

SDG Indicators for Municipalities

Indicators for Mapping Sustainable Development Goals
of the United Nations in German Municipalities
(Summary)



A joint project by:

Bertelsmann Stiftung · German Federal Institute for Research on Building,
Urban Affairs and Spatial Development · German County Association ·
Association of German Cities · German Association of Towns and
Municipalities · German Institute of Urban Affairs · Engagement Global ·
Council of European Municipalities and Regions / German Section

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Translation funded by Platforma

Publisher:

Bertelsmann Stiftung
German Federal Institute for Research on Building, Urban Affairs and Spatial Development
German County Association
Association of German Cities
German Association of Towns and Municipalities
German Institute of Urban Affairs
Engagement Global (Service Agency Communities in One World)
Council of European Municipalities and Regions / German Section

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Cover:

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Image credits:

mauritius images/Westend61/Andrew Brookes; United Nations/globalgoals.org

Typesetting:

OH Design + Medienproduktion, Gütersloh

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Publication date:

November 2020 (2nd, completely revised edition)

Citation form:

[Name, first name of author: title of text contribution], in: Bertelsmann Stiftung, German Federal Institute for Research on Building, Urban Affairs and Spatial Development, German County Association, Association of German Cities, German Association of Towns and Municipalities, German Institute of Urban Affairs, Engagement Global (Service Agency Communities in One World), Council of European Municipalities and Regions / German Section (publ.). SDG Indicators for Municipalities – Indicators for mapping United Nations Sustainable Development Goals in German municipalities. 2nd, completely revised edition, Gütersloh 2020.

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Foreword by the municipal umbrella organisations

Sustainability is not simply a buzzword or a platitude – it can be implemented and shaped according to measurable criteria. It requires constant advance thought and, above all, action. Global and national sustainability goals are and always have been the benchmark for municipalities. The “resilient post-Corona municipality” which is now required also illustrates the scope and dimensions of sustainability. Municipalities must be able to withstand and overcome economic, ecological or societal challenges and crises. When it comes to achieving the sustainability goals set out in the United Nations’ the 2030 Agenda (known as Sustainable Development Goals, or SDGs for short), the municipalities – as human settlements – play a central role.

The working group “SDG Indicators for Municipalities” accepted the task of developing a catalogue of indicators for municipalities which enables them to permanently monitor the status of all 17 sustainability goals at local level. As a result, municipalities can now contribute significantly to a sustainability-oriented plan of action.

The completely revised catalogue presented with this brochure contains a manageable number of indicators that were developed and tested with the collaboration of experts who have practical experience with municipalities. The Indicator Catalogue is a modular system, so every municipality is free to choose which and how many indicators it wants to use as a basis to achieve its sustainability goals.

The decision on “control relevance” is therefore always made locally. While the focus in many municipalities used to be on climate goals (SDG 13), health-related measures to combat the coronavirus pandemic (SDG 3) have now become a pressing issue while tomorrow, goals such as decent employment and economic growth (SDG 8) could become the pressing issue.

The SDG Portal (www.sdg-portal.de) currently provides data on 56 indicators for a wide variety of sustainability goals, which are easily accessible from central sources for the county-free cities, counties (Landkreise) and, at least partly, for county towns and municipalities. This brochure also contains suggestions for indicators that meet the quality requirements but are not available nationwide.

The portal provides a quick overview of the available data for all towns and municipalities with at least 5,000 inhabitants and all counties in Germany. It also shows short- and medium-term developments in the municipalities. The statistics are supplemented by good practical examples and further information about sustainability action taken by municipalities. The German SDG Portal for Municipalities has also attracted a lot of international attention. After it won the United Nations’ UN SDG Action Award (placing in the top 3) in 2019, Italian municipalities adopted the method that had been successfully tested in Germany. Other countries have also expressed interest in setting up an SDG Portal for municipalities.

At this point, we would like to express our heartfelt thanks to everyone involved in developing, testing and revising the SDG Indicators. We thank the pilot municipalities, the members of the working group, but above all the German Institute of Urban Affairs, for its tireless, reliable work on the development of the Indicator Catalogue on behalf of Bertelsmann Stiftung.

We hope that municipalities will continue to work intensively with SDG indicators at local level, so that the municipalities’ contribution for a report on the United Nations sustainability goals at national, European and international level will be clearly seen. Your suggestions and appraisals are welcome at any time!

Cologne and Berlin, November 2020

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The SDG Indicators and the SDG Portal for Municipalities

Henrik Riedel / Oliver Haubner / Marc Wolinda, Bertelsmann Stiftung

1.1 Summary of key points

Even if it is not always uppermost in our minds, there has never been a better time than the present for starting a sustainability drive in Germany. We have a German sustainability strategy at federal level, sustainability strategies in most Federal States, and an increasing number of municipalities are beginning to make a contribution to sustainable development and to implement the 2030 Agenda with the United Nations' Sustainable Development Goals, or SDGs. The coronavirus crisis has changed nothing, even if it has sometimes replaced the issue of sustainability in public debate. On the contrary: it is the ideal opportunity to reignite the sustainability discussion against the background of the pandemic. Many municipalities are already doing so – new concepts for education, mobility or health are just some of many examples.

Sustainability begins in the municipalities, which are the basis for the implementation of the 17 SDGs and their 169 subgoals. The municipalities – where people live and work – are the places most likely to feel the benefits of sustainability. Towns, counties and local authorities will also eventually have to decide whether they can implement sustainable development, so the way in which municipalities approach the issue of sustainability and the implementation of the SDGs is vitally important. Consequently, the UN's High-Level Political Forum (HLPF) on Sustainable Development declared: "The battle to achieve for sustainable development will be won or lost in the towns."

There is hardly a municipality currently dealing with the issue of sustainability that is doing so without considering the SDGs and assessing how they can be influenced at local level. Of course, every individual municipality could do this on its own and for its own purposes. For example, every municipality could create its own indicators to assess and monitor the current status and any advances towards achieving the SDGs. However, it seems to be more efficient and effective to have a common basis for monitoring and documenting which indicators are suitable and appropriate for SDG monitoring in German municipalities. This is precisely the route pursued by the working group "SDG Indicators for Municipalities", which was formed from representatives of Bertelsmann Stiftung, the German Federal Institute for Research on Building,

Urban Affairs and Spatial Development, the German County Association, the Association of German Cities, the German Association of Towns and Municipalities, the German Institute of Urban Affairs, Engagement Global with its Service Agency Communities in One World, and the German Section of the Council of European Municipalities and Regions.

This publication is the result of almost four years of joint project work. In spring 2017 – shortly after the German Sustainability Strategy with its systematic orientation towards the SDGs had been published – the development of SDG Indicators for Municipalities began. One year later, in spring 2018, the first Indicator Catalogue was published, and the first data were entered in the Bertelsmann Stiftung's "Wegweiser Kommune" portal. The SDG Portal for Municipalities went live at the end of 2018. The SDG indicators were tested in selected municipalities directly after their first publication. Evaluation of initial experiences with the use of the indicators took place at the beginning of 2019. The results of this evaluation formed the basis on which core topics for practice-oriented further development of the SDG indicators were defined. The revised status of the Indicator Catalogue is presented in this, the 2nd completely revised, edition.

For the most part, existing indicator catalogues and definitions were used for the collection, evaluation and selection of the SDG Indicators. The proposed indicators are primarily of good quality and contain data that are universally available. Universal availability means that, at county and county-free city level and – wherever possible – also at county-affiliated town and municipality level, the data can be obtained from central sources.

The reason is: the individual SDGs or subgoals and intermediate goals which are generally relevant for German municipalities should be depicted by indicators that are as meaningful as possible.

If individual SDGs or relevant municipal task areas are not comprehensively covered by universally available data, we accept this as a commission to be included in our future work. This applies, for example, to SDG 13 "Climate action" and SDG 17 "Partnerships for the Goals". It is our firm

intention to pay particular attention to such “work in progress” areas as we continue to develop the SDG Indicators.

In any case, it must be emphasised that the existing catalogue of SDG Indicators consists of suggestions or recommendations only. Every municipality can, should and must decide for itself which indicators are control-relevant and most appropriate for depicting its own respective contribution to the SDGs, based on specific local framework conditions and priorities. Our modular “toolbox” allows indicators to be omitted, modified or supplemented at any time. Our indicator info profiles can also help when getting started. This publication contains the consolidated, tested, evaluated and evolved status of the indicators used to depict the SDGs in German municipalities. The current working status of the SDG indicators needs to be constantly updated and adjusted to new theoretical and practical knowledge, and especially an improved provision of relevant, reliable data from central statistical, scientific or other sources.

Our thanks go to all the municipalities and experts that contributed to this publication, and we hope that the Indicator Catalogue will prove to be a tool that plays a practical part in implementing the SDGs in German municipalities – and thereby contribute to sustainable development as a whole.

1.2 Overview of the SDG Indicators

The overview on the following double page contains selected SDG indicators that are of suitably high quality and universally available (Type I indicators). (Highly) suitable SDG indicators that are of sufficiently high quality but – at least in part – not yet universally available (Type II indicators) have also been selected. A comprehensive overview and “info profiles” of Type I and Type II indicators can be found in Chapter 4.

Since no Type I indicators for SDG 13 “Climate action” and SDG 17 “Partnerships for the Goals” have yet been identified, particular attention must be paid to the creation of content-related and technical conditions for the collection, processing and provision of data on Type II indicators in the course of ongoing project work.

1.3 Overview of the SDG Portal

The SDG Portal (www.sdg-portal.de) offers all towns and municipalities with more than 5,000 inhabitants and all German counties a rapid overview of Type I SDG indicators (see Chapter 1.2) and the available data. Current data are displayed along with short- and medium-term time comparisons. Comparisons with other municipalities and average values are also possible. The various comparisons also give those responsible for sustainability in the municipalities, administrative and political decision-makers and other local stakeholders the opportunity to take initial stock of SDG status, identify where action is required and take the necessary steps.

However, the Portal not only shows local stakeholders where action is needed, but also provides ideas and suggestions for possible effective measures they could introduce to implement the global sustainability goals set out in the SDGs.

Growing interest from outside of Germany proves what a useful service the SDG Portal provides. After the Portal was honoured with a top-3 placing in the “Visualizer” category of the 2019 United Nations SDG Action Awards, we worked with our Italian partners (L’Associazione italiana per il Consiglio dei Comuni e delle Regioni d’Europa (AICCCE) and Fondazione Eni Enrico Mattei (FEEM)) to develop and launch an SDG Portal for the Italian provinces. Municipalities and associations from other states have also shown interest in developing a set of SDG indicators and providing access to them via a portal.

Overview of the SDG Indicators

Short version

No. of SDG	Description of SDG	Name of SDG-Indicator	Definition of SDG-Indicator	Calculation of SDG-Indicator	Statement
1	End poverty in all its forms everywhere	SGB II/SGB XII quote	Share of persons entitled to benefits under SGB II or SGB XII (under 65 years) in the population (under 65 years)	$(\text{number of social benefit recipients according to SGB II and SGB XII}) / (\text{number of inhabitants}) * 100$	A proportion of x % of the population is entitled to social benefits according to SGB II and SGB XII.
		Poverty – Child poverty	Share of under 15-year-olds affected by poverty	$(\text{number of social benefit recipients according to SGB II under the age of 15}) + (\text{number of persons not eligible for social benefits in communities of need under the age of 15}) / (\text{number of inhabitants under the age of 15}) * 100$	A proportion of x % of the population under 15 years of age receives social benefits according to SGB II – either themselves or indirectly through the community of need.
		Poverty – Youth poverty	Share of 15-17-year-olds affected by poverty	$(\text{number of social benefit recipients aged 15-17 years}) + (\text{number of persons not eligible for social benefits in communities of need aged 15-17 years}) / (\text{number of inhabitants aged 15-17 years}) * 100$	A proportion of x % of young people aged 15 to 17 receives social benefits according to SGB II – either themselves or indirectly through the community of need.
		Poverty – Elderly poverty	Share of over 65-year-olds affected by poverty	$(\text{number of social benefit recipients over the age of 65 years}) / (\text{number of inhabitants over the age of 65 years}) * 100$	A proportion of x % of the population aged 65 and over receives social benefits according to SGB XII.
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Nitrogen surplus	Nitrogen surplus of agricultural land	$(\text{nitrogen surplus}) / (\text{land area used for agriculture})$	The nitrogen surplus is x kg per hectare of agricultural land.
3	Ensure healthy lives and promote well-being for all at all ages	Premature mortality - Women	Number of deaths among women under 70 years of age per 1,000 persons	$(\text{number of deaths among women under 70 years of age}) / (\text{number of inhabitants}) * 1,000$	Out of 1,000 women under the age of 70, x died prematurely.
		Premature mortality - Men	Number of male deaths under 70 years of age per 1,000 persons	$(\text{number of deaths among men under 70 years of age}) / (\text{number of inhabitants}) * 1,000$	Out of 1,000 men under the age of 70, x died prematurely.
		Basic supply close to home - Family doctor	Population-weighted linear distance to the nearest general practitioner (GP)	Population-weighted linear distance to the nearest GP	The population-weighted linear distance to the nearest general practitioner is x metres.
		Hospital care	Number of hospital beds per 100,000 inhabitants	$(\text{number of hospital beds}) / (\text{number of inhabitants}) * 100,000$	There are x hospital beds per 100,000 inhabitants.
		Basic supply close to home - Pharmacy	Population-weighted linear distance to the nearest pharmacy	Population-weighted linear distance to the nearest pharmacy	The population-weighted linear distance to the nearest pharmacy is x metres.
		Staff in nursing homes	Staff in nursing homes per 10,000 inpatients in need of care	$(\text{staff in nursing homes}) / (\text{number of persons in need of full and partial inpatient care}) * 1,000$	There are x persons (full-time positions) working in nursing homes per 10,000 full- and part-time inpatients in need of care.
		Staff in nursing services	Staff in outpatient care services per person in need of care	$(\text{staff in outpatient care services}) / ((\text{number of outpatients in need of care}) + (\text{number of care allowance recipients}))$	In outpatient care services, x employees (full-time positions) are employed per person in need of care.
		Nursing home places	Number of available inpatient places in nursing homes per 1,000 inhabitants aged min. 65 years	$(\text{number of available full and partial inpatient places in nursing homes}) / (\text{number of inhabitants aged 65 and over}) * 1,000$	There are x inpatient places per 1,000 inhabitants aged 65 and over in nursing homes.
		Air pollution exposure	Immission of particulate matter PM ₁₀	Annual mean values of the air pollutant particulate matter PM ₁₀	The annual mean concentration of PM ₁₀ in the air is x µg / m ³ .

No. of SDG	Description of SDG	Name of SDG-Indicator	Definition of SDG-Indicator	Calculation of SDG-Indicator	Statement
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Basic supply close to home – Primary school	Population-weighted linear distance to the nearest primary school	Population-weighted linear distance to the nearest primary school	The population-weighted linear distance to the nearest primary school is x metres.
		School dropout rate	Proportion of school leavers without lower secondary school leaving certificate among all school leavers	(number of school leavers without intermediate school leaving certificate) / (number of school leavers) * 100	A proportion of x % of school leavers do not achieve an intermediate school leaving certificate.
		Child care (under 3 years olds)	Proportion of children under 3 years of age who are cared for in day-care facilities	(number of children under 3 years of age in daycare facilities) / (number of children under 3 years of age) * 100	A proportion of x % of children under the age of 3 years are cared for in day care facilities.
		Integrative child care centres	Proportion of inclusive day-care facilities out of all day-care facilities in the municipality	(number of integrative day care centres) / (number of day care centres) * 100	A proportion of x % of the day care centres is inclusive.
5	Achieve gender equality and empower all women and girls	Ratio of employment rates of women to men	Quote of female employment rate to male employment rate	((number of employed women at place of residence 15-64 years of age) / (total number of women 15-64 years of age)) / ((number of employed men at place of residence 15-64 years of age) / (total number of men 15-64 years of age)) * 100	The ratio of the female employment quote to the male employment quote is x %.
		Wage gap between women and men	Median income of female employees in relation to the median income of male employees	(median income of employed women (full-time) at work) / (median income of employed men (full-time) at work) * 100	The median income of female workers is x % of the median income of male workers.
		Proportion of women in city council, municipal council or county council	Proportion of mandates in the city council, municipal council or county council held by women	(number of women with mandates in the city, municipal or county council) / (number of mandates in the city, municipal or county council) * 100	A share of x % of the mandates in the city, municipal or county council is held by women.
6	Ensure availability and sustainable management of water and sanitation for all	Wastewater treatment	Proportion of wastewater treated by denitrification and phosphorus elimination	(quantity of wastewater treated with denitrification and phosphorus elimination) / (total quantity of wastewater) * 100	A proportion of x % of the wastewater is treated using denitrification and phosphorus elimination techniques.
7	Ensure access to affordable, reliable, sustainable and modern energy for all	Wind energy	Capacity of installed wind energy per inhabitant	(installed wind energy capacity) / (number of inhabitants)	Wind energy generates x watts of electricity per inhabitant.
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Gross domestic product	Gross domestic product per inhabitant	(gross domestic product) / (number of inhabitants)	The gross domestic product per inhabitant is x euros.
		Long-term unemployment rate	Proportion of long-term unemployed inhabitants in the labour force	(number of unemployed with duration of unemployment > 1 year) / (number of unemployed + employed inhabitants) * 100	A proportion of x % of the labour force is unemployed for more than 1 year.
		Employment rate – 15-64 year olds	Proportion of 15- to 64-year-olds in employment subject to social insurance at place of residence out of all 15- to 64-year-old inhabitants	(number of employees subject to social insurance at place of residence aged 15 to 64) / (number of inhabitants aged 15 to 64) * 100	The proportion of persons registered as employed subject to social insurance contributions (SvB) aged 15-64 years in the population of the same age is x %.
		Employment rate – 55-64 year olds	Proportion of 55- to 64-year-olds in employment subject to social insurance at place of residence in all 55- to 64-year-old inhabitants	(number of employees subject to social insurance at the place of residence aged 55 to 64) / (number of inhabitants aged 55 to 64) * 100	The proportion of persons registered as employed subject to social insurance contributions (SvB) aged 55-64 years in the population of the same age is x %.
		Employees receiving supplementary benefits ("Aufstocker")	Proportion of ALG-II recipients in employment among all recipients of benefits who are capable of working	(number of ALG-II recipients in employment) / (number of ALG-II recipients) * 100	A proportion of x % of the social benefit recipients according to ALG-II is gainfully employed in addition to receiving ALG-II.
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Business start-ups	Number of newly established businesses per 1,000 inhabitants	(number of new business formations) / (number of inhabitants) * 1000	There are x new business start-ups per 1,000 inhabitants.
		Highly skilled workers	Proportion of employees subject to social security contributions with an academic vocational qualification among all employees subject to social security contributions at the place of work	number of employees with an academic qualification in the workplace) / (total number of employees in the workplace) * 100	A proportion of x % of employees subject to social insurance contributions have an academic qualification.
		Broadband internet access - Private households	Proportion of private households that can use a minimum bandwidth of 50 Mbit/s	(number of households with broadband coverage (≥ 50 Mbit/s)) / (number of households) * 100	The proportion of households that can use a bandwidth of at least 50 Mbit/s is x %.

No. of SDG	Description of SDG	Name of SDG-Indicator	Definition of SDG-Indicator	Calculation of SDG-Indicator	Statement
10	Reduce inequality within and among countries	Employment rate – Foreigners	Ratio of employment rate of foreigners to employment rate in the total population	$((\text{number of foreign employees subject to social insurance in the place of residence aged 15 to 64}) / (\text{number of foreigners aged 15 to 64})) / ((\text{number of employees subject to social insurance in the place of residence aged 15 to 64}) / (\text{number of inhabitants aged 15 to 64})) * 100$	The ratio of the employment rate of foreign nationals to the employment rate in the total population is x %.
		School dropout rate – Foreigners	Ratio of the school dropout rate of foreigners to the school dropout rate in the total population	$((\text{number of foreign school leavers without lower secondary school leaving certificate}) / (\text{number of foreign school leavers in total})) / ((\text{number of school leavers without lower secondary school leaving certificate in total}) / (\text{number of school leavers in total})) * 100$	The ratio of the school dropout rate of foreign nationals to the school dropout rate of the total population is x %.
		Income distribution - Gini coefficient	Distribution of equalised disposable income per person using Gini coefficient	Gini coefficient income after social transfer	The Gini coefficient after social transfer is x.
		Projects with migrant organisations	Projects carried out by the municipality together with migrant organisations in relation to the number of inhabitants	$(\text{number of projects with migrant organisations (registered associations)}) / (\text{number of inhabitants}) * 10,000$	The municipality carries out x projects per 10,000 inhabitants with migrant organisations.
		Proportion of migrants in the city council, municipal council or district council	Proportion of mandates in city councils, municipal councils and county councils held by people with a migrant background	$(\text{number of people with a migration background with mandates in the city council, municipal council or county council}) / (\text{number of mandates in the city, municipal or county council}) * 100$	The proportion of people with a migration background with mandates in the city, municipal or county council is x %.
		Naturalizations	Number of naturalized persons in the respective year in relation to the number of all foreign residents	$(\text{number of naturalizations in the respective year}) / (\text{number of foreign inhabitants in the previous year}) * 100$	A proportion of x % of the foreign population has obtained German citizenship.
11	Make cities and human settlements inclusive, safe, resilient and sustainable	Rent prices	Average net basic rent per square metre	Average net basic rent per square meter	The average net basic rent is x Euros per square metre.
		Living space	Available living space per person	$(\text{living space}) / (\text{number of inhabitants})$	On average, x square metres of living space are available per person.
		Basic supply close to home – Supermarket	Population-weighted linear distance to the nearest supermarket or discount store	Population-weighted linear distance to the nearest supermarket or discount store	The population-weighted linear distance to the nearest supermarket or discount store is x metres.
		Car density	Number of cars per 1,000 inhabitants	$(\text{number of passenger cars}) / (\text{number of inhabitants}) * 1,000$	The car density is x cars per 1,000 inhabitants.
		Road traffic casualties	Number of persons injured or killed in traffic accidents per 1,000 inhabitants	$(\text{number of persons injured or killed in road accidents}) / (\text{number of inhabitants}) * 1,000$	A number of x people is injured or killed in road accidents per 1,000 inhabitants.
		Land use	Share of settlement and transport area in total area	$(\text{settlement and transport area}) / (\text{total area}) * 100$	The share of settlement and transport area in the total area is x %.
		Land use intensity	Settlement and transport area per inhabitant	$(\text{settlement and transport area}) / (\text{number of inhabitants})$	In the municipality, x square metres of settlement and transport area are available per inhabitant.
		Local recreation areas	Local recreation area per 1,000 inhabitants	$(\text{recreational area}) / (\text{number of inhabitants})$	There are x hectares of recreational space per 1,000 inhabitants.
12	Ensure sustainable consumption and production patterns	Completed residential buildings with renewable heating energy	Proportion of completed residential buildings with renewable heating energy	$(\text{number of newly constructed residential buildings with renewable heating energy}) / (\text{number of newly constructed residential buildings}) * 100$	The share of completed residential buildings with renewable heating energy in newly constructed residential buildings is x %.
		Fairtrade Town	Number of times the municipality has been awarded Fairtrade Town status	Status of the municipality's designation as a Fairtrade Town (no application submitted: 0; designation received for the first to xth time: 1 to x)	The municipality has already received the Fairtrade Town award x times.
		Fairtrade Schools	Proportion of awarded Fairtrade Schools in relation to all schools	$(\text{number of schools awarded as Fairtrade School}) / (\text{number of schools}) * 100$	A proportion of x % of schools in the municipality is awarded as "Fairtrade School".
		Drinking water consumption – Private households	Drinking water consumption (households and small businesses) per inhabitant per day	$(\text{annual drinking water consumption (households and small businesses)}) / ((\text{number of inhabitants}) * (\text{number of days per year}))$	On average, x litres of water were consumed per inhabitant per day.
13	Take urgent action to combat climate change and its impacts	Waste	Amount of waste disposed of per inhabitant	$(\text{amount of disposed waste}) / (\text{number of inhabitants})$	The amount of waste disposed of is x tonnes per inhabitant.

No. of SDG	Description of SDG	Name of SDG-Indicator	Definition of SDG-Indicator	Calculation of SDG-Indicator	Statement
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Watercourse quality	Proportion of watercourse length with the ecological status ratings "very good" and "good" out of the total watercourse length	number of watercourses with an ecological status assessment of "very good" or "good" / (total number of watercourses) * 100	The status of x km of watercourse is assessed at least "good".
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Nature conservation areas	Share of nature conservation areas with high protection status (Natura 2000 areas, nature reserves and national parks) in the total forest area	(area of Natura 2000 sites, landscape and nature reserves, nature parks and national parks) / (total area) * 100	Natura 2000 areas, nature reserves or national parks are designated on x % of the total area of the municipality.
		Landscape quality	Total of human interventions in ecosystems (hemeroby index)	Area-weighted mean value of the hemeroby levels of all land uses of the respective reference area	The degree of human interventions in ecosystems is assessed x according to the hemeroby index.
		Unfragmented habitats	Share of unfragmented open space areas > 50 km ² , which are not dissected by routes of the interurban transport network, in the total area	(Open space areas (outside localities) > 50 km ² , which are not dissected by routes of the interurban transport network) / (area) * 100	A share of x % of the open space areas is undissected by routes of the interurban transport network.
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Crime	Number of registered criminal offenses per 1,000 inhabitants	(number of criminal offenses registered by the police) / (number of inhabitants) * 1,000	For every 1,000 inhabitants, x criminal offenses are registered by the police.
		Financial resources balance	Budget surplus or deficit per inhabitant	((primary balance) + (financial balance) + (investment balance)) / (number of inhabitants)	The municipality was able to complete all its duties with a surplus / deficit of x Euros per inhabitant.
		Tax revenues	Tax revenue per inhabitant	(tax revenue) / (number of inhabitants)	The tax revenues of the municipality averaged over the last 4 years amount to x Euros per inhabitant.
		Liquidity loans	Liquidity/cash loans in the core budget per inhabitant	(liquidity loans) / (number of inhabitants)	The municipality has liquidity loans in the amount of x Euros per inhabitant in its core budget.
17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development				

Type I indicators are of sufficiently high quality and universally available. Supplementary Type II indicators of (very)

high quality but with (partly and/or currently) insufficient universal availability were also defined.

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Key points of the project “SDG Indicators for Municipalities”

Henrik Riedel / Oliver Haubner / Marc Wolinda, Bertelsmann Stiftung

2.1 Starting point

In 2015, the United Nations adopted 17 Sustainable Development Goals, or SDGs, as part of its 2030 Agenda. Consequently, the German Government decided in 2017 to continue the development of the country’s sustainability strategy (previously known as the “National Sustainability Strategy”), which was systematically aligned with the SDGs. Furthermore, a majority of Germany’s federal states adopted or continued the development of their own sustainability strategies, which are at least partly oriented towards the SDGs. A growing number of German municipalities are now also working on sustainability concepts intended as a contribution towards implementation of the global sustainability goals.

The United Nations have published suggestions for indicators to map the status of sustainable development efforts with regard to the SDGs. An SDG Indicators Catalogue has also been developed for the European Union. The UN and EU indicator catalogues should be used as a basis for monitoring SDG implementation at national, regional and local level. However, when using the international indicator catalogues, it is important to remember that not all 17 SDGs and 169 subgoals or intermediate goals are of equal

relevance in all countries and at all levels. Neither are reliable data from central sources available for all indicators.

In spring 2017, a project to work out suitable SDG indicators for municipalities in Germany was considered in the inter-ministerial working group “Sustainable urban development from a national and international perspective” (in German: IMA Stadt). Subsequently, seven organisations collaborated with a view to jointly implementing the project. The founding members of the working group “SDG Indicators for Municipalities” were Bertelsmann Stiftung, the German Federal Institute for Research on Building, Urban Affairs and Spatial Development, the German County Association, the Association of German Cities, the German Association of Towns and Municipalities, the German Institute of Urban Affairs, and Engagement Global with its Service Agency Communities in One World (SKEW). The German Section of the Council of European Municipalities and Regions has supported the project since autumn 2019. Since the publication of the first indicator catalogue in spring 2018, the indicators have been tested, evaluated and developed further. The present publication contains the revised status of the SDG Indicators for Municipalities.

Excursus “The United Nations’ 2030 Agenda”

Sabine Drees, Association of German Cities

The United Nations the 2030 Agenda

The United Nations (UN) SDGs and development monitoring with indicators are the basis of a common framework for action for German municipalities. In its 2018 resolution, the Presidium of the Association of German Cities (DST) reasserted the organisation’s support of the international sustainability goals and recommended indicator-based monitoring to its members.

Furthermore, the Presidium declared that the project “SDG Indicators for Municipalities” represents a good basis. In 2020, the DST Presidium added that it recommends the 2030 Agenda as a suitable reference for comprehensive sustainability management, including priority setting, controlling and reporting.

The 2030 Agenda as a reference framework for municipality action strategies

There are many different sustainability management tools, and they are adapted to the needs of the respective individual municipality. They may include action strategies, indicator or sustainability reports, a sustainability audit, energy and environmental management, sustainable sourcing and, in larger municipalities, the introduction of an integrated sustainability controlling system. Citizen participation processes are also an important tool. Cities, municipalities and counties are already putting the goals of the 2030 Agenda into practice at local level. The model resolution of the Association of German Cities and of the Council of European Municipalities and Regions (CEMR), entitled “2030 – Agenda for Sustainable Development: Shaping Sustainability at Municipal Level” has now been signed by almost 160 member municipalities. In doing so, they have shown their willingness to pursue municipal strategies for sustainability management, expand global partnerships, participate in measures to combat the negative impact of climate change, or create better access to affordable sustainable energy – to name just a few examples.

The SDGs as a reference framework for municipality sustainability reporting

The “Club of the 2030 Agenda Municipalities”, the model municipalities from the projects “Globally Sustainable Communities” from SKEW at Engagement Global, the municipalities involved in the Bertelsmann Stiftung project “Monitor Sustainable Municipality”, and experts from the DST specialist committees “Environment” and “Buildings and Traffic” contributed to the project “SDG Indicators for Municipalities”.

It is possible for municipalities to go beyond the scope of the indicators to establish a sustainability management system which is oriented towards the quality and content of the SDGs and may consist of the following modules: sustainability strategies, measures, the corresponding structural and financial resources, monitoring, and reporting. We suggest the SDGs and SDG indicators as a reference framework for reporting. From a municipality perspective, it is important that there is not a mandatory, standardised reporting format which would take away the municipalities’ freedom to set their own priorities and impose centralised conditions upon them. In particular, we reject systems such as “comply or explain”, which force individual municipalities to justify themselves and restrict their room to manoeuvre.

International cooperation

The easy handling and attractive visualisation of the SDG Portal (www.sdg-portal.de) was also a decisive factor for the SDG Award, which the UN awarded in 2019 in seven different categories for exemplary implementation of the SDGs. The SDG Portal was nominated in the category “Best Visualisation” and honoured as one of three projects in the final at the awards ceremony in Bonn on 02.05.2019. In all, around 2,000 candidates from 142 countries and seven continents submitted entries for the 2019 “SDG Action Awards”. 21 projects were nominated, of which five were from Europe and two from Germany. “We are delighted with this award. It gives us added impetus in our commitment to municipal climate protection and sustainability. It is the towns which bring the UN’s abstract sustainability goals to life – for example through measures for transport reform, energy-saving building refurbishment or the use of renewable energy”, said Markus Lewe, Vice-President of the Association of German Cities and Lord Mayor of the City of Münster, at the time. The prize helped to draw the international community of municipalities’ attention to the project. In the meantime, the Italian portal www.sdg-portal.it has been completed. Available in English and Italian, it is the result of a successful cooperation of the working group “SDG Indicators for Municipalities” with the Italian RGRE (AICCRE) and Italian scientists. Further cooperation projects to facilitate the method transfer are currently being considered.

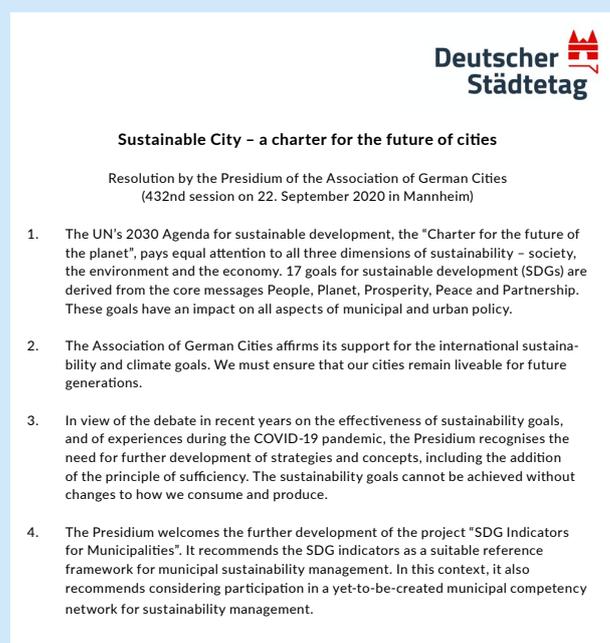
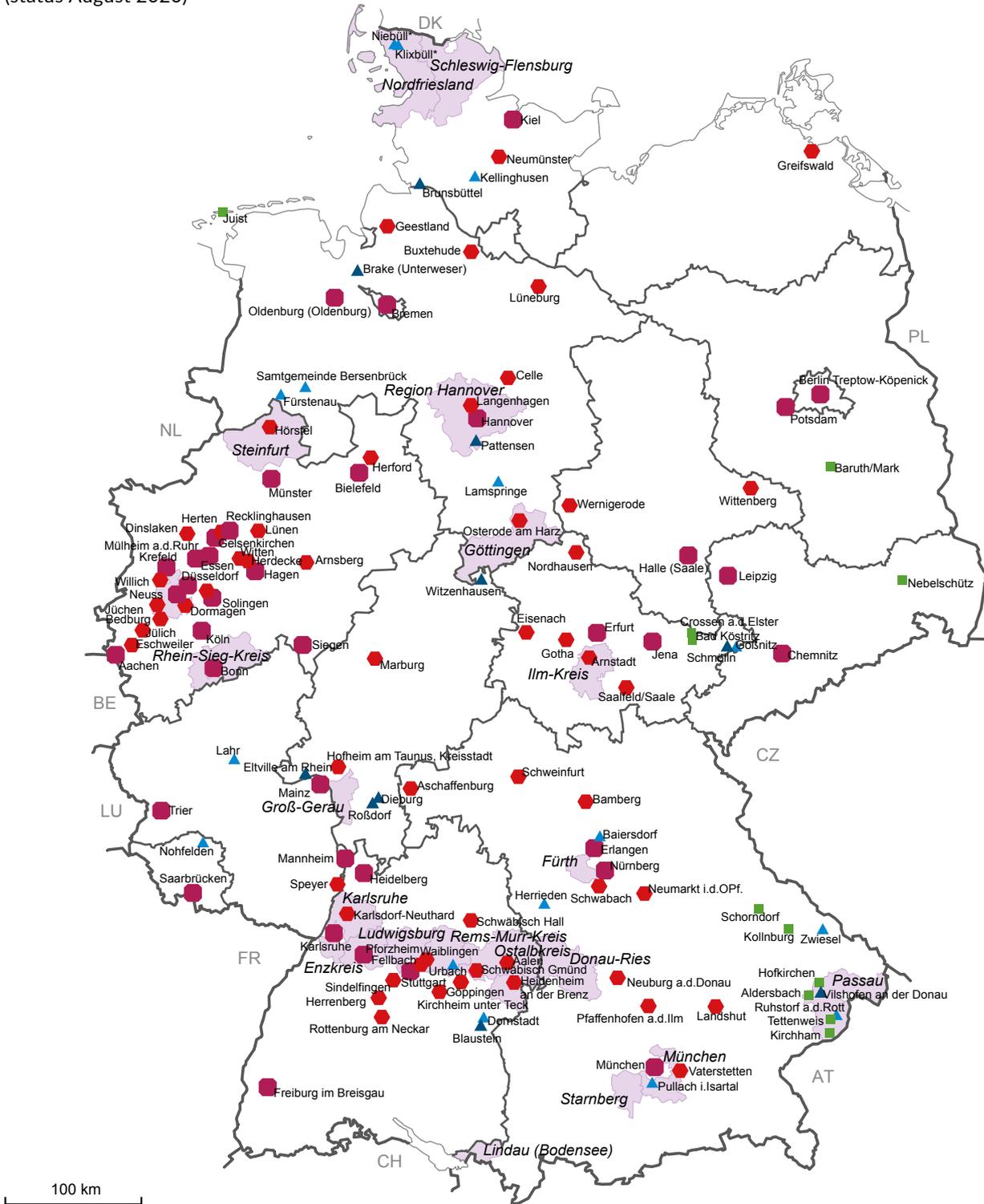


Fig. Resolution of the Presidium of the Association of German Cities

Signatory municipalities to the model resolution “the 2030 Agenda for Sustainable Development: Shaping Sustainability at Municipal Level” of the Association of German Cities and the Council of European Municipalities and Regions / German Section

(status August 2020)



Classification by BBSR town and municipality type

- Large city (100,000 or more inhabitants)
- ◆ Medium-sized town (20,000 to under 100,000 inhabitants)
- ▲ Major small town (10,000 to under 20,000 inhabitants)
- ▲ Minor small town (5,000 to under 10,000 inhabitants)
- Rural municipality
- County

Number

- 38
- 54
- 12
- 14
- 11
- 21

*Niebüll and Klixbüll are municipalities which belong to the administrative district of Amt Südtondern, which is classified as a minor small town.

Data source: Engagement Global gGmbH – Service Agency Communities in One World (SKEW), Continuous spatial monitoring by the German Federal Institute for Research on Building, Urban Affairs and Spatial Development
 Geometric basis: Municipalities and Counties (generalised), 31.12.2018 © GeoBasis-DE/BKG
 Editing: A. Milbert

2.2 Objective

The objective of the project “SDG Indicators for Municipalities” is to identify suitable indicators to map SDG implementation at municipality level in Germany and provide corresponding data.

The identification of suitable indicators requires the collection, evaluation and selection of indicators for the subgoals and single goals of the SDGs, which are generally relevant at municipality level in Germany. The result should be a set of indicators for mapping SDGs at municipality level that is control-relevant, convertible into action, not too extensive and practicable. In general, indicators from existing catalogues are used in the course of the project; new indicators are only created in exceptional cases – if the researched sources do not contain any suitable indicators for the relevant subgoals or single goals.

As far as possible, data are provided to all towns and municipalities with more than 5,000 inhabitants and all counties, although the indicators are also suitable for smaller towns and municipalities. Official statistics are used for data collection wherever possible, whereby data from other central sources may also be used from time to time. The Bertelsmann Stiftung platform Wegweiser Kommune (www.wegweiser-kommune.de) is used to provide the data. In addition – and in coordination with the partner organisations – Bertelsmann Stiftung has also established the SDG Portal (www.sdg-portal.de) for municipalities. The SDG indicators have also been incorporated in the German Federal Institute for Research on Building, Urban Affairs and Spatial Development’s data portal INKAR (www.inkar.de).

The SDG Indicator Catalogue should primarily contain suitable high-quality indicators that are universally available (Type I indicators). However, it is also possible that suitable (very) high-quality indicators which are currently not universally available at municipality level (Type II indicators) will be included in an extended catalogue. The corresponding data is therefore not yet available, so it would need to be collected by the municipalities themselves. Naming the Type II indicators should also provide ideas for further development of official statistics, or other statistics collected by research institutions, for example.

In any case, the SDG Indicator Catalogue has the nature of a proposal: each individual municipality decides on its own which indicators it would like to use for mapping the implementation of SDGs, taking into account local framework conditions and its own strategic priorities. It is therefore conceivable and possible that the proposed SDG indicators may be modified, discarded, or expanded, depending on the local requirements. Taken as a whole, the SDG Indicator Catalogue therefore serves as a modular toolkit for the individual cities, counties, and municipalities. Generally speaking, use of the indicators should help to ensure that sustainability management in the individual municipality is as effects-oriented as possible with regard to implementation of the SDGs.

Excursus “Overview of further international processes in sustainable development”

Deliana Bungard, German Association of Towns and Municipalities

The 2030 Agenda, with the United Nations Goals for Sustainable Development (Sustainable Development Goals, or SDGs) and the mapping of SDG implementation using indicators, are a reference framework for German cities, counties and municipalities (see Excursus “The United Nations’ 2030 Agenda”).

Cities, counties and municipalities play a central role in the implementation of the 2030 Agenda. All three sustainability dimensions and all 17 United Nations sustainability goals are relevant for municipalities – from reducing poverty via integrated urban and regional development to municipal partnerships at national and international level. The goal of creating a sustainable society can only be achieved through an approach involving society as a whole. As they are at the political and administrative level which is closest to citizens, the cities, counties and municipalities already demonstrate in a variety of ways how sustainable development can be promoted in close cooperation with civil society.

The New Urban Agenda from Quito

In October 2016, the international community took a further step towards its vision of a sustainable, global world. The adoption of the “New Urban Agenda” was the conclusion of the third UN Global Conference on Housing and Sustainable Urban Development (HABITAT III) in Quito, Ecuador. The purpose of the New Urban Agenda, which has been ratified by the UN General Assembly, is to underline global commitment to sustainable urban development – with the participation of all relevant stakeholders. In particular, it contributes to the achievement of Item 11, the creation of inclusive, safe, resilient and sustainable cities and human settlements, even in the face of the constantly growing urban population. Currently, the National Progress Report on the implementation of the New Urban Agenda is being worked out (www.bbsr.bund.de). The report is a contribution to the global progress report from a German perspective. Among other topics, it uses indicators to examine climate protection, mobility in an urban-regional context and digitalisation.

UN Climate Conference / Conference of the Parties (COP)

The threat of continued global warming has highlighted the need for a sustainable climate protection policy. In the Paris Agreement of 2015, all 196 signatories to the United Nations Framework Convention on Climate Change (195 states and the European Union) pledged to limit the rise in the Earth's temperature to 2 degrees, and – if possible – only 1.5 degrees higher than in the time before industrialisation. Despite this positive move, the World Climate Change Conference (COP 25) in Madrid on 15 December 2019 ended with only a minimal consensus. The initial euphoria of the Paris Agreement seems to have evaporated. By the time the next Climate Change Conference is held in Glasgow in November 2021, all signatories are supposed to present revised climate protection commitments for the next decade and a long-term strategy for realisation by 2050. The consensus achieved in Madrid does not advance the cause of climate protection and, by extension, of sustainability aspects. The international community has not succeeded in sending a clear message. In the face of increasingly stark evidence of climate change in the form of droughts, storms and flooding, it remains to be seen whether the agreements reached will be effective enough to successfully combat climate change.

Leipzig Charter on Sustainable European Cities

In 2007 the ministers responsible for urban development from all European Union Member States adopted the "Leipzig Charter on Sustainable European Cities". The Leipzig Charter is the central document for integrated urban development in Europe, and its main issues are as relevant today as when the Charter was signed. Among its demands are the reinforcement of integrated approaches to urban development and greater political attention to disadvantaged urban areas, and these demands have

borne fruit. The framework conditions for European cities and municipalities have changed since 2007. All over the world, young people have pledged to do more for climate protection and demanded action from policymakers. In view of the need to ensure socially sustainable housing and land policies in big cities and meet new mobility requirements, the Charter must be adjusted in line with current developments. With this in mind, there will be a dialogue process at German and European level in the second half of 2020 to update the Charter.

Sendai Framework for Disaster Risk Reduction 2015 to 2030

At the Third UN World Conference on Disaster Risk Reduction (WCDRR), held in Sendai in Japan in March 2015, the Member States of the United Nations agreed on a disaster risk reduction plan, the "Sendai Framework for Disaster Risk Reduction 2015 – 2030". In the face of the increasing complexity and frequency of natural disasters in many parts of the world, the Member States declared their determination to expand their efforts to strengthen disaster preparedness and prevention as a means of reducing the worldwide loss of human life and economic assets resulting from disasters. In the decades to come, the world must also be better protected against the risk of disasters – for the good of today's and tomorrow's generations. The Federal Republic of Germany has committed to implementing the Framework. Consequently, in April 2017 the Federal Office of Civil Protection and Disaster Assistance (BBK), acting on behalf of the Federal Ministry of the Interior (BMI), the Federal Foreign Office (AA) and the Federal Ministry of Economic Cooperation and Development (BMZ), set up the National Focal Point for the Federal Republic of Germany. The NFP is responsible for directing implementation processes for the Sendai Framework for Disaster Risk Reduction in Germany.

2.3 Methodology

The methodology for developing and providing SDG Indicators for Municipalities to date can be roughly divided into three phases. There is a detailed description of these phases in Chapter 3.

Phase I: Checking the SDGs for relevance (Chapter 3.2)

The relevance check was based on the consideration that German municipalities (also) play an important role in the implementation of the 2030 Agenda and / or the SDGs – and this applies not only to SDG 11, which specifically deals with the role of cities, but to all SDGs in general. However, the objective of the “SDG Indicators for Municipalities” project is also to devise a clearly arranged, practicable catalogue of SDG indicators, so particular attention was paid to those subgoals and individual statements in the subgoals (single goals) which address major problems or challenges at the municipal level in Germany.

Specifically, the relevance check was divided into three steps: In the first step, the subgoals were in some cases broken up into individual statements (single goals) to enable relevance checking for German municipalities which is as thorough, accurate and transparent as possible. In the second step, a “problem check” was conducted to determine whether the respective subgoal / single goal addresses a major problem for German municipalities. In the third step, a “task check” was carried out to determine whether a contribution to the achievement of the subgoal or single goal can be accomplished through municipal tasks. A supplementary relevance check was then conducted for the area of municipal development policy. Only subgoals or intermediate goals deemed relevant to a problem or task were processed further in the subsequent phases.

Phase II: Evaluation and description of indicators (Chapter 3.3)

The identification of the indicators also consisted of three steps. In the first step, selected sustainability indicator sets were used in order to assign the indicators they contained to the subgoals or single goals which were considered relevant. In addition to existing indicators, indicators not contained in any of the sustainability indicator sets used were also taken

into account and assigned to the subgoals and individual goals considered relevant. To this end, a detailed search of available data sets in various databases was carried out (e.g. the German Regional Database, the INKAR database of the BBSR, and the Wegweiser Kommune information system of Bertelsmann Stiftung). In the second step, all indicators were evaluated according to the four criteria of validity, data availability, data quality, and function as a way to better assess the quality of the collected indicators. Using these evaluations as a basis, it was then possible to identify the Type I and Type II indicators which were particularly well suited for municipal SDG monitoring (see above). In step three, key indicators for the SDG Indicator Catalogue were selected using the Type I and Type II indicators as a basis. The selection centred around technical questions such as whether or not an indicator can be used to represent the entire SDG, and possibly also other SDGs. Detailed descriptions of the selected Type I and Type II indicators were then compiled.

Phase III: Collection and analysis of indicator values (Chapter 3.4)

Data was then collected and analysed for the selected Type I indicators. As a rule, data was collected for all cities and municipalities with more than 5,000 inhabitants, and for all counties. However, in some cases the data could only be collected for the counties and county-free cities, but not for county-affiliated towns and municipalities, too. Where possible, the data from 2006 onwards was collected.

In order to gain a better understanding of the interrelationships between Type I indicators, correlation analyses were conducted. The results of the “SDG Indicators for Municipalities” project are presented in this print publication and online. This publication includes a description of key points of the project, the methodological approach and the info profiles of the selected SDG indicators. This publication (as a PDF file) and individual content items, such as indicator catalogues, info profiles, annexes etc. are available as Excel or Word documents on the homepage of the Bertelsmann Stiftung local sustainability project “Agenda 2030 – Nachhaltige Entwicklung vor Ort” (www.agenda2030vorOrt.de). Data about the qualitatively suitable, universally available indicators i.e. the Type I indicators can be accessed via the portal “Wegweiser Kommune” (www.wegweiser-kommune.de) and the Bertelsmann Stiftung SDG Portal (www.sdg-portal.de). Data about the Type I indicators can also be accessed via the BBSR portal “INKAR” (www.inkar.de).

Excursus “Municipal SDG indicators in the INKAR portal of the German Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR)”

Antonia Milbert / Dr. André Müller, German Federal Institute for Research on Building, Urban Affairs and Spatial Development

Since report year 2017, Type I SDG indicators have also been available in the BBSR portal INKAR (Indikatoren und Karten zur Raum- und Stadtentwicklung; www.inkar.de). In the “Wegweiser Kommune”, the individual municipality is the core reporting unit, and various additional municipalities can be retrieved for voluntary comparison. By contrast, the INKAR portal is designed in such a way that charts covering the whole of Germany are provided, thus ensuring an overview of all municipalities. As a result, data can be displayed in chart form and, via an integrated cartographic tool, as a map. An overall view of Germany is given, and it is possible to focus on one or more Federal States.

The publication of SDG indicators therefore appears in a slightly different way in INKAR than in the Wegweiser Kommune, due to the INKAR-specific standards:

- INKAR provides the most comprehensive and most detailed database for regional statistics in Germany. The information is drawn from a wide number of sources, and presented for the entire territory of Germany after processing. SDG indicators are only published in INKAR if data for them is universally available i.e. for all of Germany. No references are made to Type II SDG indicators.
- The indicators refer not only to administrative spatial entities such as municipalities, counties and Federal States, but also to suitable comparison pairs or sets e.g. urban/rural, West/East, settlement types, town and municipality types, as well as other common regional associations such as regional Chambers of Industry and Commerce (IHK) or labour market regions.
- In order to provide Germany-wide comparisons, the smallest observation unit is therefore not the municipality, but the municipal association. In comparison to the Wegweiser Kommune, data-related information is also provided for unified municipalities and municipality associations with a population of less than 5,000.

- Statistical parameters are generally calculated for time series i.e. municipalities and counties are mapped according to their present territories; reporting does not exclude reformed municipalities and counties. Analogously to the Wegweiser Kommune, time series for SDG indicators start with the observation year 2006 wherever possible, while the information for other topics in INKAR can go back as far as 1995.
- Flexible access offered allows the information to be collated as desired by topic, by region or by time – and exported in all common output formats. In this way, the SDG indicators can be combined and processed with additional background information, according to the user’s individual interests and intended purpose.
- The entire INKAR database is provided completely free of charge and can be used for any purpose.

INKAR is operated intuitively. With just a few steps, users can retrieve regional data and create thematic maps to discover how their own living environment appears in a regional comparison. It contains a wide variety of topics, ranging from demographic structure, economic power, public finances and social security benefits to employment, education, housing, transport, accessibility and land use. Animated maps show developments in ‘fast motion’ mode.



Fig. INKAR online

2.4 Organisation

A working group was set up and discussion events carried out to organise the project “SDG Indicators for Municipalities”. Furthermore, the interim results were discussed by the Advisory Board of the Bertelsmann Stiftung project “Monitor Nachhaltige Kommune” (Monitor Sustainable Municipality) or by the Advisory Board of the follow-up project “Agenda 2030 – nachhaltige Entwicklung vor Ort”.

The addressees and the tasks of the individual committees or formats are briefly explained below:

Working group

The members of the working group “SDG Indicators for Municipalities” are Bertelsmann Stiftung, the German Federal Institute for Research on Building, Urban Affairs and Spatial Development, the German County Association, the Association of German Cities, the German Association of Towns and Municipalities, the German Institute of Urban Affairs and Engagement Global with its Service Agency Communities in One World and also – since autumn 2019 – the Council of European Municipalities and Regions / German Section.

The Association of German Cities initiated the project in spring 2017 and moderates the working group with representatives of the organisations involved. The German County Association and the German Association of Towns and Municipalities are accompanying the project work and – as is the Association of German Cities – advocating the use of the SDG indicators in the member municipalities. The German Section of the Council of European Municipalities and Regions also supports the use of the indicators in its member communities. Bertelsmann Stiftung has entrusted the German Institute of Urban Affairs with the task of developing and refining the indicators. The Foundation is responsible for the overall organisation of the project, the publication of project results and the provision of data via the portals www.wegweiser-kommune.de and www.sdg-portal.de. The German Federal Institute for Research on Building, Urban Affairs and Spatial Development is involved in developing and refining the indicators and providing data via its www.inkar.de portal. Engagement Global supports the work of the project with its Service Agency Communities in One World and promoted Bertelsmann Stiftung’s work with funds from the Federal Ministry of Economic Cooperation and Development.

The Federal Chancellery, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, and the Federal Inter-Ministerial Working Group “Sustainability Indicators” have given constructive help and support with the project – especially with the development and refinement of the SDG indicators.

Discussion events

The format of the discussion events is aimed, among others, at municipalities that signed the model resolution on the 2030 Agenda for Sustainable Development set up by the Association of German Cities and the Council of European Municipalities and Regions / German Section, the model communities in the country-specific projects “Global Sustainable Municipality” from Engagement Global, and the cities and counties involved in the Bertelsmann Stiftung project “Monitor Sustainable Municipality” and the follow-up project “Agenda 2030 – Nachhaltige Entwicklung vor Ort”. Representatives of the member organisations of the working group “SDG Indicators for Municipalities” and other experts also participate in the discussion events.

The Bertelsmann Stiftung takes care of the preparation, organisation and follow-up of the discussion events, in which the interim results of the working group are discussed. The participants’ feedback is taken into consideration by the German Institute of Urban Affairs and the working group during the further development of the working results. The revised documents are submitted to the Project Advisory Board.

Project Advisory Board

The Project Advisory Board consists of representatives of the cities and counties involved in the Bertelsmann Stiftung project (current members: City of Arnsberg, City of Freiburg i. Brsg., City of Eltville am Rhein, City of Geestland, City of Münster, Baden-Württemberg state capital Stuttgart and the counties Cochem-Zell and Lippe), representatives of municipal umbrella organisations, of the German Institute of Urban Affairs, of the German Federal Institute for Research on Building, Urban Affairs and Spatial Development, the Service Agency Communities in One World at Engagement Global, the Sustainable Development Committee of the Federal State Working Group Agenda 21 NRW e.V., ICLEI – Local Governments for Sustainability, as well as other experts.

The Project Advisory Board provides feedback on the working results achieved in the course of the discussions. This feedback is taken into account by the German Institute of Urban Affairs and the working group “SDG Indicators for Municipalities” when the working results are finalised.

Excursus “Indicators for mapping the global responsibility of municipalities”

Dr. Stefan Wilhelmy / Annette Turmann, Engagement Global

“No-one will be left behind”, is the pledge made by the Member States of the United Nations in the Preamble to its the 2030 Agenda. This applies to both the individual nations and the global community as a whole. The 17 Sustainable Development Goals, or SDGs, ultimately represent topics that transcend our national frontiers and can only be resolved through global cooperation and collaboration. Monitoring of the implementation of the SDGs at local community level therefore faces the challenge of taking into account external effects which have a significant impact on whether or not other countries can realise their own sustainability goals. Wherever possible, municipal control systems should therefore also use indicators that do not merely measure the achievement of goals on their home territory, but also the municipality’s commitment to and impact on development policies in other countries. As the significance and sphere of action of municipalities as development policy stakeholders increase, these issues will come into even sharper focus.

With its service “Global Sustainable Municipality”, the Service Agency Communities in One World (SKEW) supports municipalities in their conceptual implementation of the SDGs with funds from the Federal Ministry of Economic Cooperation and Development (BMZ). The scheme has incorporated the concept of global responsibility from the very beginning, and in this way more and more municipalities are tackling the issue of municipal development policy and the SDGs. SKEW works with various stakeholders to cover this level of SDG monitoring, design guidelines and offer assistance in finding suitable indicators. In this context, SKEW also supported and promoted the development of Bertelsmann Stiftung’s SDG indicators for municipal development policy.

The aim of the project was to develop and test indicators for the measurement of the contribution of municipalities in Germany to development policy for the implementation of the 2030 Agenda and the SDGs. The SDG indicators for municipal development policy should be as practice-oriented, easy to collect, control-relevant and

comparable between municipalities as possible. Whenever possible, indicators should be based on data taken from official statistics or other existing databases. Besides official statistics, other possible data sources were also researched. However, as only a restricted quantity of parameters for municipal development policy was available, the municipalities had to collect most of the data themselves. Suitable collection tools for this purpose were created as part of the project to develop SDG indicators for municipal development policy.

As a result, the following 16 core indicators for municipal development policy were defined, some of which were incorporated into the overall Catalogue of SDG Indicators for Municipalities:

- SDG 4 “Quality education”: sustainable schools, sustainable daycare facilities;
- SDG 10 “Reduced inequalities”: projects with immigrant organisations, proportion of seats held by immigrants in town councils, municipal councils or state parliaments;
- SDG 12 “Responsible consumption and production”: projects with Fairtrade initiatives, Fairtrade Towns, Fairtrade Schools, Fairtrade Universities, index sustainable sourcing, sustainable sourcing procedures;
- SDG 13 “Climate action”: climate partnerships;
- SDG 17 “Partnerships for the Goals”: expenditure on municipal development policy, expenditure on municipal development cooperation, partnerships in Global South countries, projects in Global South countries development aid projects.

The collection of test data showed that the core indicators for municipal development policies are practice-oriented and generally also easy to compile. However, further work is required on fine-tuning of indicator definitions and optimisation of collecting aids. An additional challenge is the collection, processing and provision of data that is comparable between municipalities for the indicators which are mainly not available from existing sources.

2.5 Time schedule

Development

The project “SDG Indicators for Municipalities” began in spring 2017. The first Indicator Catalogue was published a year later, while the data available from central sources was entered in the Wegweiser Kommune at the same time. At the end of 2018, the data were also published in the SDG Portal for Municipalities.

Testing

The SDG indicators were tested both with and without external support. There was external support for the tests in Baden-Württemberg’s state capital Stuttgart, in the Saarpfalz County (a model municipality in the project “Globally Sustainable Municipalities in Saarland”), and in individual model municipalities in the Bertelsmann Stiftung project “Monitor Sustainable Municipality” and its follow-up project “Agenda 2030 – Nachhaltige Entwicklung vor Ort”.

The aim of the test in Stuttgart was to conduct a quantitative survey on the basis of the SDG indicators. The project was carried out in collaboration with the Service Agency Communities in One World of Engagement Global. The German Institute of Urban Affairs was entrusted with the task of providing operational support. The results of the project can be viewed here (German language only): <https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/lebenswertes-stuttgart-die-globale-agenda-2030-auf-lokaler-ebene>.

The project “Globally Sustainable Municipalities in Saarland” by the Service Agency Communities in One World of Engagement Global was conducted in cooperation with the Institute for Applied Material Flow Management (IfaS) at the Environmental Campus Birkenfeld. As part of the project, 13 municipalities were advised on the implementation of the 2030 Agenda. Furthermore, a quantitative survey on the basis of the SDG indicators was conducted with the Saarpfalz County, a project which was supervised by the IfaS on behalf of Bertelsmann Stiftung. The results of the test can be viewed here (German language only): <https://www.bertelsmann-stiftung.de/de/publikationen/publikation/did/lebenswerter-saarpfalz-kreis-die-globale-agenda-2030-auf-lokaler-ebene-1>.

In the model municipalities of the project “Monitor Sustainable Municipality” and the follow-up project “Agenda 2030 – Nachhaltige Entwicklung vor Ort”, the use of the SDG indicators was supervised by ICLEI – Local Governments for Sustainability or the Federal State Working Group Agenda 21 NRW.

In some cases, the SDG indicators were also tested independently, for example in municipalities that had signed the model resolution of the Association of German Cities and of the Council of European Municipalities and Regions / German Section.

Evaluating

The experiences gained during the testing were collected, evaluated and developed for further utilisation. To this end, the German Institute of Urban Affairs conducted a qualitative investigation in a small number of municipalities on behalf of Bertelsmann Stiftung. The investigation looked at two municipalities from each of the following three groups: municipalities that had used the SDG indicators with external support; municipalities that had used the SDG indicators without external support; and municipalities that had acknowledged the SDG goals but had not yet worked with the “SDG Indicators for Municipalities” tool.

Interviews were mostly conducted with the sustainability officers in the respective municipalities. They were asked about their experiences with “sustainability mapping”, and above all with quantitative mapping, as well as their experiences with the SDG Indicators for Municipalities, the strengths and weaknesses of the indicators, and other obstacles.

At the beginning of 2019, the key focal points for the further development of the SDG Indicator Catalogue were determined on the basis of the evaluations.

Further development

The working group defined six key focal points for the further development of the SDG Indicator Catalogue:

- Vertical integration of indicators;
- Indicators for climate and energy;
- Indicators for city, municipality and county development;
- Indicators for additional individual topics;
- Indicators based on public data;
- Indicators for municipal development policy.

The first five key points were processed by the German Institute of Urban Affairs. A separate project was initiated for the further development of municipal development-related indicators, which was conducted by Bertelsmann Stiftung in cooperation with and partly funded by Engagement Global with its Service Agency Communities in One World, with the support of the Municipal Association for Administration Management (Kommunale Gemeinschaftsstelle, KGSt) and in collaboration with selected model municipalities (see Excursus “Indicators for mapping the global responsibility of municipalities”).

No.	Committee / Format	Topic	Place	Date
1	Working group session	Check on the relevance of the SDGs	Cologne	07.06.2017
2	Discussion event	Check on the relevance of the SDGs	Hanover	26.06.2017
3	Project Advisory Board meeting	Check on the relevance of the SDGs	Berlin	30.06.2017
4	Arbeitsgruppensitzung	Identification of indicators	Cologne	21.09.2017
5	Discussion event	Identification of indicators	Hanover	10.10.2017
6	Project Advisory Board meeting	Identification of indicators	Berlin	07.11.2017
7	Working group session	Description of the indicators and collection of data	Cologne	30.01.2018
8	Working group session	Discussion of the manuscript of the publication	Cologne	25.04.2018
9	Project Advisory Board meeting	Discussion of the manuscript of the publication	Berlin	19.09.2018
10	Working group session	Discussion of the final version of the publication	Cologne	20.10.2018
11	Project Advisory Board meeting	Discussion of the final version of the publication	Berlin	07.11.2018
12	Working group session	Results of the evaluation	Cologne	14.03.2019
13	Project Advisory Board meeting	Interim results of further development processes	Berlin	17.06.2019
14	Working group session	Discussion of 1 st version of the new indicators	Cologne	18.08.2019
15	Discussion event	Discussion of 1 st version of the new indicators	Hanover	01.10.2019
16	Project Advisory Board meeting	Discussion of 1 st version of the new indicators	Berlin	22.10.2019
17	Working group session	Discussion of 2 nd version of the new indicators (Part1)	Cologne	04.12.2019
18	Working group session	Discussion of 2 nd version of the new indicators (Part 2)	Cologne	15.01.2020
19	Working group session	Discussion of 3 rd version of the new indicators	virtual	26.05.2020
20	Working group session	Discussion of final version of the new indicators	virtual	26.08.2020
21	Project Advisory Board meeting	Presentation of final version of the new indicators	virtual	06.10.2020

Tab. Milestones of the project work to date

Excursus “The significance of the municipalities for Germany’s Sustainable Development Strategy”

Miriam Elsaesser, German County Association/ Lucas Milbert, Association of German Cities

Municipalities are the key to the success or failure of sustainable development. The Catalogue of SDG Indicators for Municipalities shows clearly that this applies not just to SDG 11 “Sustainable cities and communities”, but to all 17 sustainability goals: whether it is core Indicator 1 on the SGB II / XII quota, Indicators 13, 14 and 15 on locally available healthcare, or Indicator 120 on the number of development-centred projects, Germany’s cities, counties and municipalities make a decisive contribution to the country’s progress towards sustainable development.

Against this backdrop, it is hard to understand that municipalities only play a minor role in Germany’s Sustainable Development Strategy (SDS), a role which actually even appears to be diminishing as time goes by. While the new version of the SDS published in 2016 still included a sub-chapter entitled “The significance of the counties and municipalities for Germany’s Sustainable Development Strategy”, which highlighted the central importance of the municipalities for the implementation of German sustainability goals and the 2030 Agenda, the 2018 update only makes occasional references to the role of the municipalities in the context of flagship projects, the “involvement of societal stakeholders” or “the cooperation between the Federal Government and the Länder [Federal States]”.

An international comparison demonstrates that things can be done differently. In a recent survey by Platforma, the European coalition of towns and regions committed to development cooperation, 58 per cent of local government associations that responded stated that they had been involved in national sustainability reporting.¹ There is no such comparable, systematic consideration and involvement of municipalities in Germany.

This tendency is also reflected in the selection of the key indicators used to measure sustainable development in Germany according to the SDS. Many indicators that already exist at municipal level and could be transferred to the SDS without any trouble are not used. In this way, the municipalities’ contribution to sustainable development is not sufficiently publicized. Although the SDS stresses that cities, counties and municipalities are important stake-

holders in sustainable development, it offers only limited help when it comes to registering the municipalities’ contribution to the achievement of the sustainability goals.

Prominent examples are the indicators for SDG 3 “Health and well-being”, which map the local availability of basic healthcare facilities such as general practitioners, hospitals and pharmacies (Indicators 13 to 15 of the SDG Indicators for Municipalities) and the availability of beds in residential care homes and personnel in residential and out-patient care services (Indicators 16 to 18). Particularly during the current pandemic, it has become clear that the achievement of the goal “ensure healthy lives and promote well-being for all at all ages” cannot be gauged merely by premature mortality rates or the number of smokers or obese citizens, but depends to a large extent on the level of local services provided at municipality level. The fact that these existing data are not used in the SDS means that there is a shortened depiction of sustainable development in Germany.

The same applies to SDG 4 “Quality education”: the local availability of primary schools (Indicator 20) would be a sensible addition which would portray one aspect of quality education in Germany. Moreover, the adoption of the indicator for the number of integrated child daycare centres (Indicator 27) would also reflect the aspect of inclusion, but this is not covered by any key indicator in the SDS.

SDG 11 “Sustainable cities and communities” explicitly addresses municipal issues. The aim is to create settlements which are inclusive, safe, resilient and sustainable. Adding, for example, indicators for the local availability of supermarkets (Indicator 59) and green spaces (Indicator 70) to the SDS would be desirable here, as these and other indicators directly represent and illustrate the quality of life of people in Germany.

This list could be continued for many other SDGs. Perceptions as to which specific indicators are most relevant for mapping sustainable development in Germany can, of course, vary. However, it should now have become clear that there can be no complete representation of the sustainability development situation in Germany without a comprehensive appraisal of the situation at municipality level.

¹ CEMR & PLATFORMA (2020) The 2030 Agenda through the eyes of local and regional governments’ associations

3

Methodology for developing SDG Indicators for Municipalities

Dr. Jasmin Jossin / Oliver Peters / Philipp Holz / Dr. Busso Grabow, German Institute of Urban Affairs

3.1 Goals of the SDG Indicator Catalogue

The main aim of the project “SDG Indicators for Municipalities” is to develop suitable indicators for mapping the 17 SDGs at municipal level in Germany. To this end, indicators are identified or, in some cases, newly defined and the corresponding data compiled to provide indicator values – as far as possible – at municipal level. The Indicator Catalogue is intended as a tool for impact-oriented municipal sustainability management. It is advisory and modular, so individual municipalities can decide for themselves which indicators they will use locally, and to what extent they would like to modify, supplement or reinterpret them. Depending on the municipality’s objective, it could make sense to use the entire Indicator Catalogue (if, for example, a comprehensive survey of the current sustainable development status is required), or to select only specific indicators (for strategy development or performance reviews of specific measures, for instance). In the latter case, however, it should be remembered that – as stated in the Preamble to the 2030 Agenda – the SDGs should be considered indivisible, and regarded and assessed as a complete unit, where possible. This is important for ensuring that the complex interrelationships between the various intermediate goals within or between SDGs are taken into account. In other words: it is only possible to meaningfully evaluate the contribution of a strategy or measure to municipal sustainable development if the systemic interdependencies and consequences (known as target congruencies and target conflicts) of measures are considered.²

When it started in 2017, the working group “SDG Indicators for Municipalities” set itself the target of creating an SDG Indicator Catalogue that was as directive (management-relevant) as it was workable (manageable). To facilitate the efficient achievement of these goals, the development of indicators was based on the appraisal of the relevance of the 169 SDG subgoals for German municipalities. Using this “relevance check”, a three-step process took place to identify which SDG subgoals or partial statements in the single goals can be regarded as particularly relevant for German

municipalities. For this purpose, a strongly participative process was selected, which was then revised in several stages and by various committees (see Assmann, Honold, Grabow & Roose 2018 and Knipperts 2020).

The design and results of the relevance check are described in greater detail in the following sub-chapter. However, the working group would like to point out that a negative relevance check result for a subgoal or single goal does not necessarily mean that the goal will not be relevant for individual municipalities and their specific objectives and challenges. Therefore every municipality is individually responsible for checking which additional subgoals or single goals it wants to incorporate in its own sustainability monitoring.

3.2 SDG relevance check as a basis for indicator development

3.2.1 Fundamental relevance check considerations

The working group considers that the German municipalities (also) play a pivotal role in the implementation of the 2030 Agenda and therefore aim the solution of a wide variety of global problems and challenges. In their actions as local authorities, German municipalities should not focus only on SDG 11 and other selected goals, but also strive to participate in the implementation of all 17 SDGs and (almost) all subgoals (for example, see Engagement Global 2016; UCLG 2015): whether it is through action “In the municipality for the municipality”, “In the municipality for the world” or “In other countries by other countries” (cf. distinction in the context of the project “Global Sustainable Municipality”; Federal State Working Group Agenda 21 NRW e.V. / Engagement Global 2018).

Nevertheless, an Indicator Catalogue that maps the entire content of all 169 subgoals (and would therefore have to contain several hundred or even more than a thousand indicators) would be unworkable – not just for us as a working group, but in particular for municipalities that want to use

² Under the headings “Interrelationships” and “General conditions”, the indicator info profiles contain information about which potential relationships of an indicator to other indicators and characteristic municipal structures should be at least taken into consideration. The presentation of interrelationships and conditions does not claim to be exhaustive.

our catalogue as a comprehensive but still practicable and realistic aid to determining their sustainable development status. This is why the SDG Indicators for Municipalities focus on the subgoals or intermediate goals which address major problems and challenges in municipalities in Germany or in the Global South, and can – at least in part, and above all measurably – be resolved or overcome by German municipalities acting within their own sphere of responsibility and authority.

There is a general problem with SDG subgoals whose wording is open to interpretation, which in turn means that the result of the relevance check depends upon how the goal is interpreted. A comparison with the original wording in English was sometimes helpful or, where there was doubt, reference to the basic tenets formulated in the 2030 Agenda: “People, Planet, Prosperity, Peace and Partnership”.

For example, it is not initially clear what is meant by the “modern energy services” mentioned in the English original text of SDG 7.1: in the least developed countries, coal-fired power stations might be regarded as “modern energy sources” – which would, however, run contrary to the fundamental principle “Planet”, which explicitly calls for greater protection against harmful environmental impact and active measures to combat climate change. In order to classify SDG 7.1 as a relevant subgoal, ‘modern’ was assumed to mean clean and renewable.

Generally speaking, the correct interpretation either becomes clear when it was possible to divide subgoals into various single goals, or can be inferred from the type of the assigned indicator. Overall, however, no “reinterpretations” or additions (for example on systematic grounds or on the basis of specific scientific knowledge) were made to statements.

As another example, the slums mentioned in SDG 11.1. are not the same as informal settlements (where people tend more to live voluntarily) or areas consisting of socially critical housing. Instead, the internationally acceptable definition of a slum area was used, so that this subgoal was divided into two partial statements. In a similar way, the desertification mentioned in SDG 15.3.1 was not “translated” as land degradation, so that this single goal is not relevant for German municipalities, although it is for municipalities in the Global South. Moreover, subgoals addressed to non-municipal stakeholders or institutions are not reinterpreted for municipalities, even if municipalities can contribute to the achievement of a goal through corresponding action (for example, when SDG 13.a mentions “jointly mobilizing \$100 billion annually by 2020 from all sources to address the needs of developing countries”, this is not addressed to municipalities, but only to the contracting parties of the United Nations Framework Convention on Climate Change). The sole exception is SDG 13.2 (“Integrate climate change measures into national policies, strategies and planning”). Although “national level” is specifically mentioned here, global climate protection goals can only be achieved if there are also contributions at municipal level. For the time being, no additions were made that would set out targets for a measure considered helpful or necessary for the imple-

mentation of (municipal) development cooperation unless it was explicitly or implicitly mentioned as an implementation measure – even if it was in an area that can be the subject of municipal development cooperation, such as SDG 3.8.1 “Coverage of essential health services [...] among the general [...] population”.

3.2.2 Structure of the relevance checks

3.2.2.1 Sub-division of the 169 subgoals (Step 1)

First, the 169 subgoals of the 17 SDGs were examined to determine whether it was necessary to sub-divide them into partial statements or single goals to establish a consistent relevance check for German municipalities. This was the case for some subgoals because they contained some components with distinct content which might need to be evaluated differently in the problem check or the task check.

For example, SDG 11.1 (“By 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgrade slums”) was sub-divided in this way. Consequently, the relevance check for the first single goal “By 2030, ensure access for all to adequate, safe and affordable housing and basic services” (SDG 11.1.1) returned a positive result, whereas the result of the relevance checks for the second single goal “Upgrade slums by 2030” (SDG 11.1.2) was negative because slums do not exist in Germany. Nonetheless, slums remain a problem of the Global South and a task for municipal development policy, so the intermediate goal was classed as positive in a second relevance check (see Chapter 3.2.2.4).

Result: Following this procedure, a total of 43 of the 169 subgoals were sub-divided into 94 intermediate goals – i.e. in eight cases, a subgoal was even sub-divided into three intermediate goals. Consequently, after the first step of the relevance check there were 220 subgoals and intermediate goals for the 17 SDGs for which a problem check was required in the next step.

3.2.2.2 Problem check (Step 2)

On the basis of the fundamental considerations stated above, problems or challenges that impact a “significant” proportion of municipalities or relevant sectors of the population in Germany – as a rule of thumb more than 10 percent – were classified as significant for German municipalities. This means that, for example, challenges for coastal (or alpine) communities are initially excluded, unless other municipalities can also make a significant contribution to the subgoal or single goal. However, marine and alpine eco-system protection goals are taken into account in national reporting. In exceptional cases, the problem check was also rated positive for subgoals or partial statements that impact less than 10 per cent of certain sections of the population, but still represent a not inconsiderable societal problem which has not been satisfactorily resolved for municipalities – namely in cases where there is political consensus that action is required.

This applies, for example, to malnutrition (SDG 2.2) which is estimated to affect about 1.5 million people in Germany – particularly in in-patient healthcare facilities (cf. healthcare provision watchdog Monitor Versorgungsforschung, 2017, for example). Although this represents less than 10 percent of the population, it can be assumed that there is political consensus on the need for action. Illiteracy is a further example (SDG 4.6 “By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy”), which affects – at least in a restricted sense – more than 7 million adults in Germany (Federal Ministry of Education and Research, 2016).

Action is also required when the goals are unlikely to be achieved in the time allotted for their completion, if the extent of targeted improvement cannot be achieved in Germany in the case of quantitative goals, or if the goals are considered undesirable in some municipalities due to anticipated conflicts of interest.

For example, the global goal SDG 3.6 – halving the total number of road traffic deaths and injuries by 2020 worldwide – is not possible in Germany because of its high safety standard in comparison with many other countries, but German municipalities can nevertheless continue to strive for a reduction of the number of deaths and injuries resulting from road accidents. In several German municipalities, a substantial increase of afforestation and reforestation (SDG 15.2.2) could lead to land shortages and conflicts of interest with other areas of sustainable development, whereas it could be a sensible course of action in other municipalities.

Result: the problem check yielded a positive result for 145 of 220 (= 65.9 percent) of subgoals and single goals which were the subject of a task check in the third step.

3.2.2.3 Task check (Step 3)

A check “to determine whether a contribution to the achievement of the subgoal or intermediate objective can be accomplished with the aid of municipal tasks or products” was only undertaken if the result of the problem check was positive. In this case, the evaluation was based on an assessment process on the basis of two concrete sources and subjective estimation. The following sources were used as a basis: The KGSt Product Plan (status June 2016): although the initial proposal was to concentrate solely on the KGSt Product Plan, there were several reasons why this was rejected as insufficient for evaluation purposes. Firstly, the Plan is not complete, as it often does not include outsourced tasks, for example; secondly, in many cases the products listed there are phrased in terms too general to permit a clear statement concerning the evaluation of a subgoal or single goal; thirdly, it is not uncontroversial, or is not fully “practised” in daily use, resulting in the creation of other “home-grown” product classifications in certain places. The current product framework plans of the Federal States (Länder): these plans are used for the product-oriented structuring of municipal budgets in the respective State. The wording of the products listed in the product framework plans of the Federal States goes into a little more detail than the KGSt Product Plan.

There was no exhaustive clarification of the legal background of every subgoal and single goal, or a detailed examination of the municipal and county ordinances of every Federal State, as this would have been impossible with the given resources and timeframe. Overall, a municipality can make a contribution to sustainable development not only, but also, via voluntary municipal tasks such as climate protection, sustainable procurement, business development or sustainable development training.

The following general decision rule was laid down: if, with the help of municipal tasks or products (i.e. within the budgetary and legislative scope of the local authority, the political stakeholders or the municipal companies; “large action options”), German municipalities can make a direct contribution to the accomplishment of the respective individual statement, or if municipalities have the means to create favourable conditions for their implementation by other stakeholders (“medium action options”), it is – in the broadest sense of the word – a municipal task. If a municipality can, in an individual case and within narrow limits, merely motivate other stakeholders to act in accordance with the principles of an SDG (“small action options”), this is not considered a relevant task.

Thus SDG 11.1.1 (“By 2030, ensure access for all to adequate, safe and affordable housing and basic services”) clearly falls within the (mandatory) task remit of a municipality, since there is a wide range of housing policy tools which provide scope for large action options. Medium action options were perceived in the area of economic growth (SDG 8.1.1 “Sustain per capita economic growth in accordance with national circumstances”), which allows favourable conditions to be created within the framework of municipal business development. By contrast, the task check for SDG 16.10.2 (“Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements”) yielded a negative result because, although the protection of fundamental freedoms is part of the range of municipal tasks, municipalities cannot punish transgressions and thereby protect fundamental freedoms. An example of “small action options” that were not assessed as a municipal task is SDG 14.a (“Increase scientific knowledge, develop research capacities and transfer marine technology [...] in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries [...]”): although a municipality might be able to encourage local research organisations to engage in specific research, it can hardly directly influence research by imposing conditions; the same applies in the case of research policy at Länder or Federal level.

The task check did not take into account whether or not municipalities currently have the institutional, financial or personnel resources to accomplish the tasks or if they are prioritizing single goals. As a matter of principle, an improvement of the situation in a municipality contributes to an improvement of the situation at national and global level, even though the contribution to global improvement may not be expressed as a measurable value. It was also important for the task check that municipal action to resolve a problem or

a challenge is, in principle, measurable using indicators. In this way, indirect multiple effect chains of municipal actions are not considered for the time being.

For instance, while municipalities contribute quite significantly to ocean acidification, especially through CO₂ emissions (SDG 14.3 “Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels”), the contribution of an individual municipality cannot be measured directly and is therefore not accessible for monitoring. Conversely, the task check for SDG 14.1 (“By 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution”) yielded a positive result, as the nutrient input into rivers in the vicinity of municipalities can be at least estimated.

On principle, goals pertaining to unlawful acts were not considered task-relevant for municipalities, as such activities are the responsibility of the law enforcement agencies. If law enforcement agencies fail to prosecute criminal offences and other unlawful acts, municipalities can hardly be expected to compensate for these deficiencies.

This applies, for example, to SDG 16.4.1 (“By 2030, significantly reduce illicit financial and arms flows”) and SDG 8.8.2 (Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment”).

The result of the task check depended solely on whether or not municipalities are able to influence outcomes (in the sense of having large or medium action options, see above), but not on how comprehensive these influences are. The task check also yielded a positive result when municipalities are only addressed as employers, and can therefore only make a small contribution to the achievement of the goal.

For example, municipalities can contribute to SDG 8.5 (“By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value”) by ensuring that their employees are paid a fair and appropriate wage.

Finally, small influencing opportunities were also not considered relevant if influence was only possible via municipal partners,

but decisions are not made at individual municipality level.

Trustee savings banks (“Sparkassen”) are, in principle, municipal partners and a possible factor in achieving SDG 8.3 (“Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage formalization and growth of micro-, small- and medium-sized enterprises including through access to financial services”). However, the criteria for decisions on access to financial services are made at regional Association of German Saving Banks and Landesbanken (DSGV) level or higher, so an individual municipality has, at best, minimal opportunities for action.

Result: The task check was carried out for the 145 subgoals or intermediate goals with a positive problem check result. Task check evaluation was only negative in 19 cases, so the relevance check was positive for 126 of the 220 (= 57.3 per cent) of the subgoals or intermediate goals.

3.2.2.4 Relevance check for municipal development policy and overall result

Finally, the result of the relevance check was compared and combined with a second relevance check conducted by the project “SDG indicators for municipal development policy” (Knipperts 2020). The same methodology of dividing subgoals into single goals was adopted here, so evaluation was based on the same number of subgoals and single goals. The question “Does the subgoal or single goal represent a problem for municipalities of the Global South?” was added to the problem check. The task check was performed in three steps: firstly, for possible municipal development policy tasks with an effect on and by other countries; secondly, for tasks with an effect in the municipality for the world; and thirdly, for tasks with an effect in the municipality and for the municipality (for some single goals, there are tasks with effects in more than one area of municipal development policy). A total of 156 of subgoals or single goals (= 70.9 per cent) were classed as relevant for municipal development policy (Knipperts 2020), although these are not congruent with the subgoals or intermediate goals from the first relevance check and were only extended by the question of problems and tasks related to the Global South. Although the following 7 subgoals or intermediate goals had a negative result in the second relevance check from the perspective of municipal development policy, they have nevertheless been retained because of their positive assessment in the first relevance check in the present project “SDG Indicators for Municipalities”.

SDG	No. of subgoal / single goal	Title of subgoal / single goal
8	8.5.2	By 2030, achieve [...] equal pay for work of equal value
	8.7.2	[...] by 2025 end child labour in all its forms
	8.8.1	Protect labour rights
16	16.1	Significantly reduce all forms of violence and related death rates everywhere
	16.2	End abuse, exploitation, trafficking and all forms of violence against and torture of children
	16.4.3	By 2030, [...] combat all forms of organized crime
	16.5	Substantially reduce corruption and bribery in all their forms

Overall result: The project “SDG Indicators for Municipal Development Policy” classified a total of 30 subgoals or single goals – in addition to the 126 subgoals or intermediate goals from the first relevance check – as relevant, which have been adopted here. A further 7 subgoals or intermediate goals that were only classified as relevant in the first relevance check have also been retained for consideration in the overall assessment. The final result from this combination of the two relevance checks is that 163 (or 74.1 per cent) of the subgoals or single goals were selected for consideration in connection with SDG indicators.

3.3 Evaluation and description of the SDG Indicators

In order to underpin the relevant subgoals or single goals with indicators of the highest possible quality, four fundamental quality criteria and corresponding minimum standards were defined, creating a decision-making framework to enable the selection of the indicators that were most suitable for the goals of the working group, following the research, collection and selection of indicators from existing sources the creation of newly developed indicators. These four quality criteria are validity, data availability, data quality and function. To enable minimum standards within these criteria to be defined, they were divided into three to four different quality grades. These standards are explained in detail below.

3.3.1 Validity

Validity is the content-related suitability of an indicator for monitoring a specific fact or situation described in the respective SDG subgoal or single goal. Evaluation can refer to a facet of the corresponding subgoal or single goal and does not depend on how completely an indicator maps the

In the case of validity, the minimum standard for an indicator depends on whether or not data for the indicator can be provided (see 3.3.2): When data for an indicator can be provided (“Type I indicator”), validity that is “Applicable with restrictions” (“xx”) is sufficient; indicators that the municipalities have to collect themselves (“Type II indicators”) must be rated “Fully applicable” (“xxx”).

3.3.2 Data availability

Data availability expresses whether or not an indicator with data can be laid down at municipal level (for municipalities with 5,000 or more inhabitants) or at least at county and county-free city level. The prerequisite is that corresponding data sets from central sources – official statistics or research projects – can be accessed and processed without undue effort. Two additional prerequisites are a regular collection at intervals of at least six years and a central data collection concept which allows the comparison of data between municipalities as a matter of principle. Data availability was awarded one of four possible ratings: “x” for indicators that are not centrally available and must be collected decentrally as well (such as municipal greenhouse gas balances or biodiversity mapping); “xx” for indicators for which data is not available from central sources, but where municipalities can obtain data without undue trouble or effort (e.g. gender balance in the municipal council or turnout at the latest municipal elections); “xxx” for indicators for which data from research projects or open sources at municipal or county level can be assigned – even if this is not valid throughout Germany, but only for certain Länder or for certain size categories; and finally, “xxxx” for indicators which – apart from possible data gaps for individual municipalities – can be obtained centrally, Germany-wide and without undue effort for all cities and municipalities with 5,000 or more inhabitants, or for all counties and county-free cities.

Validity: Statement for evaluation	
The indicator (or selected data) maps the content of the subgoal or single goal appropriately.	
Evaluation possibilities	
xxx	Fully applicable
xx	Applicable with restrictions
x	Inapplicable

content. Validity is therefore the most important required quality characteristic (although not sufficient on its own) for a potential SDG indicator and, when referring to a particular indicator, was rated with “x” (Inapplicable), “xx” (Applicable with restrictions) or “xxx” (Fully applicable). When selecting indicators from existing sources that referred to higher levels (e.g. expenditure in relation to the national GDP), the indicator was “translated” into municipal level terms in order to allow assessment of its validity from a municipal perspective (i.e. expenditure at municipal level in relation to value creation at municipal level).

There is no minimum standard for indicators with regard to data availability, but it is decisive for determining the indicator type: centrally available data (where the evaluation of data availability is “xxx” or “xxxx”) correspond – if all other minimum standards are met – to a Type I indicator, whereas decentrally organized data (evaluation “x” or “xx”) can only result in a Type II indicator.

Data availability: Statement for evaluation	
The required data are centrally available (at least at county or municipal level) throughout Germany and are collected regularly (at least once every six years). They can be obtained and / or processed without undue expense or effort. In addition, a central data collection concept exists, ensuring that data from a variety of sources are uniform.	
Evaluation possibilities	
xxxx	Central, Germany-wide availability (data from official statistics)
xxx	Central, possibly restricted availability (data from research projects)
xx	Decentral availability (data should be obtainable in a municipality without undue effort or expense)
x	Decentral collection (municipality must collect the data itself)

3.3.3 Data quality

Data quality evaluation relates exclusively to the measurement accuracy of the data on which an indicator is based. It expresses how exact, reliable, complete and representative data sets are. The data quality was only evaluated when data availability was given at least “xxx” rating. By contrast, if no data were available at municipal or county level, no evaluation was made (“x-xxx”), because in many areas, the assessment of potential data quality is not possible without expert knowledge, or heavily dependent on individual implementation at local level. The minimum standard for Type I indicators requires at least data quality “Applicable with restrictions” (“xx”); the project has defined no corresponding minimum standard for Type II indicators. However, we strongly recommend ensuring that data collected or compiled decentrally is of the highest possible quality.

3.3.4 Function

Besides validity, data quality and data availability, the function of the indicator was also evaluated. In general, indicators can perform the following functions: Input indicators enable statements about the use of personnel, financial or material resources to be made. Output indicators refer to the results or products that are achieved or created with the help of a given input. Outcome indicators are used to measure the direct effects of an output on its target groups. Impact indicators are concerned with direct or indirect (pan-)societal effects in the respective SDG or other SDGs.

In our evaluation, a distinction was initially only made between output, outcome and impact indicators (evaluation with “OP/OC/IM”) on the one hand, and input indicators (evaluation with “IP”) on the other. In other words, a distinction was only made on whether an indicator measures the use of resources or at least the direct result of resource use, with the set minimum standard that indicators may not usually measure inputs.

Data quality: Statement for evaluation	
The selected data “measure” the respective indicator precisely and reliably. They are complete or representative, and they are not distorted by any measurement errors.	
Evaluation possibilities	
xxx	Fully applicable
xx	Applicable with restrictions
x	Inapplicable
x-xxx	No evaluation possible

Function: Statement for evaluation	
The respective indicator measures at least the intentional, direct results or products of particular activities that correspond to the applicable SDG subgoal or single goal.	
Evaluation possibilities	
Output/Outcome/ Impact indicator (OP/OC/IM)	The indicator refers to the results and impacts of resource use.
Input/Output indicator (IP/OP)	The indicator refers to the use of a resource. However, the underlying subgoal or single goal explicitly states a change of this resource use as a desired result.
Input indicator (IP)	The indicator refers to the use of a resource. However, the underlying subgoal or intermediate does not explicitly refer to a change of this resource use.

However, the phrasing of the subgoal or single goal on which some indicators were based meant that a clear-cut distinction between input indicators (“IP”) and output/outcome/impact indicators (“OP/OC/IM”) could not always be made. Single goal 7.a.2 (“By 2030, [...] promote investment in energy infrastructure and clean energy technology”) is a clear example. An obvious indicator for mapping this single goal is “Municipal investment in the expansion of renewable energy”. In principle, this indicator refers to the use of assets i.e. an input, but the phrasing of single goal 7.a.2 describes not only an input, but also the desired output. In cases like this, the function of the indicator was rated “IP/OP”, thus expressing the fact that the indicator can be interpreted as an input or output indicator (outcome or impact indicator), depending on one’s viewpoint.

3.3.5 Summary: requirements for SDG indicators

In conclusion, Type I indicators have high or very high validity and can be matched Germany-wide with data from research projects or from official statistics at county or municipal level. Type II indicators are characterised by their high validity, but data that is not available Germany-wide at local level. Both Type I and Type II indicators were only considered as input indicators if the subgoal or single goal on which they were based referred explicitly to this input.

Consequently, 56 Type I indicators and 64 Type II indicators could be identified or developed in this Indicator Catalogue.

3.3.6 Description of SDG indicators

Detailed information in the form of info profiles is provided for all SDG indicators. The main purpose of these info profiles is to help municipal representatives and other users to assess the sustainability relevance of indicators, understand what the indicator expresses, interpret indicator values correctly and recognise interrelationships with other indicators and regional circumstances, where applicable. In detail, the info profiles provide the following information:

(Primary) single goal:

Which single goal is the indicator (primarily) assigned to? – This information is only relevant if the working group has subdivided a subgoal into several single goals.

Relationship to other goals, subgoals and intermediate goals:

Which other goals, subgoals and single goals can the indicator be assigned to? – Possible multiple assignments will appear here.

Relationship to sustainable development dimensions and topics:

Is there a relationship to sustainable development dimensions and topics? – The following dimensions and topics were considered:

- Economy (work and employment, economic structure)
- Ecology (climate and energy, mobility, nature conservation and resource use)
- Social (poverty, housing and living environment, health and care, security, education, culture)
- Governance (administration and council work, budget management, citizen participation and citizen engagement, One-World engagement)

Relationship to agendas or models of sustainable development:

Is there a relationship to frequently occurring sustainability agendas and models? The following agendas and models were considered:

- Inclusive municipality
- Family-friendly municipality
- Environmentally-friendly municipality
- Resilient municipality
- Sharing municipality
- Smart municipality
- Fair municipality
- Cosmopolitan municipality
- Demographically fair municipality
- Climate neutral municipality

Minimum requirements for Type I and Type II indicators		
	Type I indicator	Type II indicator
Validity	Minimum “xx”	„xxx“
Data availability	Minimum “xxx”	No minimum requirement
Data quality	Minimum “xx”	No evaluation
Function	“OP/OC/IM” or “IP/OP”	“OP/OC/IM” or “IP/OP”
Other requirements	-	Not a Type I indicator

(Primary) goal:

Which goal is the indicator (primarily) assigned to?

(Primary) subgoal / single goal:

Which subgoal / single goal is the indicator (primarily) assigned to?

Definition:

How is the indicator defined?

Relevance to sustainability:

- What practical information does the indicator provide and / or what does it represent?
- What is the significance of the indicator with respect to a sustainable municipality?

- Can relationships be found to the various dimensions of sustainable development (economy, ecology, social or governance)?
- Can a relationship to the various principles of sustainable development (“Principle of generational justice”, “Principle of comprehensiveness”, “Principle of global responsibility” or “Principle of joint action”) be established?

Origin:

The line “Origin” provides information on whether the indicator is found in exactly this form, or a very similar form, in a global, European, national or regional indicator catalogue or catalogues. Sources at the following levels were used here:

United Nations

UNSD – United Nations (2019): Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development. https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202019%20refinement_Eng.pdf

SDG 11 – UN Habitat Technical Support (2016): A Guide to Assist National and Local Governments to Monitor and Report on SDG Goal 11+. <https://www.local2030.org/library/60/SDG-Goal-11-Monitoring-Framework-A-guide-to-assist-national-and-local-governments-to-monitor-and-report-on-SDG-goal-11-indicators.pdf>

SDSN – Bertelsmann Stiftung and Sustainable Development Solutions Network (2019): Sustainable Development Report 2019 – Transformations to achieve the Sustainable Development Goals. https://s3.amazonaws.com/sustainabledevelopment.report/2019/2019_sustainable_development_report.pdf

European Union

Eurostat – Eurostat (2019): Sustainable development in the European Union – Monitoring report on progress towards the SDGs in an EU context. <https://ec.europa.eu/eurostat/documents/3217494/9940483/KS-02-19-165-EN-N.pdf/1965d8f5-4532-49f9-98ca-5334b0652820>

Eurostat SDI – Eurostat (2020): EU SDG indicator set 2020. Result of the review in preparation of the 2020 edition of the EU SDG monitoring report. Final version of 16/01/2020. https://ec.europa.eu/eurostat/documents/276524/10369740/SDG_indicator_2020.pdf

Federal Republic of Germany

SDS – The Federal Government (2018): German Sustainable Development Strategy. Update 2018. <https://www.bundesregierung.de/resource/blob/975274/1546450/65089964ed4a2ab07ca8a4919e09e0af/2018-11-07-aktualisierung-dns-2018-data.pdf>

Destatis – Federal Statistical Office (2018): National Data for UN-SDGs – Available national indicators for the UN-Agenda 2030 for Sustainable Development. https://www.destatis.de/EN/Themes/Society-Environment/Sustainable-Development-Indicators/_node.html;jsessionid=C03221D38FAD-C07D41867979530D801D.live722

Federal States (Länder)

Statusindikatoren einer nachhaltigen Entwicklung in Baden-Württemberg. https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/Dokumente/2_Presse_und_Service/Publikationen/Umwelt/Nachhaltigkeit/N-Strategie-Indikatorenbericht-2019.pdf

NRW – Die Landesregierung Nordrhein-Westfalen (2020): Die globalen Nachhaltigkeitsziele konsequent umsetzen – Weiterentwicklung der Strategie für ein nachhaltiges Nordrhein-Westfalen. https://www.nachhaltigkeit.nrw.de/fileadmin/user_upload/Nachhaltigkeitsstrategie_PDFs/NRW_Nachhaltigkeitsstrategie_2020.pdf

Municipalities

Kommune BW – Ministerium für Umwelt, Klima und Energiewirtschaft Baden-Württemberg (2015): NI-Berichte für Kommunen Leitfaden zur Erstellung von kommunalen Nachhaltigkeitsberichten. https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/Dokumente/2_Presse_und_Service/Publikationen/Umwelt/Nachhaltigkeit/Leitfaden_N-Berichte_fuer_Kommunen.pdf

Kommune NRW – Landesarbeitsgemeinschaft Agenda 21 NRW e.V. (2018): Nachhaltigkeitsbericht NRW kommunal. https://www.lag21.de/files/default/pdf/Themen/NN/NRW-WKOMMUNAL_2018.pdf

LHS – Landeshauptstadt Stuttgart (2019): Lebenswertes Stuttgart – Die globale Agenda 2030 auf lokaler Ebene. Bestandsaufnahme auf Grundlage von Indikatoren zur Abbildung der SDGs. https://www.bertelsmann-stiftung.de/fileadmin/files/projects/Monitor_sustainable_municipality/Lebenswertes_Stuttgart.pdf

MoNaKo – Bertelsmann Stiftung / Deutsches Institut für Urbanistik (2016): Monitor Nachhaltige Kommune. https://www.bertelsmann-stiftung.de/fileadmin/files/Projekte/Monitor_Nachhaltige_Kommune/Monitorbericht_Teil-1_Druck_final.pdf

KEpol – Bertelsmann Stiftung, Engagement Global / Servicestelle Kommunen in der Einen Welt (2020): SDG-Indikatoren für kommunale Entwicklungspolitik – Indikatoren für den entwicklungspolitischen Beitrag von Kommunen zu den Sustainable Development Goals. https://www.bertelsmann-stiftung.de/fileadmin/files/Projekte/Monitor_Nachhaltige_Kommune/2020-08-18_SDG-Indikatoren_fuer_kommunale_Entwicklungspolitik_final.pdf

Urban Audit – KOSIS – Gemeinschaft Urban Audit (2019): Das deutsche Urban Audit – Lebensqualität: Erschließung neuer Datenquellen. Mannheim. https://ec.europa.eu/eurostat/cache/metadata/Annexes/urb_esms_de_an11.pdf

Validity:

How suitable is an indicator for representing a subgoal or single goal?

Function:

Is it an output / outcome / impact indicator, an input / output indicator or an input indicator?

Statistical interrelationships (Type I indicators only):

- With which other indicators / regional factors could an interrelationship exist?
- Why could this interrelationship exist?

General conditions (Type I indicators only):

- Is the value given for the indicator “predetermined” by certain regional circumstances?
- Does the indicator show particularly high or low value for particular reasons (e.g. in large cities / small towns, in Eastern Germany / Western Germany etc.)?

Calculation:

What formula is used to calculate the indicator?

Unit:

Which unit of measurement is used to measure indicator values?

Assertion:

What assertion does the indicator make?

Indicator type:

Is the indicator Type I or Type II? – In the case of a Type I indicator, the data on which it is based are described and evaluated below.

Data source (Type I indicators only):

From what source can the data be obtained?

Data availability (Type I indicators only):

In what form are the data available?

Data quality (Type I indicators only):

What is the quality of the data used to create the indicator? Here, questions such as those below are relevant:

- Is the data from a reliable source?
- Is it readily apparent how the data was created?
- Do the data give exact values or only a range of values?
- Are the data representative?

Collection level (Type I indicators only):

At what level are the data available?

Collection period (Type I indicators only):

For what years are the data available?

Collection interval (Type I indicators only):

At what intervals are the data collected?

3.4 Collection and analysis of SDG Indicators

3.4.1 Collection of indicator values

Existing data from official statistics and other data sources were collected for the 56 Type I indicators from the proposed SDG Indicator Catalogues. To the extent possible, data was collected for cities and municipalities with more than 5,000 inhabitants, and for all counties and county-free cities. Data were also collected when they were only available at county level, but not at municipality level.

At the time of data collection, the Bertelsmann Stiftung’s “Wegweiser Kommune” already provided data for many Type I indicators, but not for other indicators. The corresponding additional data were generally collected from the GENESIS database (regional statistics) of the Federal and State Statistical Offices or the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR)’s database INKAR. Examples of further data sources used for calculation of the indicator values are the Institute for Resources Management at the University of Gießen, and the IÖR Monitor of the Leibniz Institute of Ecological Urban and Regional Development.

As the Bertelsmann Stiftung’s “Wegweiser Kommune” provides data from 2006 onwards, the data was collected between 2006 and 2018. However, at the time of publication the necessary datasets for 2018 were only available for some of the 56 Type I indicators. In these cases, only data up to the latest available reporting year was collected. The overview in Chapter 5.2 provides information on the data source, available spatial level and the available period for data provision at the time of publication.

As an example, data at county and county-free city level for 2017 were used for the analyses. 2017 was selected as it was the latest year for which data for (almost) all indicators were available at the time of evaluation. Thus, it was possible to draw on a total of 50 indicator data sets for the correlation analysis described in the following chapter. In the case of indicators for which there were no values for 2017, data from the available year which was closest in time were used. This applies to the indicator “Proportion of unfragmented habitats”, for which the latest data set was from 2016, and the indicators “Landscape quality”, “School dropout rate” and “School dropout rate – foreigners”, all of which were analysed using data from 2018.

3.4.2 Correlation analysis

A correlation analysis is the easiest way to gain a first impression of interrelationships between the various indicators. A correlation matrix is usually a tabular representation of the linear relation between a given pair of indicators. The values of a matrix of this kind are known as correlation coefficients. The value range of a correlation coefficient lies between -1 and +1. Positive correlation coefficient values indicate that there is a positive linear relation between the indicators. When the value of one indicator increases, the other indicator of the pair also tends to increase in value. Negative values

indicate a negative linear relation between the indicators in question. In this case, higher values of one indicator tend to be associated with lower values of the other indicator. If the “extreme values” -1 and +1 are present, the correlation coefficient indicates the “perfect” positive or negative linear relation between the indicators. An example of this kind of “perfect” relation is when indicators are used between which the only difference is the unit of measurement. If a correlation coefficient has the value 0, there is no linear relation of any kind between the paired indicators. The following classification by Cohen (1992) is used to assess effect size in the absence of perfect correlations, and to evaluate the significance of correlation analysis results:

$r = 0.1 / -0.1$ corresponds to a small effect

$r = 0.3 / -0.3$ corresponds to a medium effect

$r = 0.5 / -0.5$ corresponds to a large effect

As a high number of indicators are investigated here, what is known as a “schemaball” (cf. Komarov 2020) was used to illustrate statistical interrelationships. A schemaball is a visualisation of the correlation matrix, in which connecting lines / nodes with colours of varying intensity are plotted between indicators arranged in a circle. Only results with a correlation coefficient ≥ 0.5 or ≤ -0.5 are displayed in the respective schemaball, as the relationships can be classified as large-effect, thus ensuring that the visualisation is clear. The more intense the colour of the connecting line, the higher the correlation coefficient – and therefore also the statistical relationship between the indicators.

Correlations do not describe a cause-and-effect relationship i.e. they do not show causal relationships between indicators. If there is a positive correlation coefficient, this does not mean that the increase of one indicator causes the other indicator to increase, but rather that in many cases, correlations are caused by third-party characteristics. Of the many examples which illustrate the difference between correlation and causality, the relationship between birth-rate and the number of storks in a region is often mentioned. The reason for the positive correlation of the two values can be found in the level of industrialisation; for many years, both storks and families preferred to settle in rural areas. If correlations are discovered, they are therefore a starting point for reflection on the reasons behind the relationship between indicators. In addition to the correlation analysis, further statistical data analyses were conducted; these are published separately.

3.5 Genesis of the SDG Indicator Catalogue

The result of the relevance check was 163 subgoals or single goals that were to be the focus of the SDG Indicator Catalogue. These, in turn, were the basis for the creation in three stages of what are now the 120 SDG indicators briefly described below.

3.5.1 Development and selection process in several project phases

First, indicators were identified in a comprehensive selection process covering all 17 SDGs, using indicator sets at global, European and national level, as well as two state level indicator catalogues and several collections of municipal sustainability indicators. The result of this broad approach to selection was the first edition of the SDG Indicator Catalogue with 47 core indicators; for a detailed description of the methodological process and the corresponding sources, please see the original publication (Assmann et al. 2018).

Second, in 2019 the SDG indicators were specifically developed in topic areas and perspectives which were prioritised after evaluation of the first SDG Indicator Catalogue. In the first development module, the Catalogue was extended by adopting additional indicators from Germany’s Sustainable Development Strategy (SDS). In individual cases, some indicators that were already included, but whose content deviated slightly from the SDS, were adapted to facilitate the vertical integration of sustainability reporting at municipal and national level. Additional indicators from the respective sustainability strategies of Baden-Württemberg and North Rhine-Westphalia were also adopted where appropriate. The purpose of the second development module was to investigate the Type II indicators for which existing data from open sources or research projects could be provided – with the result that a few Type II indicators could now, together with data, also be included in the corresponding data portals. In the third development module, the perspective of municipal development policy, was thoroughly revised, with both the fundamental relevance check and the Indicator Catalogue itself being added to (Knipperts 2020). Further development modules saw the targeted expansion of selected topics, as users of the first SDG Indicator Catalogue had requested prioritised improvements in these areas. The main focus here was on urban and county-level developments (especially the provision of housing, land management and mobility), climate protection, care provision and digitalisation.

Subsequently, further development of various topics on a broader scale took place in 2020. Firstly, research into additional indicators in a wide variety of SDG subgoals was conducted, aimed at investigating concrete indications from various events in 2019 and 2020 – such as the feedback from a discussion event with municipal representatives and other potential SDG indicator users, from Advisory Committee meetings on the project “Agenda 2030 – Nachhaltige Entwicklung vor Ort” and impulses from the working group itself.

Secondly, the sources cited in the first version of the Catalogue were checked for modifications or new elements, so the current Indicator Catalogue is based on the following sources: Indicator framework for the 2030 Agenda, at European level [EUROSTAT], at national level the German SDS, as an example at Länder level the Indicator Catalogues of North Rhine-Westphalia and Baden-Württemberg, and at municipal level the indicator compilations of the Landesarbeitsgemeinschaft 21 (LAG 21) and [the Ministry of the Environment, Climate Protection and the Energy Sector

Baden-Württemberg] and, for example, the Sustainability Report of the City of Stuttgart. A complete list of sources can be found in Chapter 3.3.6 under “Origin”.

Finally, entirely new Type II indicators were developed for the first time to supplement the sources drawn upon with existing indicators in the current catalogue: the five indices, which use encoding and summarising to distil a collection of qualitative information about a particular action field (“Yes/No questions”) into a quantitative indicator: the Digitalisation index, the Sustainable Procurement index, the Corruption Perception index, the Climate Protection index and the Adaptation to Climate Change index. Furthermore, new Type II indicators resulting from concrete feedback from the municipalities and research on the 2020 Monitor Report “Climate and Energy” were added.

3.5.2 Remarks on the proposed SDG Indicator Catalogue

Municipalities” found the decision to create an Indicator Catalogue that would give equal coverage to the entire range of the 17 SDGs justified, as all 17 SDGs are considered equal in the context of the 2030 Agenda. We would also like to explicitly underline the modular construction and nature of the proposed SDG Indicator Catalogue here. Every municipality is completely at liberty to focus on single goals and challenges, and to adapt its own indicator catalogue accordingly.

Unfortunately, coverage of all 17 SDGs by indicators that are available throughout Germany is still not possible, so the current catalogue only contains Type II indicators for SDG 13 (Climate protection and adaptation to climate change) and SDG 17 (Partnerships for the Goals). This, in itself, is evidence of the insufficient coverage of these goals by official statistics and data from open sources or research projects. The working group sees a need for urgent action to ensure that – as far as possible – municipal efforts in these areas are measurable and comparable throughout Germany and at all levels in future.

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