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Review of the implementation of the programmes of work 2023 and 2024:**Voluntary Local Reviews: measuring progress towards the Sustainable Development Goals at the local level****Regional guidelines for the Development of Voluntary Local Reviews****Note by the secretariat***Summary*

This document contains an updated version of the Guidelines for the development of Voluntary Local Reviews in the ECE Region. The document is submitted in accordance with A/78/6 (Section 20) and ECE/HBP/219, para. 58 (c).

It was prepared by the secretariat at the request of the Committee on Urban Development, Housing and Land Management at its eighty-fourth session (Geneva, 4–6 October 2023) and in agreement with the Committee Bureau. The document updates the previous, second edition of the Guidelines (ECE/HBP/2022/6) based on the experience on the development of voluntary local reviews by cities and feedback from relevant stakeholders and United Nations agencies.

The present Guidelines aim to provide cities in the region with a practical and action-oriented framework for developing Voluntary Local Reviews, to better support cities in tracking their progress towards the achievement of the United Nations Sustainable Development Goals of the 2030 Agenda at the local level. It does so by following a “hands-on” approach to the development of the Reviews, outlining concrete steps and best practices.

The Committee is invited to approve the updated Guidelines and their subsequent publishing as an official United Nations publication.

I. Introduction

1. The 2030 Agenda for Sustainable Development (2030 Agenda) adopted by the United Nations Member States in 2015¹ outlines a broad range of forward-looking global goals known as the United Nations Sustainable Development Goals (SDGs). Comprised of 17 goals, 169 targets and 231 indicators,² the SDGs provide a roadmap for a more sustainable and equitable future. As part of its follow-up and review mechanisms, the 2030 Agenda encourages Member States to "conduct regular and inclusive reviews of progress at the national and sub-national levels that are country-led and country-driven".³ This mechanism, known as Voluntary National Review, serves as a basis for regular reviews⁴ at the annual meeting of the United Nations High-Level Political Forum on Sustainable Development in New York.

2. As the world's population becomes increasingly urban, cities play a crucial role in achieving the 2030 Agenda. The growing recognition of the need to monitor progress on SDG implementation not just at national level but also at the regional and local levels, gave rise to the development of Voluntary Local Reviews.⁵ These reviews have become an important tool for local and regional governments to localize the SDGs. That localization is a process that implies translating, defining, implementing, and monitoring the goals and targets of the 2030 Agenda within the local territories. Voluntary Local Reviews complement Voluntary National Reviews, contribute to enhancing coordination across subnational entities and reinforce the commitment to local action.

3. Regularly updated lists of Voluntary Local Reviews are available online at the respective websites of the United Nations Department of Economic and Social Affairs (DESA)⁶ and the United Nations Human Settlements Programme (UN-Habitat).⁷ In 2017, some of the first local and regional governments to publish Voluntary Local Reviews were from the United Nations Economic Commission for Europe (ECE) region: the Autonomous Community of Basque country (Spain) and New York City. Since then, many local and regional governments in the ECE region have developed their Voluntary Local Reviews, some of them having several editions already (see Table 1 below); many others are in the process of developing their first ones. These existing Voluntary Local Reviews can provide an important source of learning and inspiration for other cities and municipalities. Varied approaches and methodologies are used to develop Voluntary Local Reviews as there is no

¹ Resolution 70/1. Available at:

https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

² The 2030 Agenda global framework comprises 231 unique indicators (i.e., excluding those appearing under more than one target). The number of indicators increases to 247 if those appearing under more than one target are included. A complete list of indicators is available at:

<https://unstats.un.org/sdgs/metadata/>. The indicators are reviewed and refined annually by the UN Statistical Commission. Further details on this are available at: <https://local2030.org/library/tools/monitoring-and-evaluation>.

³ Resolution 70/1, Transforming our world: the 2030 Agenda for Sustainable Development, para. 79. Available at:

https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

⁴ DESA "Voluntary National Reviews Database." More information available at:

<https://sustainabledevelopment.un.org/vnrs/>.

⁵ Up-to-date lists of Voluntary Local Reviews by local and regional governments across the globe are available at the UNDESA website (<https://sdgs.un.org/topics/voluntary-local-reviews>) and at the online VLR platform of UN-Habitat (<https://unhabitat.org/topics/voluntary-local-reviews>).

⁶ DESA "Voluntary Local Reviews. Reports from local Authorities". Available at:

<https://sdgs.un.org/topics/voluntary-local-reviews>.

⁷ UN-Habitat "Voluntary Local Reviews." Available at: <https://unhabitat.org/topics/voluntary-local-reviews>.

specific format to be followed. Some cities use the structure of a Voluntary National Review as a reference for developing their Voluntary Local Reviews, others adopt their own formats.⁸

4. To support local and regional governments in preparing Voluntary Local Reviews, several guidance documents have been developed by international organizations and city networks (see annex I to these Guidelines). ECE published the first version of the Guidelines for the Development of Voluntary Local Reviews in the ECE region in 2021,⁹ with a second, updated, edition made available in 2022.¹⁰ At its eighty-fourth session (Geneva, 4–6 October 2023), the ECE Committee on Urban Development, Housing and Land Management (the Committee) requested the ECE Secretariat to update the 2022 Guidelines based on the feedback received from pilot cities, experts, stakeholders, and partner organizations. This was prompted by a growing interest in Voluntary Local Reviews in the ECE region and the need for a more consistent and coordinated approach to preparing them.

5. The present third edition of the Guidelines for the Development of Voluntary Local Reviews in the ECE Region provides a more ‘hands-on’, action-oriented overview on the processes of preparing Voluntary Local Reviews, while taking into consideration the diversity of ECE member States. The Guidelines draw on experience of cities in the region, particularly on the outcomes of the ECE workshops on Voluntary Local Reviews¹¹ and on subsequent knowledge exchanges with relevant stakeholders. They were prepared by the secretariat with support from experts and relevant partner organizations, including UN-Habitat. Furthermore, the Guidelines were strengthened with the experience gathered under the United Nations Development Account (UNDA) 14th tranche project “Voluntary Local Reviews: Evidence for greener, resilient and sustainable urban recovery in Eastern European and Central Asian countries in transition”, led by UN-Habitat, and co-implemented by ECE, DESA, and United Cities and Local Governments (2022–2025). The Guidelines were also informed by the outcomes of the meetings of the Forum of Mayors that ECE convenes annually to support cooperation and knowledge-sharing among cities and to promote sustainable development and multi-stakeholder governance.¹² In addition, the Guidelines reference the “global action-oriented VLR methodology” developed by UN-Habitat and United Cities and Local Governments, where the concept of action-oriented reviews was first introduced.¹³ The Guidelines were prepared through a collaborative and participative process to maximize their relevance and impact in the ECE region.

Table 1

Examples of cities and territories in the ECE region that have developed VLRs (as of April 2024)

Country	Local or regional government or regional government
Albania	Shkodra (2020, 2021)
Belgium	Ghent (2020, 2021, 2022, 2023); Wallonia (2017, 2019, 2020)
Bosnia and Herzegovina	Bijeljina (2023)
Canada	Thunder Bay (2022); Kelowna (2021); Winnipeg (2018, 2020, 2021)

⁸ Institute for Global Environmental Strategies. State of the Voluntary Local Reviews 2020 —Local Action for Global Impact in Achieving the SDGs. Available at: https://www.iges.or.jp/en/publication_documents/pub/workingpaper/en/10803/State+of+the+Voluntary+Local+Review+2020+-+Final.pdf.

⁹ ECE/HBP/2021/4. Available at: https://unece.org/sites/default/files/2021-08/ECE_HBP_2021_4-2109985E.pdf.

¹⁰ ECE/HBP/2022/6, available at: <https://unece.org/sites/default/files/2023-03/UNECE%20VLR%20guidelines%20ENG.pdf>

¹¹ UNECE Committee on Urban Development, Housing and Land Management, Activities of the Committee on Urban Development, Housing and Land Management since its eighty-second session. ECE/HBP/2022/5. Available at: https://unece.org/sites/default/files/2022-08/ECE_HBP_2022_5-2209604E.pdf.

¹² <https://forumofmayors.unece.org/>.

¹³ https://unhabitat.org/sites/default/files/2024/02/action-oriented_vlr_methodology.pdf

Country	Local or regional government or regional government
Denmark	Gladsaxe (2021, 2022, 2023)
Finland	Helsinki (2019, 2020, 2021, 2023); Vantaa (2021, 2023); Tampere (2022); Turku (2020, 2022); Espoo (2020); Joensuu (2023)
France	Besançon (2018, 2019, 2020) ; Niort (2018, 2019, 2020) ; Normandie (2020) ; Occitanie (2020) ; Pays de la Loire (2020) ; Provence-Alpes-Côte d’Azur (2021)
Germany	Kiel (2022); Dortmund (2022); Bonn (2020, 2022); Düsseldorf (2022); Stuttgart (2019; 2020, 2021, 2023); Hannover (2020); Frankfurt am Main (2020); Mannheim (2019), North Rhine-Westphalia (2016); Bad Köstritz (2023)
Greece	Skiathos (2020); Agios Dimitrios (2023)
Italy	Lombardy (2022); Rome (2022); Genova (2022); Reggio Calabria (2022); Lazio (2022); Bari (2022); Emilia-Romagna Region/Bologna (2022); Sardinia (2022); Liguria (2022); Abruzzo-, Marche-, Umbria Region (2022); Messina (2022); Florence (2021); Puglia Bari (2022)
Kazakhstan	Almaty (2024)
Netherlands	Utrecht (2023); Amsterdam (2022)
Norway	Bergen (2020, 2021, 2023); Oslo (2023); Asker (2021); Viken (2020, 2021); Romsdal (2021); Trondheim (2021)
Portugal	Mafra (2023); Matosinhos (2023); Cascais (2020, 2022); Braga (2019)
Spain	Madrid (2021, 2023); Basque Country (2017, 2018, 2019, 2020, 2021, 2022, 2023); Vitoria-Gasteiz (2022); Barcelona (2019, 2020, 2021, 2022); Córdoba (2020); Jaén (2019, 2020); Alhaurin De La Torre (2019); Malaga (2018, 2019, 2020, 2021, 2022); Valencia (2016, 2018); Castilla-La Mancha (2019); Catalonia (2018)
Sweden	Stockholm (2021); Uppsala (2021); Helsingborg (2021); Malmö (2021); Gothenburg (2019)
Türkiye	Fatih (2023); Marmara (2022); Avcılar (2022); Karatay (2021); Izmir (2021); Sultanbeyli (2021); Istanbul (2022)
Ukraine	Lviv (2023)
United Kingdom of Great Britain and Northern Ireland	Bristol (2019, 2022); London (2021); Scotland (2020, 2021); Liverpool (2020); Wales (2019); Canterbury (2019)
United States of America	Hawaii (2020, 2023); Los Angeles (2019, 2021); Orlando (2021); Pittsburgh (2020); New York City (2018, 2019)

II. The rationale for developing a Voluntary Local Review

6. Municipalities and other local and regional governments are driven by multiple factors when deciding to prepare a Voluntary Local Review. They commonly indicate, for example, that a Voluntary Local Review:

(a) Supports efforts to localize and monitor SDG progress. A key objective of Voluntary Local Reviews is to provide an evidence-based assessment of the local area’s progress towards achieving the SDGs. This includes assessing the effectiveness of existing measures and policies in advancing the SDGs, as well as identifying areas for further

improvement. Voluntary Local Reviews serve as a guide for developing new local actions to accelerate the achievement of the SDGs;

(b) Demonstrates leadership in sustainability governance. Voluntary Local Reviews provide the opportunity for local and regional governments to showcase leadership by voluntarily participating in the review process measuring the SDG implementation. This signals their commitment to sustainable, more transparent practices and increased accountability;

(c) Provides opportunities for greater visibility in national and international stages. Local and regional governments that prepare Voluntary Local Reviews spotlight their aspirations and can build new international relationships and expand their networks, including through United Nations-led initiatives and platforms;

(d) Contributes to a more holistic approach and greater policy coherence. Preparing Voluntary Local Reviews is an opportunity to revisit local strategies and policies, allowing for a more holistic perspective that bridges different governance spheres.¹⁴ This process also supports SDG target 17.14 – “Enhance policy coherence for sustainable development”, highlighting the importance of an integrated approach to the indivisible economic, social and environmental dimensions of sustainable development;¹⁵

(e) Supports multi-stakeholder collaboration. Preparing Voluntary Local Reviews provides an opportunity to mobilize different stakeholders for collective action and enhance their awareness, acceptance, and support of local initiatives;

(f) Supports multilevel governance. The process of preparing a Voluntary Local Review can foster stronger relationships between different levels of government by requiring coordination between national, subnational and local governments for effective implementation and monitoring of SDGs. The Voluntary Local Review process enables political dialogue, knowledge-sharing, and cooperation across governance spheres. It complements Voluntary National Review processes, offering opportunities for the alignment of development strategies, plans, policies and initiatives;

(g) Creates an advocacy tool to effectively implement local strategies. Local governments that have prepared Voluntary Local Reviews use them as important advocacy tools. Voluntary Local Reviews can, for example, serve as evidence when requesting funding and resources from international donors or the national government. They can also be used to mobilize local collective action towards achieving common goals;

(h) Enhances sustainability assessment systems. Voluntary Local Reviews offer local governments opportunities to initiate or strengthen their sustainability assessment systems. To prepare a Voluntary Local Review, local governments need to establish relationships, implement effective systems and develop necessary skills to collect relevant data that will not only benefit the locality during the review process, but also have lasting positive impacts.

III. Key principles for developing Voluntary Local Reviews

7. Based on the experiences of local and regional governments that have developed Voluntary Local Reviews and broader international practice, the process of preparing a

¹⁴ A review of the national arrangements for implementing the 2030 Agenda highlights the whole-of-government approach as a critical requisite for ensuring policy coherence. DESA (2018) Compendium of National Institutional Arrangements for implementing the 2030 Agenda for Sustainable Development. Available at: <https://sustainabledevelopment.un.org/content/documents/22008UNPAN99132.pdf>.

¹⁵ For a detailed discussion of the principle of policy coherence of the 2030 Agenda, see, for example, OECD publications: Policy Coherence for Sustainable Development 2018: Towards Sustainable and Resilient Societies; Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence; Driving Policy Coherence for Sustainable Development. Accelerating progress on the SDGs (2023).

Voluntary Local Review should be guided by a number of key principles. It is recommended for the process to be:

(a) Locally contextualised. Given the diversity of local and national conditions and development levels across the ECE region, not all targets under the SDGs are applicable universally to all cities and municipalities alike. Instead, the key is rather to align the global SDGs with the specific local needs, capacities and resources;

(b) Inter-connected. The establishment of effective coordination mechanisms between the various levels of government is fundamental for integrating Voluntary Reviews at the national, subnational, and local levels. Each level of government has its own responsibilities and capacities in implementing the SDGs, but their roles and deliverables towards this end are interconnected;

(c) Participatory. It is important to design the process of Voluntary Local Review preparation to be conducive to effective partnerships among the different stakeholders. The process should be transparent, collaborative and participatory, involving consultation of international, national and local stakeholders with a view to maximizing the consideration of relevant insights and expertise. Ultimately this should lead to the endorsement and the ownership of the Voluntary Local Reviews by all interested parties;

(d) User-centric. The Voluntary Local Reviews should be prepared with end users in mind, to ensure that the final document is easy to understand, and useful for a broad range of stakeholders, including policymakers and citizens. Excessive use of technical language should be avoided;

(e) Evidence-based. The emphasis should be on identifying relevant indicators and benchmarks to measure progress against specific local issues associated with the SDGs. While aspiring to comprehensively cover all SDGs is important, Voluntary Local Reviews may need to prioritize selected measures and strategies, due to resource or data limitations;

(f) Leaving no one behind. The principle of “leaving no one behind” is central to all SDGs. The disaggregation by age, gender, ethnicity and/or disability status and geography of data and the associated analysis can help local and regional governments to assess the degree of inclusivity of policies;

(g) Forward-looking. The Voluntary Local Reviews should not merely record progress and achievements to date, but also identify weaknesses and challenges in addressing SDGs as well as further action required to address them. Thus, in cases of low performance against a certain SDG target or a reviewed area, it is crucial to identify and analyse the key factors undermining progress. This analysis should then inform the development of targeted measures and strategies to address the challenges in question. The Voluntary Local Reviews should contain specific, action-oriented recommendations.

IV. Workflow and methodology

8. Once the local or regional government has made the political decision to initiate the development of a Voluntary Local Review, the preparatory process entails several organizational tasks, which are outlined in sections IV. A–H below.

A. Managing and coordinating the preparatory process

9. One of the first key steps is to set up coordinating mechanisms which typically consist of bodies, such as the following:

(a) The steering board. This could be a high-level political body to which the project manager for the preparation of the Voluntary Local Review will report and which should have sufficient decision-making power to allocate workload and resources. Ideally, the steering board should be chaired by the mayor or the chief executive of the municipality or the leader of the local council. In consultation with the project manager, the steering board should approve the workflow and key focus areas for the Voluntary Local Review;

(b) Project manager(s). The steering board should appoint an agency that would act as a main coordinating body for the preparatory process, such as a municipal department

or another organization. According to good practice, the coordination functions are effectively fulfilled when assigned to agencies that have the necessary capacities, financial resources and political will. The project managing agencies assume the role of facilitators and help solicit input and feedback from stakeholders. The project managers act as the lead authors of the Voluntary Local Review and are also responsible for harmonizing and editing the contributions from the others.

(c) A working group. The working group is the main team that works alongside the project manager(s) on the drafting of the Voluntary Local Review. It is typically chaired by the project manager(s) or a representative of the steering board. Membership of the working group should be comprised of competent and motivated experts. The practice in this regard varies, some working groups consist of a broad variety of representatives from local and regional governments, academia, business community and civil society, while others comprise solely of government representatives in charge of collecting information from their respective areas and operations (See Box 1 below). Each of the key sections of the Voluntary Local Review could be assigned to focal points/ lead authors primarily responsible for its drafting. It is important to have a clear distribution of responsibilities among the members of the Working Group, but it is equally important to ensure a collaborative and inclusive working environment where the members of the group can discuss and decide on important issues, as well as comment on and coordinate the various sections of the review.

(d) Advisory group(s). Larger advisory group(s) can serve as a consultative body to support the working group and to provide additional insights and information. The process of developing the Voluntary Local Review can benefit from broad-based consultations, aimed at soliciting the views of citizens, different departments of local government and representatives of academia, market support institutions and civil society. An initial exercise of stakeholder mapping can help identify relevant stakeholders for insights and participation in the advisory groups. Advisory groups can first focus on reviewing specific themes of the Voluntary Local Reviews and later review the overall progress. The work of the advisory groups can be organized through workshops; individual members of the advisory groups can also be approached for expert information and feedback.

Box 1.

Examples of local coordination mechanisms

- In **Helsinki** (Finland), the City Executive Office carried out the Voluntary Local Review by collecting inputs from different city divisions. The working group for the development of the Voluntary Local Review consisted of representatives of each major department of the local government and had a core project management team which acted as a coordinating body.
- In **Bristol** (United Kingdom), the Voluntary Local Review was jointly developed by the University of Bristol and the Bristol SDG Alliance (an informal network that includes individuals from the city's anchor institutions, including universities, City Council officials, major businesses, and voluntary organizations).
- In the case of **Espoo** (Finland), the mayor's office launched a call for articles to validate and enrich the quantitative analysis, as well as case studies to demonstrate how the city is collaboratively achieving the SDGs. The call was open to Espoo's units, the city's corporate units, and partners from industry and other sectors of society.
- In **Barcelona** (Spain), after the publication of the first Voluntary Local Review in 2019, coordinated by the Technical Board for Strategic Planning, a commissioner for the 2030 Agenda was nominated by the City Council. The commissioner has supported the development of the subsequent editions of the Voluntary Local Review and is tasked with fostering cross-sector coordination between public departments and strengthening alliances with academic stakeholders, the private sector and citizens.

B. Deciding on the scope and format

10. The Steering Board in cooperation with the project management teams should initially decide on the format and the scope of the Voluntary Local Review.

11. As the Voluntary Local Review provides an opportunity for ‘auditing’ the city’s progress in different areas related to SDGs, the work on it should be cross-checked with existing plans, policies and initiatives, such as city or regional programmes, local development strategies and spatial plans. These are typically documents that have undergone considerable deliberations in their preparation and should inform the preparations of the Voluntary Local Review.

12. To that end, it is recommended to begin by creating a matrix that outlines linkages between the 17 SDGs and the municipality’s specific programmes, targets and visions that align with these goals.¹⁶ This can help identify the municipality’s policy priorities as well as any specific objectives for 2030 (in line with the current timeline of the 2030 Agenda) and be helpful in indicating possible linkages even when the SDGs and the municipality’s programmes and targets are not fully aligned. In cases where the municipality has no policies in place for implementing certain SDGs, the steering board will need to decide whether to include these SDGs in the Voluntary Local Review analysis and develop further action plans. This should be done transparently, in consultation with stakeholders, and in such a way that avoids any biases and ensures that all key topics are systematically addressed.

13. The consequent development and content of the Voluntary Local Review follows one of the following two models (which will also shape how the publication is organized):

(a) The Voluntary Local Review considers each of the SDGs (all 17 or selected SDGs), one by one, analysing the local area’s progress in relation to each of them and evaluating how the city’s/municipality’s programmes contribute to addressing them;

(b) The Voluntary Local Review is structured according to the municipality’s specific policy domains and strategies (such as, economy, environment, culture, society and their specific dimension) and maps how these domains are connected with, and help progress with different global SDGs (Box 2).

14. The expected length of the review should also be predetermined during this initial stage. The majority of Voluntary Local Reviews, especially those that are prepared for the first time, are relatively focused, strategic and analytical rather than overly detailed, descriptive or technical in nature.

15. Reviewing existing Voluntary Local Reviews from other cities and locations may help the coordinating bodies to decide on the most relevant and useful approach.

¹⁶ It is further recommended to evaluate the municipality’s specific programmes, targets and visions to ensure they are aligned with national goals and initiatives.

Box 2

Examples of the scope and the format of Voluntary Local Reviews

- The city of **Bonn** (Germany) opted to streamline the 17 SDGs into nine, representing a synthesis of the SDGs and municipal areas of competence, which are reflected in the responsibilities of the political committees in the municipalities.¹⁷
- The city of **Madrid** (Spain) prioritizes certain SDGs such as SDG 3, 8, 11, 6, 12 and 13, focusing on health, economic growth, sustainable cities, water management, responsible consumption, and climate action.¹⁸
- The city of **Amsterdam** (The Netherlands) developed various policy and SDG related documents, including the “city doughnut strategy”. This serves as a compass for localizing SDGs, emphasizing the 5 Ps (people, planet, prosperity, peace, and partnership). In creating a blueprint for integrating SDGs, the city identifies four key layers (local-social, local-ecological, global-ecological, and global-social) to guide the city’s alignment with the SDGs.¹⁹
- The city of **Stuttgart** (Germany) reviewed all 17 SDGs, one by one, in its Voluntary Local Review, guided by the SDG Indicators for municipalities as developed at the national level in Germany (<https://sdg-portal.de/en/>).²⁰
- The city of **Helsinki** (Finland) bundled different SDGs together to focus on the city’s strategic themes: Environment, People, Culture and Economy.²¹

C. Collecting indicators and data

16. Once the scope and format of the Voluntary Local Review is defined, the working group should identify which sources of information (quantitative and qualitative) will be required for completing the review. The use of available databases should be leveraged creatively for identifying any suitable indicators and benchmarks. Additionally, a strategy is needed to guide the collection of new data that will support the analysis. It is crucial to recognize that data collection processes should occur in parallel with the analysis. Necessary protocols and platforms can also be established to ensure that relevant data collection does not cease after the finalization of the Voluntary Local Review. This data should continue to be collected during the post-publication period in order to inform future SDG monitoring and analysis, including any revisions to the Voluntary Local Review.

1. Quantitative indicators and data

17. Following the adoption of the 2030 Agenda in 2015, the United Nations Inter-Agency and Expert Group on SDG Indicators developed a quantitative set of global indicators to review national progress towards achieving SDGs.²² The framework includes 231 statistical indicators, which ideally, should be used at the local level too. However, access and availability of reliable data at the local level represent a major challenge. Available indicators provided by statistical offices are not always disaggregated at the city level, and many of them are not disaggregated by demographic factors (such as, income, gender, age, disability) to provide sufficient granularity for measuring and benchmarking SDGs at the local level. The available data may also be scattered across different agencies.

¹⁷ https://sdgs.un.org/sites/default/files/vlrs/2022-11/vlr_bonn_2022.pdf

¹⁸ https://unhabitat.org/sites/default/files/2023/03/madrid_2023_en.pdf

¹⁹ https://sdgs.un.org/sites/default/files/vlrs/2022-12/vlr_amsterdam.pdf

²⁰ https://sdgs.un.org/sites/default/files/vlrs/2024-04/stuttgart-a_livable_city_1.pdf

²¹ <https://sdgs.un.org/sites/default/files/vlrs/2023-06/helsinki-from-agenda-to-action-2023.pdf>

²² On 6 March 2015, at its forty-sixth session, the United Nations Statistical Commission created the IAEG-SDGs, composed of member States and including regional and international agencies as observers. The IAEG-SDGs was tasked with developing and implementing the global indicator framework for the goals and targets of the 2030 Agenda. The framework was subsequently adopted by the General Assembly on 6 July 2017 and is contained in the Resolution adopted by the General Assembly on Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development (A/RES/71/313) available at <https://undocs.org/A/RES/71/313>.

18. The lack of specific indicators should not, however, discourage the municipality from preparing a Voluntary Local Review. In practice, the majority of these indicators are not used in Voluntary Local Reviews – partly due to the lack of data, but also because Voluntary Local Reviews address only a fraction of targets identified under each of the 17 SDGs. Often, the Voluntary Local Review outlines its own set of indicators, which may diverge from the SDG targets/indicators, but are still consistent with their broad context and purpose. While this approach makes different Voluntary Local Reviews less comparable between each other, it aligns with the tailor-made principle of using Voluntary Local Reviews to best adapt to the local conditions.

19. The work on Voluntary National Reviews and Voluntary Local Reviews stimulates progress towards developing new or existing data-collection systems and platforms specifically tailored for SDG reporting.

Box 3

Collecting SDG indicators at the local level

- **Avcilar** (Türkiye) serves as a notable illustration of integrating SDGs into the city's research and strategic framework. The comprehensive study engaged over 2,500 individuals and nearly 120 organizations in total.²³
- The city of **Malaga** (Spain) has created a user-friendly SDG platform²⁴ that compiles over 770 data sets from different sources. The data sets, which can be easily downloaded, are organized into nine thematic clusters, covering key aspects of the city's everyday life, including mobility, culture, public finance, land use and housing, job creation, economy, environmental sustainability, security and social protection.

20. Cities can develop their indicator sets based on multiple existing frameworks. With a focus on urban areas, UN-Habitat developed the *Global Urban Monitoring Framework*²⁵, which has been widely advocated for the use by local and regional governments as the guiding framework for data collection when preparing Voluntary Local Reviews. The Framework was endorsed by the United Nations Statistical Commission in 2022 as part of the Harmonized Global United Nations Systemwide Strategy for monitoring the implementation of SDGs, the New Urban Agenda and other regional, national and subnational urban programs. Furthermore, *European Handbook for SDG Voluntary Local Reviews*²⁶ proposes a list of possible indicators for the use in Voluntary Local Reviews and their connections with SDG targets, and outlines their availability across different countries of the European Union.

21. Indicator sets have been developed at both national and local levels as part of various initiatives. One example is a set of Key Performance Indicators for Smart Sustainable Cities developed under the United for Smart Sustainable Cities, a United Nations initiative coordinated by the International Telecommunication Union (ITU), ECE and UN-Habitat. This initiative serves as a global platform to explore the use of information and communications technologies to facilitate a transition to smart sustainable cities. The framework encompasses 91 indicators that span the economic, social and environmental dimensions of the 2030 Agenda, with information and communications technology being a cross-cutting implementing element. Many cities across the ECE region have introduced these Key Performance Indicators (KPIs) for benchmarking their progress and preparing profiles. They can also serve as substitutes (or proxies) for SDG indicators. Annex II details the connections between the KPIs for Smart Sustainable Cities and SDG indicators.

22. Qualitative indicators and data. Qualitative data may be more easily available and is equally important to support the overall analysis and construct an evidence-based Voluntary Local Review narrative. Any quantitative indicators should be complemented with good qualitative measures such as policy descriptions, best practices and surveys. Qualitative

²³ https://unhabitat.org/sites/default/files/2022/10/avcilar_2022_en_-_smaller_2.pdf

²⁴ <https://datosabiertos.malaga.eu>

²⁵ <https://unhabitat.org/the-global-urban-monitoring-framework>

²⁶ <https://publications.jrc.ec.europa.eu/repository/handle/JRC129381>

data can also substitute for any missing quantitative indicators. Similar to quantitative data, qualitative data can be categorized as either secondary – derived from previously available material, or primary – collected specifically for the purpose of conducting a Voluntary Local Review. For example, conducting a comprehensive review of published literature and any unpublished policies and programme evaluation reports can provide insights into the effectiveness of specific policy measures.

23. Qualitative data tends to be less structured compared to quantitative data. Although the initial cost of accessing qualitative data might be lower, it is advisable to allocate resources for effectively organizing and analysing the data.

3. Tools for obtaining data

24. Primary data, both qualitative and quantitative, can be obtained through various means, such as:

- (i) Questionnaires and surveys (including online) targeting citizens and stakeholders;
- (ii) Feedback from workshops, focus groups and interviews with relevant stakeholders and experts;
- (iii) Social media and local press monitoring;
- (iv) Expert articles/notes sourced from relevant stakeholders.

25. In cases where the SDGs under review are not sufficiently covered during previous public engagements, it is advisable to launch a city-wide online survey to solicit the views and aspirations of local communities and conduct townhall meetings with communities underrepresented in the online survey.

4. ‘Proxies’ or substitute data

26. When local indicator data is missing, localities may adopt proxies, i.e. use substitute data (Box 4). The process of identification, evaluation and integration of proxy data can lead to structural improvements of the locality’s data infrastructure and can benefit from consultation with relevant stakeholders such as academia. It follows steps as outlined below:

(a) Mapping. Following the identification of data gaps in the preliminary analysis, the working group identifies stakeholders who may have access to proxy data for filling those gaps. These stakeholders may include representatives of institutions, the private sector, academia and civil society. The cost of data collection and data adaptation must be mapped and weighed against the potential value that data can bring for the Voluntary Local Review;

(b) Identification. The proxy selected should provide insights into the efficiency or condition that the original indicator is meant to measure. It should be readily available and collectable in a consistent way. If proxy data is provided by external sources, the project manager should secure long-term commitments from these parties. To the extent possible, multiple alternative proxies should be identified;

(c) Quality assurance. Test datasets are requested from the providers. The completeness (that is, number of errors), consistency (that is, reliability of formats) and timeliness (i.e. up-to-date data) of data should be assessed for each dataset using a solid quality assessment methodology.²⁷ The data should retain the highest possible disaggregation degree, and open data formats are recommended over proprietary ones to ensure long-term preservation and interoperability;

(d) Selection. The results of the previous phase should lead to the selection of a single proxy indicator or a mix of indicators;

(e) Documentation. The proxy selected should be made transparent and verifiable, with clear documentation of its sources and the methodologies used for its collection and

²⁷ For further guidance, please refer to the United Nations National Quality Assurance Framework, available at: <https://unstats.un.org/unsd/methodology/dataquality/un-nqaf-manual/#UN-NQAF-Manual>.

processing. It is important to be transparent about its limitations and the rationale for its selection, ensuring that stakeholders are aware of it being a stand-in for the specific indicator.

Box 4

Examples of proxy data sourced from the private sector

Incorporating data from private companies can significantly enhance Voluntary Local Reviews. For example, energy providers track energy usage, which can help indirectly measure greenhouse gas emissions. Cities can analyse this collective energy data to track emission levels and shape their environmental policies, as was the case of **Columbia**, Missouri (United States), which, starting from 2013, used household electricity consumption data to calculate accurately its greenhouse gas emissions and drive an improvement programme for low-income housing. Similarly, data on loan repayments from financial institutions can reflect the city's economic resilience, serving as an indirect measure of economic growth and stability. This can help cities monitor their progress toward economic sustainability. Additionally, data from ride-sharing services and public transportation systems can reveal mobility patterns, offering insights into traffic flow, air pollution and the efficiency of public transportation. Such information is valuable for cities to advance sustainable mobility options. For instance, since 2019, the city of **Chicago**, Illinois (United States), put data-sharing as a condition for licensing transportation network companies. This data fed into the 2023 revision of taxation of these companies aimed at increasing adoption of sustainable transportation modes (e.g. increasing the tax on single-passenger rides and decreasing those on shared rides). Reliance on private sector information must be rigorously assessed to ensure privacy concerns are adequately considered.

D. Performing baseline and trend analysis

27. The preparation of the Voluntary Local Review should include a baseline evaluation of the city's performance in relation to the SDGs (i.e. the current situation). The evaluation identifies key areas of progress as well as any shortfalls. As discussed above, this evaluation (and the associated review report) can be organized by individual SDGs, reviewing them one by one, or, alternatively, by local policy domains, which would be cross-referenced with different SDGs.

28. Selected indicators that serve as proxies for SDGs should be populated and analysed. It is also important to sufficiently disaggregate the data and identify patterns and possible inequalities within the population and the local area. The presentation of these indicators should be supported by explanatory narratives to provide context.

29. The baseline analysis also includes a review of existing policy programmes and initiatives that have influenced the SDG progress. The inclusion of some case studies helps to 'visualise' different experiences, challenges and opportunities shaping the sustainable development context.

30. Where possible, this analysis should include a temporal dynamic, so that key trends over a time period can be presented. Furthermore, comparative benchmarking is important. For example, indicators can be compared with the national average or the average for all municipalities in the region or the country (such indicators need to be standardized or put on the same scale, for example, as per capita or as percentages). This will help understand the relative profile of the city and whether it is advancing or lagging in relation to specific policy areas or SDGs.

31. Spatial, map-based analysis could additionally show key local variations and give a more granular insight into the territory and its different parts (e.g., inner city, inner periphery, suburbs, metropolitan periphery). The spatial analysis could be sourced from existing territorial planning documents.

32. If the project team has compiled numerous indicators and data sources, it may not need to include all of them in the Voluntary Local Review. To make the review effective, the

team should consider prioritizing the inclusion of certain specific indicators to illustrate key trends related to particular SDGs. Other indicators may be suitable for informing the background analysis.

33. Data and indicators collected could also serve as a basis for the development of a local data platform that can be continuously updated over the long term (see Box 5 below).

Box 5

SDGs local platforms and trend analysis

- The city of **Los Angeles** (United States) maintains a user-friendly SDG platform featuring datasets for monitoring progress toward all 17 Goals²⁸. The platform compiles data from different sources with metadata that can be easily downloaded and features published Voluntary Local Reviews as well as guidelines for other cities on how to create their SDG platforms.
- The **German SDG Portal**²⁹ offers datapoints for 56 SDG indicators for German municipalities with over 5,000 inhabitants, showcasing their trends.

E. Strategic evaluation and action plan

34. The baseline analysis provides evidence for the next stage in the development of the Voluntary Local Review, which includes a further analytical evaluation of each of the domains under review, with the ultimate goal of developing recommendations and/or action plans and their implementation. The recommendations should primarily focus on strategies to advance the SDGs and address current deficiencies through a detailed set of actions. These recommendations must be collaboratively created with input from diverse stakeholders, including advisory groups and other relevant parties, to ensure a holistic and inclusive approach (see Box 6 below).

35. This reflective stage is also an opportunity to identify any tensions or contradictions between different SDG-related policy areas in the local contexts and highlight these contradictions to the political level. For example, the provision of affordable housing or preventing social segregation are often addressed by the expansion of new housing development, usually outside of current built-up areas. The need to accommodate a rising urban population, however, often results in urban sprawl and leads to the loss of green areas and land use change, contradicting the principle of protecting the natural environment. Moreover, it puts pressure on water, energy and other resources and increases the urban carbon footprint. By drawing attention to such conflicts, a city can raise awareness and work towards finding sustainable and politically acceptable trade-offs.

²⁸ <https://sdg.lamayor.org/our-work/data-reporting-platform>

²⁹ <https://sdg-portal.de/de> <https://sdg-portal.de/en/>

Box 6

Implementation plans

- The city of **Ghent** (Belgium) is embarking on a strategic plan until the year 2025, aiming to realize the implementation of 20 objectives. In order to achieve these goals, Ghent moves from an accounting-centred approach towards a more substantive and transparent strategy. Instead of issuing a comprehensive Voluntary Local Review annually, Ghent has opted for a series of 5 Voluntary Local Reviews in total, each with a distinct focus (e.g. prosperity), featuring inspiring examples and projects, as well as highlighting specific SDGs, such as SDG 7, 8, 9, 10, and 11 in the latest publication.³⁰
- To ensure an ongoing focus on sustainable development, the city of **Gladsaxe** (Denmark) has embraced a thorough implementation approach centred in three aspects: political emphasis on achieving progress and outcomes; methodical implementation throughout the organization; and active engagement and collaborations for local initiatives.³¹
- The city of **Niš** (Serbia), which is currently developing its Voluntary Local Review under the United Nations Development Account (UNDA) 14th tranche project “Voluntary Local Reviews: Evidence for greener, resilient and sustainable urban recovery in Eastern European and Central Asian countries in transition”, led by UN-Habitat, and co-implemented by ECE, DESA, and Unite Cities and Local Governments, has dedicated an entire chapter to proposed actions and projects for each of the selected SDG indicators.

F. Validation and publication of the Voluntary Local Review

36. The findings and recommendations developed as part of the Voluntary Local Review should be validated through consultations and validation workshops with advisory groups, external peer reviews and stakeholder meetings. These should bring together representatives from relevant local and national government agencies, the national statistical office, academia, the business community, market support institutions, women’s organizations and other civil society organizations (see Box 7 below). The emphasis of the validation workshop should be on obtaining feedback on the relevance, feasibility and priority levels (high, intermediate, or low) of the recommended actions. It should also aim at creating a consensus for an action plan and for implementation of the agreed-upon solutions by priority using a timeframe that spans from short-term (0-2 years) to medium (2-5 years) to long-term (>5 years).

37. Following the validation, the Voluntary Local Review can be finalized, published and disseminated. Translating the document into English for a broader international circulation is strongly recommended.

³⁰ https://unhabitat.org/sites/default/files/2023/03/ghent_2022_en.pdf

³¹ https://sdgs.un.org/sites/default/files/vlrs/2022-10/vlr_gladsaxe_2022.pdf

Box 7

Soliciting feedback from stakeholders

The city of **Amsterdam's** (The Netherlands) highlighted the importance of soliciting feedback from various stakeholders to refine and enhance its Voluntary Local Review. Initially, the city core team collected detailed feedback by sending specific inquiries to different departments. Following this, the entire working group convened to offer general feedback in meetings and through email, with efforts made to involve additional city officials for diverse perspectives. Moreover, the Amsterdam Institute for Advanced Metropolitan Solutions, a research institution collaborating closely with the city, provided valuable feedback on the use of data and document format. This collaborative approach not only improved the report's quality but also addressed discrepancies in aligning secondary goals with chosen indicators, taking into account local relevance, data availability and other constraints.³²

G. Funding the agreed-upon action plans

38. As recommendations contained in Voluntary Local Reviews might involve different levels of local and national governments, it is important to use the coordination mechanism to consolidate them into specific programmes, initiatives and projects. Financial mechanisms are vital to this; subregional and local governments require financial and human resources to implement local actions and projects for sustainable development proposed in the framework of the Voluntary Local Review. The focus should be on developing a preliminary cost estimate to determine if implementation can be funded through the public budget. This means ensuring that SDGs are effectively integrated into both national and local budgets³³ (See Box 8 below) and identifying innovative financing mechanisms for raising additional resources for any funding gaps.

Box 8

Integrating Sustainable Development Goals into local budgets

- In **Malmö** (Sweden), the city's 13 budget goals actively support various SDGs. Sustainability reporting now includes SDG analysis as an evaluation criterion for budget decisions. The budget emphasizes collaborative efforts between city committees and companies to achieve a significant transformation in the key areas, each aligning with specific SDGs.
- The autonomous community **Castilla y León** (Spain) has implemented a system to assess local budgets in alignment with the SDGs.
- Since 2019, the city of **Strasbourg** (France) has been aligning its provisional budgets with the SDGs with a two-step process. In the first step, departments link annual operational credits to specific SDG targets, designating a "primary target" and one or two "secondary targets" based on the principal purpose and additional impacts of spending. In the second step, the credit line amount is proportionally distributed to the targeted SDGs, with 50 per cent allocated to the primary target and the remaining 50 per cent evenly distributed among the secondary targets.

H. Dissemination of results and ongoing monitoring

39. Following the publication of the Voluntary Local Review, it is important to disseminate the document and its results, as well as to start implementing any action plans developed as a result of the review. Monitoring progress on proposed actions is also essential.

³² https://sdgs.un.org/sites/default/files/vlrs/2022-12/vlr_amsterdam.pdf

³³ Strasbourg: https://www.brookings.edu/wp-content/uploads/2021/12/City-playbook_Strasbourg.pdf;
Malmö: https://www.brookings.edu/wp-content/uploads/2021/12/City-playbook_Malmo.pdf

The local and regional governments should regularly reassess the Voluntary Local Review according to the proposed action plans and timeline.

40. It is also recommended to develop an online platform to allow continued update and dissemination of the results of the Voluntary Local Review. Such a platform can feature, for example, a publicly accessible database on SDG indicators, as well as news blogs and links to social media and other communication channels. The platform should be an open-data repository whereby clearly documented data are made easily available, which will further increase transparency and trust. The online platform can also provide a more comprehensive presentation of datasets and indicators collected for the Voluntary Local Review, since not all of the information may be included in a published version (see Box 9 below). The use of application processing interfaces, supplementing the download of data files, improves the usability of data by external stakeholders.

Box 9

Disseminating the results of a Voluntary Local Review

- The online service of the city of **Helsinki** (Finland), MyHelsinki.fi, is one of the key components of the city's brand and marketing strategy which places sustainability at its core. The portal features over 100 editorial articles highlighting different aspects of responsibility. Sustainability is a cornerstone of this online service, reflecting Helsinki's commitment to promoting environmentally responsible practices.³⁴
- The progress of the **state of Hawaii** (United States) towards all 17 SDGs for 2030 is monitored by the Aloha+ Dashboard open-data platform, which is designed to track advancements in the six identified priority areas. It allows for enhance accountability and transparency through the use of community-driven metrics that guide decision-making at both state-wide and county levels. As part of the continuous stakeholder engagement process within the Aloha+ Challenge, the Voluntary Local Review development is integrated through partner-led working groups, forums and other collaborative processes aimed at updating data, identifying new metrics and establishing action priorities.³⁵

V. Recommended structure of Voluntary Local Reviews

41. There is no standard structure for a Voluntary Local Review document.³⁶ VLRs use a structure that is agreed upon in the local context. However, it is recommended to keep the Voluntary Local Review as a straightforward document that gives clear messages to decision makers and citizens on the achievements already accomplished in the SDG implementation and the further actions that remain to be taken to address key priorities. Some common structural elements include the following parts:

(a) **Opening sections:** This section can include a foreword featuring a political statement by the head of the local or regional government and detail the rationale for preparing the Voluntary Local Review. Other elements included in this section could be an executive summary and any key highlights from the document;

(b) **Introductory sections:** This part can introduce the local area, highlight how the municipality organizes its work in relation to sustainable development (for example, mapping city programmes and priorities against different SDGs), introduce the scope of the Voluntary

³⁴ <https://sdgs.un.org/sites/default/files/vlrs/2023-06/helsinki-from-agenda-to-action-2023.pdf>

³⁵ https://unhabitat.org/sites/default/files/2023/09/hawaii_2023_en_1.pdf

³⁶ DESA Global Guiding Elements for Voluntary Local Reviews (VLRs) of SDG Implementation and ESCAP in the Asia-Pacific Regional Guidelines on VLRs provide recommendations for possible structures of the VLRs. DESA, available at: https://sdgs.un.org/sites/default/files/2020-10/GlobalGuidingElementsforVLRs_FINAL.pdf. ESCAP, available at: https://www.unescap.org/sites/default/files/Asia-Pacific%20Regional%20Guidelines%20on%20VLRs_0.pdf.

Local Review in question, and summarize its key findings. Providing a reference to Voluntary National Review is also encouraged;

(c) Methodology and approach: This section can describe how the preparation of the Voluntary Local Review was organized, which indicators were used and how information was obtained. When alternative proxy indicators are selected, it is crucial to document their selection here;

(d) Review of SDG targets and/or policy domains: This section should delve into reporting on the progress made under associated SDG targets and provide a clear account of the remaining challenges and future actions. For each of the structural items (a theme or an SDG) the Voluntary Local Review can include:

(i) A summary of local and national policies of relevance to the SDGs under review;

(ii) An evaluation of the city's progress towards the SDGs and targets under review. The assessment should be supported by quantitative and qualitative data. Utilizing good practices and case studies can provide benchmarks for measuring the progress within a specific context;

(iii) A summary of remaining challenges and action-oriented solutions to address them, organized by priority levels and set within a specific time frame.

(e) Conclusions and next steps: This section can provide a summary of the city's main commitments for future actions, detailing the resources required for delivering on them. These commitments could also include references to the importance of forward-thinking to accelerate the achievement of the SDGs and implementation of sustainability strategies;

(f) Technical annexes: This section could include any additional relevant materials, such as the city's action plan or detailed metrics for SDG targets. A more detailed methodology can also be provided as an annex to the document.

Annex I

List of key international guidelines for Voluntary Local Reviews

Institution and publication	Description
UN-Habitat and UCLG, 2024, Action-Oriented Voluntary Local Reviews. A methodology for the partners of UN-Habitat	Describes the steps involved in conducting effective, action-oriented Voluntary Local Reviews (VLRs), while also disseminating valuable insights and support resources. Prior to implementing this approach, UN-Habitat has partnered with ARCO to undertake a comprehensive worldwide research project.
European Commission, 2022, <i>European Handbook for SDG Voluntary Local Reviews - 2022 Edition</i>	The European Handbook for SDG Voluntary Local Reviews (VLRs) provides guidance to policymakers, researchers and practitioners for developing VLRs.
UN-Habitat and UCLG, 2021, Guidance for Voluntary Local Reviews, (Vol. 2). Towards a New Generation of VLRs: Exploring the local-national link.	Highlights how linkages between VNRs and VLRs are playing out. This Volume explores the extent to which the localization of the SDGs and the untapped potential of local action are acknowledged in national reviews.
Global Taskforce of Local and Regional Governments, 2020, <i>Roadmap for Localizing the SDGs: Implementation and Monitoring at Subnational Level</i>	The Roadmap for Localizing the SDGs is one of the very first efforts of the Global Task Force, UCLG, UN-Habitat and UNDP to provide concrete support to local and regional governments in localizing the SDGs. As part of this alliance, the institutions created a series of learning modules on SDG localization.
Organisation for Economic Co-operation and Development (OECD), 2020, <i>A Territorial Approach to the Sustainable Development Goals</i>	Using a common set of indicators, the report helps cities and regions measure progress toward the SDGs and compare their performance to national averages and the averages of other cities.
United Nations Department of Economic and Social Affairs (DESA), 2020, <i>The Global Guiding Elements for Voluntary Local Reviews (VLRs) of SDG Implementation</i>	Provides general recommendations for structuring VLR reports.
United Nations Economic Commission for Asia and the Pacific (ESCAP), 2020, <i>Asia-Pacific Regional Guidelines on Voluntary Local Reviews. Reviewing local progress to accelerate actions for the Sustainable Development Goals</i>	Provide practical tools, checklists and templates that local governments and other stakeholders can use for developing VLRs. These Guidelines are used by the Penang Platform for Sustainable Urbanization (PPSU), a multi-stakeholder partnership for leveraging cities' strengths and supporting local, regional and national governments in achieving the SDGs and the New Urban Agenda in Asia and the Pacific.
United Nations Economic Commission for Africa (ECA), 2021, <i>Regional Guidelines for VLRs in Africa</i>	ECA, in partnership with UN-Habitat and UCLG Africa, launched Regional Guidelines for VLRs in Africa during the 2021 edition of the High-Level Political Forum. While connecting the 2030 Agenda and the Agenda 2063, the Guidelines provide a step-by-step template for the development of VLRs.
United Nations Human Settlements Programme (UN-Habitat), United Cities and Local Governments (UCLG), 2020, <i>Guidance for Voluntary Local Reviews (Vol. 1). A Comparative Analysis of Existing VLRs.</i>	Analyses the structure, content and methods of the 37 VLRs published as of June 2020 and highlights the intrinsic value of VLRs as a political process for enhancing coordination between different government spheres.

Annex II

Key Performance Indicators for Smart Sustainable Cities

The table lists Key Performance Indicators (KPIs) for Smart Sustainable Cities developed under the United for Smart Sustainable Cities initiative, along with corresponding Sustainable Development Goal (SDG) targets and/or indicators. These KPIs can serve as proxies for evaluating progress towards the SDGs. The table is intended solely as a guide for cross-checking purposes.

Key Performance Indicators	SDG	SDG Reference
Poverty	1	target 1.1
Natural Disaster Related Deaths	1	indicator 1.5.1 & 13.1.2
Disaster Related Economic Losses	1	indicator 1.5.2
Population Living in Disaster Prone Areas	1, 11	target 1.5 target 11.b
Local Food Production	2	target 2.c target 2.4
Electronic Health Records	3	target 3.d
Life Expectancy	3	target 3.4
Maternal Mortality Rate	3	indicator 3.1.1
Physicians	3	indicator 3.c.1
In-Patient Hospital Beds	3	target 3.8
Health Insurance/Public Health Coverage	3	target 3.8
Emergency Services Response Time	3	target 3.d
Police Service	3	target 3.d
Fire Service	3	target 3.d
Traffic Fatalities	3	indicator 3.6.1
Student ICT Access	4, 5	indicator 4.4.1 indicator 4.a.1 target 5.b
School Enrollment	4	target 4.1
Higher Education Degrees	4	target 4.3
Adult Literacy	4	indicator 4.6.1
Child Care Availability	4, 5	target 4.2 target 5.5 target 10.4
Smart Water Meters	6	target 6.4 indicator 6.4.1
Water Supply ICT Monitoring	6	target 6.4 indicator 6.4.1
Drainage / Storm Water System ICT Monitoring	6	target 6.2
Basic Water Supply	6	indicator 6.1.1
Potable Water Supply	6	indicator 6.1.1
Water Supply Loss	6	target 6.4
Wastewater Collection	6	target 6.3
Household Sanitation	6	indicator 6.2.1
Drinking Water Quality	6	indicator 6.1.1
Water Consumption	6	indicator 6.4.1
Freshwater Consumption	6	indicator 6.4.2
Wastewater Treatment	6	indicator 6.3.1
Smart Electricity Meters	7	target 7.3
Electricity Supply ICT Monitoring	7	target 7.3
Demand Response Penetration	7	target 7.3
Electricity System Outage Frequency	7	target 7.1
Electricity System Outage Time	7	target 7.1

Access to Electricity	7	indicator 7.1.1
Renewable Energy Consumption	7	indicator 7.2.1
Electricity Consumption	7	target 7.3
Residential Thermal Energy Consumption	7	target 7.3
Public Building Energy Consumption	7	target 7.3
Unemployment Rate	8	indicator 8.5.2
Youth Unemployment Rate	8	indicator 8.5.2
Tourism Sector Employment	8	indicator 8.9.1
Gender Income Equity	8	indicator 8.5.1
ICT Sector Employment	8	target 8.3
R&D Expenditure	9	indicator 9.5.1
Patents	9	target 9.b
Small and Medium-Sized Enterprises	9	indicator 9.3.1
Availability of WIFI in Public Areas	9	target 9.c
Gini Coefficient	10	target 10.2
Dynamic Public Transport Information	11	target 11.2
Traffic Monitoring	11	target 11.2
Intersection Control	11	target 11.2
Solid Waste Collection	11, 12	indicator 11.6.1 indicator 12.4.2
Public Transport Network	11	target 11.2
Public Transport Network Convenience	11	target 11.2
Bicycle Network	11	target 11.2
Transportation Mode Share	11	target 11.2
Travel Time Index	11	target 11.2
Shared Bicycles	11	target 11.2
Shared Vehicles	11	target 11.2
Low-Carbon Emission Passenger Vehicles	11	target 11.2
Public Building Sustainability	11, 7	target 11.3 target 7.3
Integrated Building Management Systems in Public Buildings	11	target 11.c target 11.1.1
Pedestrian infrastructure	11	target 11.3
Urban Development and Spatial Planning	11	indicator 11.a.1 target 11.3
Air Pollution	11	target 11.6 indicator 11.6.2
GHG Emissions	11, 13	target 11.6 indicator 13.2.1
Solid Waste Treatment	11	indicator 11.6.1
Noise Exposure	11	target 11.6
Green Areas	11	indicator 11.7.1
Green Area Accessibility	11	indicator 11.7.1
Recreational Facilities	11	indicator 11.7.1
Cultural Expenditure	11	target 11.4
Cultural Infrastructure	11	target 11.4
Informal Settlements	11	indicator 11.1.1
Housing Expenditure	11	target: 11.1
Resilience Plans	11	indicator 11.b.1
Protected Natural Areas	15, 14	indicator 15.1.2 indicator 15.b.1 target 14.5
Open Data	16	target 16.6 target 16.7
e-Government	16	target 16.6 target 16.7
Public Sector e-Procurement	16	target 16.6 target 16.7

EMF Exposure	16	target 16.b
		target 16.7
Voter Participation	16, 11	target 11.3 indicator 11.3.2
Violent Crime Rate	16	target 16.1 indicator 16.3.1
Household Internet Access	17	indicator 17.8.1
Fixed Broadband Subscriptions	17	indicator 17.6.2 indicator 17.8.1
Wireless Broadband Subscriptions	17, 5, 9	indicator 17.8.1 indicator 9.c.1 indicator 5.b.1
Wireless Broadband Coverage	17, 5, 9	indicator 17.8.1 indicator 9.c.1 indicator 5.b.1

Source: Author elaboration based on CBD, ECA, ECE, ECLAC, FAO, ITU, UNDP, UNESCO, UN Environment, UNEP-FI, UNFCCC, UN-Habitat, UNIDO, UNU-EGOV, UN-Women and WMO, *Collection Methodology for Key Performance Indicators for Smart Sustainable Cities*, Link: https://www.itu.int/en/publications/Documents/tsb/2017-U4SSC-Collection-Methodology/files/downloads/17-00474_Collection-Methodology-for-Key-Performance-Indicators-for-Smart-Sustainable-Cities.pdf