA
	Cooling degree-days needed to maintain an average building indoor temperature of 22 degree Celsius, 2004-18	TL2 and FUA	OECD based on Historical Global-Gridded Degree-Day Database	Informative	Not applicable	No
	Change in heating degree days needed to maintain an average building indoor temperature of 22 degree Celsius, from 1970-84 to 2004-18	TL2 and FUA	OECD based on Historical Global-Gridded Degree-Day Database	Negative	0 percentage points	No
	Heating degree days needed to maintain an average building indoor temperature of 22 degree Celsius, 2004-18	TL2 and FUA	OECD based on Historical Global-Gridded Degree-Day Database	Informative	Not applicable	No
SDG 14. Life below water	Protected coastal area as a percent of total coastal area	TL2 and FUA	OECD based on Natural Earth Database, and World Database on Protected Areas (WDPA)	Positive	Best performers	TL2 and FUA
	Coastal area as a percent of total area	TL2 and FUA	OECD based on Natural Earth Database	Informative	Not applicable	No
	Percentage of population that lives 50 km from the coast	TL2 and FUA	OECD based on Natural Earth Database, and GHSL Population Grid	Informative	Not applicable	No
SDG 15. Life on land	Change in tree cover (from 1992 to 2015, percentage points)	TL2 and FUA	OECD Environment Database	Positive	Best performers	TL2 and FUA
	Tree cover as a percent of total area in 2015	TL2 and FUA	OECD Environment Database	Informative	Not applicable	No
	Increase in artificial areas (from 1992 to 2015, percentage points)	TL2 and FUA	OECD Environment Database	Informative	Not applicable	No
	Artificial areas as a percent of total area in 2015	TL2 and FUA	OECD Environment Database	Informative	Not applicable	No
	Mountainous area as a percent of total area	TL2	OECD based on Mountains and Tree Cover in Mountain Regions Database	Informative	Not applicable	No

Goal	Indicator description	Subnational scale	Source	Desired direction	End value	Included in index
	Percentage of population that lives in mountainous area	TL2	OECD based on Mountains and Tree Cover in Mountain Regions Database, and GHSL Population Grid	Informative	Not applicable	No
	Terrestrial protected areas as a percent of total area	TL2 and FUA	OECD based on World Database on Protected Areas (WDPA)	Positive	Best performers	TL2 and FUA
SDG 16. Peace and institutions	Homicides per 100 000 persons	TL2 and FUA	OECD Regional and Metropolitan Databases	Negative	Best performers	TL2 and FUA
	Percentage of population that have been assaulted or mugged in the previous 12 months	TL2	OECD based on Gallup World Poll (2019)	Negative	Best performers	No
	Percentage of population that feel safe walking alone at night around the area they live	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	TL2
	Confidence in judicial system and courts	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	No
	Percentage of population that believes corruption is spread throughout the government in the country	TL2	OECD based on Gallup World Poll (2019)	Negative	Best performers	No
	Percentage of population that have confidence in the national government	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	TL2
	Percentage of population that have confidence in the local police force	TL2	OECD based on Gallup World Poll (2019)	Positive	Best performers	TL2
	Voter turnout	TL2	OECD Regional Database	Positive	Best performers	No
	Percentage of population that believes their place of residence is a good place to live for migrants	TL2	OECD based on Gallup World Poll (2019)	Positive	100%	No
	Percentage of population that believes their place of residence is a good place to live for gay or lesbian people	TL2	OECD based on Gallup World Poll (2019)	Positive	100%	No
SDG 17. Partnerships and enablers for SDGs	Share of PCT co-patent applications that are done with foreign regions (in % of co-patent applications)	TL2	OECD Regional Database	Positive	Best performers	TL2
	Percentage of households with broadband internet access	TL2	OECD Regional Database	Positive	Best performers	TL2
	Percentage of houses and buildings connected to optical fibre	FUA	OECD Metropolitan Database	Positive	Best performers	FUA
	Research and development expenditure by the government sector as a proportion of GDP (%)	TL2	OECD Regional Database	Positive	Best performers	No



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