

Operationalising the follow-up and review of the sustainable development goals at the local level: insights from European cities and their voluntary local review experience

Fernando Ortiz-Moya ^{1,*} and Marco Reggiani ²

¹City Taskforce, Institute for Global Environmental Strategies, 2108-11, Kamiyamaguchi, Japan

²Department of Civil and Environmental Engineering, University of Strathclyde, James Weir Building Level 5, 75 Montrose Street, Glasgow, G1 1XJ, United Kingdom

*Corresponding author. City Taskforce, Institute for Global Environmental Strategies, 2108-11, Kamiyamaguchi, Hayama, Kanagawa 240-0115, Japan.
E-mail: ortiz-moya@iges.or.jp

Abstract

Achieving the Sustainable Development Goals (SDGs) hinges on well-designed and implemented follow-up and review (FUR) processes. Cities lack official recognition in the FUR architecture of the 2030 Agenda. This is a notable shortcoming, as cities are responsible for implementing at least two-thirds of their targets. To engage with the 2030 Agenda, cities have initiated FUR exercises through Voluntary Local Reviews (VLRs) to establish benchmarks, report on their progress, and share best practices. This paper explores how cities are operationalising FUR through a thematic analysis of interviews with city officials of seven European cities that conducted two or more VLRs between 2019 and 2022. Our findings highlight three main ways in FUR processes through VLRs affect local sustainable policymaking: (i) by aligning global goals and targets with local monitoring and reporting; (ii) by integrating and timing evaluation with local action, thereby embedding the SDGs more deeply into municipal strategies; and (iii) by accelerating local action through innovative approaches (e.g. sustainability budgeting). We conclude that conducting FUR through VLRs positively contributes to SDGs implementation. However, to make this more likely to happen, FUR should be embedded in municipal processes and local FUR efforts should be better recognised in global sustainability agendas.

Key words: sustainable development goals (SDGs); follow-up and review; local governance; Europe; voluntary local review (VLR)

Introduction

In 2015, the 2030 Agenda for Sustainable Development agreed by the UN Member States set 17 Sustainable Development Goals (SDGs) to steer policy action towards environmental, social, and economic sustainability (UNGA 2015). The 2030 Agenda has advanced a form of governance for sustainable development characterised by the use of non-legally binding, inclusive, and comprehensive global goals. This so-called governance through goals is facilitated by weak institutional arrangements at the intergovernmental level, which allow considerable national autonomy in interpretation and implementation (Fukuda-Parr 2014; Biermann *et al.* 2017; Kanie *et al.* 2017).

A core tenet of the governance architecture of the 2030 Agenda is country-led and voluntary follow-up and review (FUR) exercises. This work is presented as key to measure and report on progress, guarantee accountability to citizens, share best practices, and ensure that no one is left behind (UNGA 2015). The Agenda, however, does provide only some general principles on how to conduct FUR. The lack of an official definition and practical guidance poses a number of difficulties, particularly around operationalising FUR processes (Gusmão Caiado *et al.* 2018; Miola

and Schiltz 2019; Giles-Corti *et al.* 2020). This includes defining the most suitable scale of FUR (Patton 2016; Yonehara *et al.* 2017), or choosing the appropriate indicators to assess progress on the SDGs (Bjørnholt and Larsen 2014; Ciambra *et al.* 2023).

The specific governance architecture of the 2030 Agenda has brought additional challenges to conducting the multi-level and impactful FUR processes that are needed to accelerate sustainable development. The 2030 Agenda recommends national governments to report periodically on their FUR process through Voluntary National Reviews (VNRs) (Adams and Judd 2016; Bexell and Jönsson 2019; Morita *et al.* 2020; Beisheim and Fritzsche 2022). These reviews are one of the innovative mechanisms introduced to monitor progress on the SDGs and report on actions taken, while simultaneously serving as peer learning tools to share best practices across countries (UNGA 2015). However, there is still no official provision to include subnational governments, whether regional or municipal, in FUR processes (Narang Suri *et al.* 2021). This is a significant shortcoming because subnational governments play a key role in delivering the SDGs (Biermann *et al.* 2023; Ortiz-Moya and Reggiani 2023), with at least two-thirds of the 169 targets requiring local implementation (OECD 2020).

Received: 26 April 2024. Revised: 25 September 2024. Accepted: 4 March 2025

© The Author(s) 2025. Published by Oxford University Press.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.

To demonstrate their active engagement in implementing the 2030 Agenda, cities, regions, and other sub-national governments—which we will henceforth refer to as local governments—have mirrored the FUR process designed for national governments and their VNRs through Voluntary Local Reviews (VLRs). Originally launched as a bottom-up initiative by local governments—particularly cities—to showcase their work on the SDGs, VLRs have since evolved beyond their initial purpose, becoming a key tool for structuring local SDGs action and organising FUR processes (Ortiz-Moya *et al.* 2020; UCLG and UN-Habitat 2020; Ortiz-Moya and Reggiani 2023). However, how to operationalise FUR remains an under-researched area (De Francesco *et al.* 2024), and there is little empirical evidence on the implications of FUR processes for governance structures and policy at the local level.

This study contributes to filling this gap by exploring how FUR is conducted through VLRs in seven European cities. The main research questions are: (i) How do European cities operationalise FUR through VLRs? And (ii) How are cities using FUR to shape local policymaking to accelerate the implementation of the 2030 Agenda? We explore these questions through the thematic analysis of semi-structured interviews with city officials responsible for the VLR process of cities that have conducted two or more VLRs between 2019 and 2022 (i.e. Barcelona, Spain; Bonn, Germany; Bristol, UK; Ghent, Belgium; Gladsaxe, Denmark; Helsinki, Finland; and Stuttgart, Germany).

Building on existing literature and the initial experiences of cities implementing VLRs, we propose four hypotheses that reflect key expectations for the implementation of FUR through VLRs in European cities. First, we hypothesise that, when operationalising FUR, cities use VLRs as a strategic tool for localising global SDG targets and indicators. Second, we hypothesise that the localisation of the SDGs through VLRs creates barriers to integrating FUR efforts across local, national, and global levels, particularly in terms of review and reporting processes. Third, we hypothesise that FUR remains a stand-alone exercise, often disconnected from broader municipal governance structures. Fourth, we hypothesise that the influence of FUR through VLRs on policymaking remains limited, primarily due to the siloed nature of local governance structures, where fragmented, department-specific policies impede broader cross-departmental coordination for sustainable development.

These hypotheses serve as an *ex-ante* framework for our analysis of the procedures and considerations followed by European local governments when engaging with the SDGs and their follow-up and review. Through our findings, we seek to support sustainable development at the local level and contribute to the design of more effective and inclusive sustainability agendas in the future, providing a standard ‘toolkit’ of reasonable expectations for applying FUR at the municipal level.

Following this introduction, we explore the follow-up and review architecture of the 2030 Agenda and the challenges faced by local governments in conducting FUR. After explaining the methods used to analyse our data, we describe the main findings of the thematic analysis. Finally, we discuss the implications of our findings for the FUR of the 2030 Agenda at different levels of government and the potential of FUR to maximise the implementation of the SDGs at the local level.

The follow-up and review of the SDGs, a primer

The 2030 Agenda established 17 SDGs based on the principle of governance through goal setting (Biermann *et al.* 2017; Kanie *et al.* 2017). This approach implies that governments and other political

actors determine an objective, usually at the international level, and set goals for progress towards that objective while making their commitment public (Kanie *et al.* 2017). However, as these global goals are not legally binding, there are no enforcement mechanisms or sanctions for non-compliant actors, making arrangements for follow-up and review (FUR) essential to ensure adequate progress towards the goals (Persson *et al.* 2016; Breuer *et al.* 2022).

The literature has argued that FUR processes encourage commitment to achieving the SDGs while fostering transparency and making governments accountable to citizens and the global community (Van de Walle and Cornelissen 2014; Fukuda-Parr and McNeill 2015; Bexell and Jönsson 2019). However, neither policy nor academic debates have clarified how FUR can actually maximise progress towards the SDGs (Persson *et al.* 2016).

The 2030 Agenda structures FUR around national, supra-national, and global processes. The main responsibility for designing and conducting FUR rests with national governments, and UN Member States are encouraged to undertake voluntary assessments of progress towards the SDGs in the form of Voluntary National Reviews (VNRs). VNRs are presented annually at the High-level Political Forum on Sustainable Development (HLPF) and are fundamental to the governance through goals approach of the 2030 Agenda (Adams and Judd 2016; Bexell and Jönsson 2019; Morita *et al.* 2020; Beisheim and Fritzschke 2022). Although the 2030 Agenda leaves the door open for SDGs reviews at the local level, these are not formally integrated into its overall FUR architecture and, if conducted, are still recommended to be “country-led and country-driven” (UNGA 2015 paragraph 79).

The 2030 Agenda provides few, and mostly general, rules on how to conduct FUR. The main resolution identifies nine guiding principles highlighting the importance of evidence-based, transparent, and inclusive FUR processes (UNGA 2015, paragraph 74). In 2017, 2 years after the adoption of the 2030 Agenda, UN member states approved a global indicator framework to measure progress, developed by the UN Statistical Commission (UNSD) and later revised in 2020 (Adams and Judd 2016; UNGA 2017; Giles-Corti *et al.* 2020). Recognising the importance of VNRs as the main instrument for Member States to monitor, evaluate, and report on their efforts on implementing the SDGs, the United Nations Department of Economic and Social Affairs (UNDESA) has established reporting guidelines on various components to be included in VNR reports—such as “Methodology” or the “Policy and enabling environment” (UNDESA 2023)—but without practical step-by-step recommendations to facilitate conducting FUR processes.

Lack of official definition and prescriptive advice has resulted in a wide variety of approaches to FUR within VNRs, which are oftentimes considered insufficient to fully capture SDG achievement to date (Elder 2020; CDP 2021, 2022; Elder and Newman 2023). Persson *et al.* (2016) address this issue by conceptualising FUR as comprising two separate but complementary dimensions. First, they define follow-up as “monitoring and reporting of progress on goals and targets.” Review includes “evaluation of efforts to achieve goals and targets and whether the goals and targets are appropriate in the first place” (p. 60). When working in tandem, these two dimensions can advance monitoring and evaluation cycles in which outcome assessment could result in reformulating programmes and policies if progress is unsatisfactory (Yonehara *et al.* 2017; Leavesley *et al.* 2022). Yet, FUR has been theorised independently of its operationalisation, leading to a limited understanding of the internal mechanisms governing

follow-up and review exercises on the SDGs both at the national and local level.

Research has identified a number of concerns that may limit the effectiveness of FUR processes in shaping policymaking to accelerate sustainable development. Several studies have highlighted the tensions and the politics of review and reporting mechanisms, which might make FUR contentious and reduce its positive impact (Donald and Way 2016; Bexell and Jönsson 2017). The effectiveness of FUR in accelerating the implementation of the SDGs might also be limited by each country's ability to collect and analyse data, as well as evaluate and review their policies accordingly (Stafford-Smith et al. 2017). Another concern relates to the set of indicators used to measure progress towards the SDGs, which highlight priorities but may lead to ignore unmeasured yet important issues (Fukuda-Parr 2014; Yonehara et al. 2017). Finally, FUR processes and outputs usually ignore the broader public and are commonly aimed at international elite actors (Bexell and Jönsson 2017, 2019).

Another key shortcoming of the FUR architecture of the 2030 Agenda is its omission of local governments (Narang Suri et al. 2021)—a significant oversight given their importance in achieving the SDGs (OECD 2020). To fill this gap, a number of local governments worldwide have aligned their sustainability policies with the 2030 Agenda, with many of them replicating the FUR process undertaken by national governments in their VNRs in the form of Voluntary Local Reviews (VLRs) (Ortiz-Moya et al. 2020, 2021). VLRs emerged in 2018 as a bottom-up response to the challenges of following up and reviewing the SDGs at the local level (Ruiz-Campillo and Rosas Nieva 2022). Initially, VLRs followed the structure of VNRs recommended by UNDESA, focusing on local indicators, means of implementation, and stakeholder engagement processes. While early VLRs primarily served to report on a local government's progress towards achieving the SDGs, they have since evolved into powerful tools for localising the 2030 Agenda and for structuring, monitoring, and evaluating its implementation (Ciambra et al. 2023; Fox and Macleod 2023; Ortiz-Moya and Reggiani 2023).

The unofficial and bottom-up nature of VLRs makes it complicated to accurately gauge the full extent and impact of the VLR movement. It is estimated that over 260 VLR reports were presented by subnational levels of government—including regional, provincial, municipal, neighbourhood entities—between 2018 and 2023 (Ortiz-Moya and Kataoka 2024). The number of VLRs have increased annually since 2018, although there seems to be a lower number of VLR reports published in 2023. However, this figure likely underestimates the total number of VLRs published by the end of 2023. Since VLRs are not formally integrated into the FUR architecture of the 2030 Agenda, there is no centralised mechanism for tracking all VLRs. Subnational governments are typically encouraged to self-report their VLR efforts to various international organisation, which host them in separate online repositories, leading to discrepancies in the number of reports (see [Supplementary Table 1](#)). Another challenge is the lack of official definition of VLRs, making it difficult to discern which reports should be classified as such, leaving room for varying interpretations of what constitutes a VLR.

Europe has seen the highest number of VLRs presented by subnational governments between 2018 and 2023, with an estimated 93 reports (Ortiz-Moya and Kataoka 2024). Of these, 69 were authored by municipal governments, while 24 were produced by regional or provincial authorities, or jointly by municipal and regional governments—such as in Italy, where metropolitan cities and their respective regional governments

collaborated on VLRs. [Figure 1](#) shows the municipal governments in Europe that have released at least one VLR during this period.

While VLRs may offer a way forward to address the contradictions between the global ambitions of the 2030 Agenda and the local actions needed to achieve them, research on how to conduct FUR through VLRs is scarce. In this paper, we aim to contribute to filling two gaps in the literature. The first is the dearth of empirical knowledge on how local governments operationalise FUR via VLRs—which contrasts, e.g. with the attention paid to VNRs (Elder 2020; Kandpal and Okitasari 2022; Elder and Newman 2023). This is a key issue for both research and practice given that, despite the myriad of VLR guidelines that have been produced—including those by UNESCAP (2020), UNDESA (2020), UNECE (2021), UN-Habitat together with UCLG (2020, 2021); UN-Habitat and UCLG (2024), CEPAL (2024); the European Union (Siragusa et al. 2020, 2022), UNECA (2022), the Institute for Global Environmental Strategies (Koike et al. 2020), IISD (2022), and arco (2024)—local authorities are still struggling to apply these top-down solutions to their unique governance structures and challenges. Not only it is difficult to make sense of the SDGs and their targets, but the global indicator framework is not easily applicable to sub-national realities—especially as many cities lack the capacity to collect, organise, and analyse data for a wide range of SDG targets (Jossin and Peters 2022; Fox and Macleod 2023).

The second gap we address relates to how FUR can contribute to accelerating the achievement of the SDGs, particularly at the local level. Much of the policy and academic discussion on FUR is top-down and theoretical (Regions4 2018; Abraham 2021; Reuter 2023). As a result, the ever-growing list of recommendations focused on measuring the SDGs is out of touch with the capacity constraints, data availability, and technical know-how of local governments (Leavesley et al. 2022; Reuter 2023). Moreover, the theoretical emphasis on monitoring that exist in most of the literature may hinder discussions on how to steer action towards effective implementation of the SDGs. This aspect that would require paying equal attention and strengthening of the review dimension of FUR to find new pathways to accelerate sustainable development (Georgeson and Maslin 2018).

Methodology

In this study, we focus on a comprehensive sample of European cities that engaged in FUR through a VLR process between 2019 and 2022. Cities are key to delivering the 2030 Agenda due to their proximity to people and their ability to respond quickly to emerging problems (Ansell et al. 2022). We limited the sample to cases that conducted two or more VLRs, as periodic follow-up and review are critical for achieving the SDGs, as outlined in the 2030 Agenda (UNGA 2015). We decided to focus solely on cities so that our sample would be more homogenous—allowing for a more focused analysis of the data and to strengthen internal validity. Exploring the ways other local governments (e.g. regions) conducted FUR through VLRs is an important issue for future research.

Given that European countries are leading in SDG implementation (Sachs et al. 2023), and cities within these countries are at the forefront among OECD local governments in SDG achievement (Briggs et al. 2022), we anticipate that European cities with multiple VLRs provide a robust case for empirical analysis of local FUR practices. A total of 40 cities in Europe had completed and published a VLR in the time frame considered by the study. Out of them, eight conducted two or more VLRs; these eight cities with were contacted to scope their interest and availability in

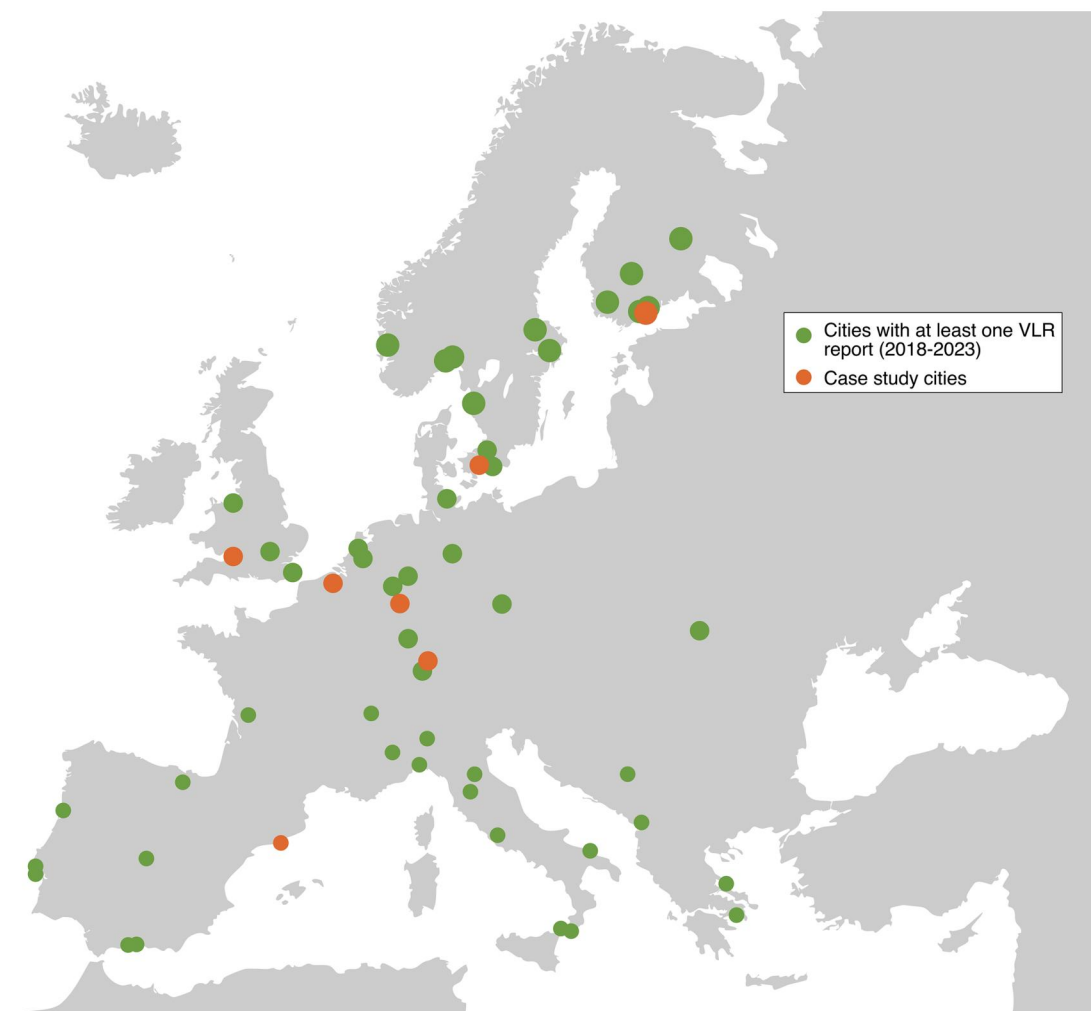


Figure 1. Identified cities with at least one VLR report (2018–2023), highlighting the case study cities. Source: Map by Fernando Ortiz-Moya.

participating in an interview, with representatives from seven cities agreeing to join the study—namely, Barcelona, Spain; Bonn, Germany; Bristol, the UK; Ghent, Belgium; Gladsaxe, Denmark; Helsinki, Finland; and Stuttgart, Germany (Table 1).

With regards to participants, we focused on including city officials who were responsible for VLRs in each of the cases. Seven semi-structured interviews were conducted and recorded online between November 2022 and May 2023. The aim was to better understand the operationalisation of FUR by European cities through the VLR process and how FUR is used to shape local policymaking and accelerate the implementation of the 2030 Agenda. Questions in the interview protocol included: “How is your city approaching the follow-up and review of the SDGs and the reporting of findings?”; and “How does FUR integrate and influence planning processes?” During interviews, the protocol was adapted to the flow of the conversations and questions that were found to elicit better insight from participants were prioritised. Ethical approval for the research was obtained by the corresponding author and participants provided consent to participate in the study. To maintain confidentiality, the quotes included in the paper have been anonymised.

After transcribing the interviews, thematic analysis (Guest *et al.* 2012; Braun and Clarke 2021) was used to explore and identify themes within the data. We used NVivo software for analysis and employed both deductive and inductive approaches to code

the data. This methodology is flexible and driven by both theory and data—therefore well suited for coding that, while based on participants’ experiences, draws from theory and prior literature to illuminate complex phenomena (Braun and Clarke 2012; Swain 2018).

Before the systematic analysis of data, and framed by both our research questions and hypotheses, a codebook was developed that included three broad codes (follow-up of the implementation of the SDGs, review of the implementation of the SDGs, FUR to accelerate local action) and a number of subcodes to further explore and clarify data. In differentiating between follow up and review during our analysis, we adopt a conceptualisation of FUR similar to Persson *et al.* (2016), which defines follow up as monitoring and reporting while linking review with the evaluation of the SDGs. The authors independently coded a subset of representative interviews and subsequently compared their coding choices. During initial coding, each transcript was reviewed, and labels were applied to segments of text that reflected distinct ideas or concepts. Consistent with the purpose of this study and our approach to thematic analysis, we employed an interactive and reflexive approach to coding that left room to adjust, reorganise, and clarify codes. While we reached appropriate saturation by including seven out of eight cities that qualified for the study, we enhanced the trustworthiness and reliability of the analysis by undertaking multiple

Table 1. Cities included in the study, number of interviewees, data of the interview, and the year of publication of the VLRs.

City (country)	Number of interviewees	Date of interview	Year of publication of VLR report			
			2019	2020	2021	2022
Barcelona (Spain)	2	2023-01-20		X	X	X
Bonn (Germany)	2	2022-11-17	X			X
Bristol (UK)	1	2022-11-18	X			X
Ghent (Belgium)	1	2023-05-17		X	X	X
Gladsaxe (Denmark)	1	2023-04-19			X	X
Helsinki (Finland)	2	2022-11-18	X		X	
Stuttgart (Germany)	1	2023-05-11			X	X

rounds of preliminary coding. Through this iterative process, themes began to be identified and the process was repeated until agreement was reached between the authors.

Follow-up and review through VLRs in European cities: procedures and impacts on SDG implementation

Follow-up of the implementation of the SDGs via VLRs: operationalising monitoring and reporting by localising global goals and targets

We identified two overarching themes that capture significant areas of concern for participants regarding the creation of local follow-up frameworks through VLRs (i.e. the first component of FUR). These are: (i) localising the targets and indicators of the 2030 Agenda, and (ii) integrating local monitoring efforts into national and global-level FUR processes. These two themes highlight the ways local governments are operationalising FUR to assess how their policies are performing over time and whether they are making progress towards achieving the targets set out in the SDGs. Examining these themes also gives insight into the tensions between the prescriptive, top-down outlook of the 2030 Agenda and the bottom-up approaches to FUR undertaken by cities through their VLRs.

All of the city officials we interviewed agreed that localisation was key to establishing follow-up frameworks—i.e. translating the 2030 Agenda goals, targets, and indicators in a way that reflects local contexts and priorities. Arguably, this was needed because the FUR architecture of the 2030 Agenda was designed for national governments. Most interviewees noted that localisation did not happen in a vacuum; their cities already had sustainable development policies and monitoring and evaluation frameworks in place. However, the SDGs have introduced a new way of thinking about sustainable development that emphasises policy integration, global accountability, and multi-stakeholder implementation (Biermann *et al.* 2017; Breuer *et al.* 2019; Breuer and Leininger 2021; Eichhorn *et al.* 2021). This requires a paradigm shift in governance structures, e.g. by aligning existing policies, planning instruments, and key performance indicators (KPIs) with the SDGs.

While all the cases we considered employed VLRs as a key tool to operationalise FUR, their approach to localising the SDGs to facilitate monitoring varied between cities. Gladsaxe, e.g. emphasised “translating the SDGs into the local context,” which involved organising focus groups with local stakeholders to “get [the SDGs] closer to the citizens and the community.” City officials in Bristol, on the other hand, used a mix of bottom-up and top-down approaches in their localisation process. The city mapped SDGs targets against the One City Plan—the city’s plan setting

priorities and goals to achieve a more sustainable and inclusive Bristol by 2050 (Bristol City Council 2019; Fox and Macleod 2019)—to decide which targets were relevant to the local context and whether the city has jurisdiction over their implementation.

When deciding which indicators to use in local follow-up exercises—which is one of the key challenges of FUR processes (Fukuda-Parr 2014; Georgeson and Maslin 2018; Giles-Corti *et al.* 2020)—most of our participants noted that they started by evaluating what their city was already measuring through other mechanisms. Ghent, e.g. noted that:

“[When it comes to monitoring] The best starting point is looking at what [indicators] you already have, what you already use. ... It’s an interesting starting point because you can clearly see what you are not measuring [and] because the SDGs [cover] a lot of topics.”

As the quote highlights, assessing available indicators and data helps to align them with the SDGs and identify blind spots in existing monitoring practices. This approach also avoids duplications—and the resulting increase in bureaucracy and/or an inefficient use of resources—while creating a local follow-up framework that is relevant to the day-to-day reality of the local government.

Participants discussed a range of challenges they encountered when deciding on indicators to monitor progress on the SDGs. They noted that it was difficult to obtain up-to-date, relevant, and quality data to measure some of the SDGs at the local level. Even when data was available at the national level, it could often not be disaggregated to the local level. By reflecting on their experiences on delivering two or more VLRs (see Table 1), city officials also realised that data was not updated regularly enough to measure the impact of unexpected crisis on the SDGs—such as the COVID-19 pandemic or the cost-of-living crisis.

Deciding what to measure—i.e. the unit of analysis—was further complicated when monitoring was approached from the perspective of local action. While the 2030 Agenda brings together all aspects of sustainable development, local governments are responsible for different areas of the SDGs depending on their context and the multi-level governance networks in which they are embedded. Moreover, as noted by city officials in Barcelona, it is the city as a whole that is responsible for delivering on the 2030 Agenda, not just the city council. Local governments, therefore, face a “dilemma” when operationalising FUR:

“Most of the indicators [we have] ... give us maybe a better picture of the city, but they are not so strongly connected with the activity of the city council. ... [Instead we should] increase the indicators that refer to the activity of city council. This would be better to evaluate performance. ... We have to [find

an] equilibrium ... and this should be reflected in the indicators [we employ].”

This quote indicates that, when designing follow-up frameworks at the local level, it is key to strike a balance between city-wide indicators—which provide an overall picture of the city—and indicators that are relevant to achieving targets to which city councils can actually contribute.

The reporting process to disseminate the results of monitoring exercises to a wider audience is another key component of FUR—and, more broadly, a cornerstone of the politics of sustainable development as imagined by the 2030 Agenda. This is because reporting contributes to greater transparency and accountability of governments to citizens, stakeholders, and the global community (Bexell and Jönsson 2017, 2019; Breuer et al. 2022). Cities highlighted that, in addition to structuring their local follow-up of the SDGs, VLRs were also helpful in reporting on their outcomes. As the interviewee from Stuttgart argued, VLRs are more comprehensive compared to traditional reporting mechanisms:

“The additional value of the VLR is that it actually covers the broad spectrum of environmental, social, and ecological affairs within Stuttgart. ... [Additionally] our VLR shows the connectedness of different fields of sustainability ... and shows possible conflicts of interest as well as the relevance of correlating SDGs. It makes [information] more visible and transparent.”

It is worth noting that VLR reports submitted by cities around the world are often available in English (Ortiz-Moya et al. 2023). This facilitates peer-learning between cities, as VLRs tend to include lessons learned, exemplary practices, and challenges faced in implementing the SDGs. However, this raises the question of who the report's audience is, especially in countries where English is not widely spoken and there is no version of the report in the local language.

While international organisations are increasingly encouraging greater integration between local and national reporting (Bilsky et al. 2021; UCLG and UN-Habitat 2021; UN-Habitat 2022), our findings highlight the complex governance structures required to move beyond mere rhetoric and achieve this objective. The difficulties of reporting the results of local-level follow-up of SDGs implementation to feed into national (and, by extension, global) FUR processes emerged as a key theme during the analysis of the interviews. Participants stressed that there seemed to be limited integration between VLRs and VNRs despite cities receiving more support from national governments to implement the SDGs. Several explanations could account for this finding. On the one hand, once cities have adapted the targets and indicators of the 2030 Agenda to their unique circumstances, they may no longer be compatible with the nationally (or globally) defined set of indicators. On the other hand, the relatively limited number of cities in each country conducting a VLR might mean that the results are not representative of the overall national progress on the SDGs.

Some participants discussed ongoing initiatives that could help bridge the gap between national and local-level when operationalising FUR. Bonn, e.g. explained that its 2022 VLR was part of the test phase of a national project to localise indicators in Germany, which aims to facilitate vertical integration in follow-up processes by creating a standardised set of indicators for which data are available in municipalities with more than 5,000 inhabitants (Jossin and Peters 2021; City of Bonn 2022). Initiatives such as this can support better integration across multiple levels of government by advancing a national common framework for

monitoring and reporting on progress on the SDGs at the local level that can be integrated into VNRs more easily. Moreover, country-wide support systems would address some of the challenges that local governments face in selecting indicators and obtaining data, thus enabling more cities to conduct a VLR.

Operationalising the review of SDGs implementation: VLRs and local action

After analysing interviews, we identified three themes to illustrate the approaches used by cities within our sample to operationalise a robust review of their commitments to the 2030 Agenda as part of their VLR process: (i) embedding the SDGs into municipal strategies; (ii) timing FUR exercises with policy cycles; and (iii) integrating FUR into municipal governance structures. These three themes reflect the importance of mainstreaming FUR into all aspects of municipal operations in order to review the implementation of the SDGs and ensure that all departments of the administration are working to advance sustainable development.

A common strategy employed by local governments within our sample to enable consistent reviewing at the local level was to embed the SDGs into strategic planning instruments. This institutionalisation of the SDGs helped maximise the impact of FUR exercises by correlating the KPIs of plans with sustainable development objectives. This strategy for evaluation is well exemplified by the case of Gladsaxe:

“We have integrated the SDGs in our municipality strategy. ... We have not made a specific SDG strategy, we have integrated the SDGs into the core functions of the municipality. So it's a part of the management system and steering system of the entire municipality, within the entire organisation. That means that we have the strategy and we have some indicators [to] follow up that we do actually reach the goals that we have set.”

Gladsaxe's approach to reviewing had the added benefits of promoting ownership of the SDGs and accountability. The quote also emphasises that once the 2030 Agenda is embedded into a city's core policies, the SDGs are no longer an add-on to ongoing and future strategies, but the fundamental principle that guides the entire municipality.

The review of SDGs implementation should not be an afterthought but should proactively guide local action. This would require FUR—and by extension, VLRs—to be both framed and be conducted in synergy with the design, implementation, monitoring, and evaluation of strategies, rather than conducted after activities. During interviews, participants shared that achieving such levels of integration is inherently difficult due to, e.g. the need for strong political commitment to the 2030 Agenda. To overcome these challenges, some cities decided to conduct their VLRs in line with local government cycles—such as electoral cycles, updates to overarching strategies or major sectoral plans—in the hope that timing their principal tool to review the SDGs strategically would promote an evidence-based and sustainable decision-making model for local government.

When discussing the timing of review processes, participants had different views. Some city officials, e.g. noted the importance of aligning their VLRs with relevant political cycles. This helps to build political support for SDGs localisation—an aspect that is fundamental to accelerating sustainable development at the local level (Allen et al. 2018; Masuda et al. 2021). On the other hand, FUR processes underpinned by well-timed local reviews could inform policymakers' decisions, allowing them to steer local

strategies to maximise their contribution to sustainability goals. As noted by Ghent's interviewee:

"[A VLR] is like a compass. Are we evolving in the right direction, or not? ... We will publish our new VLR next year [just before the new local elections]. [As a result] The new administration will have very clear documents about what is going good and what isn't going good in the city. It's data driven. ... We try to give the right information to the politicians to make a long-term strategy. It's a very good framework."

As Ghent's case suggests, aligning FUR with political cycles could also increase the ability of local administrations to address changing environments and adapt policies to emerging issues like the COVID-19 pandemic.

The case of Helsinki offers an alternative approach to scheduling the review of SDGs implementation. The city aligned its VLR with the development and evaluation phases of the Helsinki City Strategy—which is updated every council term to reflect the city's priorities (City of Helsinki 2021). The 2019 VLR coincided with the midpoint of the Helsinki City Strategy 2017–2021, while the 2021 VLR was conducted at the end of the strategy and as planning for the 2021–2025 term began. This synchronisation allowed for effective monitoring, evaluation and review of SDG progress and, most importantly, to inform the development of the key objectives of the City Strategy.

Participants noted that the ways the SDGs are integrated into local governance is equally important in shaping reviews of SDGs implementation and, more broadly, the impacts of FUR processes. The analysis of our data shows that the location of the team responsible for the implementation of the SDGs (therefore of FUR) within the municipal governance structure varies greatly from case to case—e.g. directly under the mayor's office supervision, in the international relations department, or spread across the organisation. In a few cases, the location of the team changed over time adding uncertainties or forcing participants to reshape their activities.

Several city officials observed that, to integrate review exercises into local governance, it was beneficial to have formal processes in place to collaborate with and report to key political figures and/or decision-makers in local governments. In Ghent, e.g. working with the mayor enabled "strategic coordination," which was helpful in keeping the follow-up and review of the SDGs as a priority in the administration. Working closely with the city council was also identified by participants as maximising the impact of FUR in the review of policies, since it implies a strong mandate to locally advance the SDGs.

Regardless of location, the team responsible for the VLR needed the cooperation of other departments to operationalise various components of review processes. This speaks to the need for governance structures that enable greater policy integration, which is key to deliver the 2030 Agenda (Stafford-Smith et al. 2018; Brand et al. 2021; Elder 2025). Participants found conducting VLRs to be particularly useful in advancing FUR efforts holistically while breaking down longstanding siloes in local policymaking. In the case of Stuttgart, the interviewee explains:

"[SDGs localisation through our VLR] provided us with a comprehensive framework that also fosters cross-sectoral and interdisciplinary cooperation within the administration. [It provided] a creative space [where] we can test instruments and develop them further. ... [This process] makes the SDGs more tangible. [It helps colleagues in different departments realise that FUR is] not so much about doing something

additional or new, but rather about a change of perspective and using the SDGs as a framework to have more targeted measures."

The quote highlights that FUR, especially when review exercises are conducted through a VLR, can promote policy integration within the local administration by facilitating collaboration between different departments and the identification of synergies and trade-offs between their actions (Ortiz-Moya and Reggiani 2023). This, in turn, can lead to the revision of existing policies or the creation of new ones for sustainable development.

FUR to shape local policy making: sustainability budgeting to reinforce VLR processes and accelerate the implementation of the SDGs

During the interviews, we asked participants to identify ways in which FUR conducted through VLRs is shaping local policy making to accelerate the implementation of the 2030 Agenda. In most cases, sustainability budgeting—i.e. the integration of sustainable development concerns into budgeting processes to steer actions towards sustainable pathways (Wilkinson et al. 2008)—emerged as an area of experimentation for mainstreaming the SDGs into core local government processes. Sustainability budgeting, also known as green budgeting, is not a new concept—the Brundtland Report already recommended governments to ensure that their budgets promote sustainable development (Brundtland 1987; Jordan and Lenschow 2010). However, the idea has recently gained momentum in international forums as a key tool for governments at all levels to strengthen the implementation of the 2030 Agenda (UNDP 2020; OECD 2022).

Our interviews suggest that adopting sustainability budgeting enhances the VLR process by reinforcing both monitoring and evaluation of SDGs implementation at the local level. This is because sustainability budgeting enables governments to develop specific indicators to quantify, assess, and optimise the contributions to the SDGs brought by local policies. In turn, the ability of FUR conducted via VLR to steer policymaking is strengthened when sustainable development is linked to financial considerations explicitly, e.g. through SDG-aligned procurement and policy adoption.

In the development of its sustainability budgeting, the case of Bonn is exemplary as the city has started "to transform the complete municipal budget tools" to test how they can support FUR efforts. In particular, our interviewees highlighted that sustainability budgeting holds great potential to strengthen local monitoring due to the more granular data generated to address financial performance:

"The data generated for the sustainability budgeting can give a more realistic picture of what the municipality actually does. It might not give [a full comprehensive] picture, but it is more closely linked to the work [of each department]. The process to build up a sustainability budgeting [can help] to develop meaningful key performance indicators with regards to sustainability. [Thus we look at indicators that can actually be influenced by the municipality, That is something that we discussed very often ... [and] this data describes the situation within the city."

Bonn's experience suggests that the adoption of sustainability budgeting can facilitate the development of more effective measurement tools for assessing municipal progress towards the SDGs. This is because, by bringing together financial performance and sustainable development, the sets of data used for

budgeting and budgeting-related indicators are more closely linked to municipal action than global indicators. Additionally, the case of Bonn shows that sustainability budgeting focuses on monitoring performance indicators for which the local government is directly responsible, thus making it possible to measure the impact of its policymaking efforts on sustainable development more transparently.

The analysis of interviews highlights that, when it comes to FUR in general and VLRs in particular, sustainability budgeting can also contribute to policy evaluation and review—especially once the SDGs have been integrated into local strategies and governance structures (UNDP 2020). Helsinki noted that, since budgeting is a “core process” that includes key “operational targets” for the municipality and is run every year, it helps to “evaluate how well these targets meet SDGs and what could be improved.” In the case of Stuttgart, the city explicitly linked its VLR and budgeting timelines so that monitoring and evaluation efforts are integrated and can better steer municipal action.

When FUR and sustainable budgeting are aligned, this has significant implications for SDGs localisation. In particular, as highlighted by Gladsaxe’s interviewee, a purposeful focus on budgeting helps mainstreaming the SDGs across all departments and activities of the local government:

“[After] we integrated the SDGs in our municipality strategy. ... they have been further integrated into practice. ... [and] into our core functions of the municipality. ... [In particular] we integrated the SDGs and sustainability into our budget every year. So, if there is something you want to have in the budget, you have to make a connection on how it provides more sustainability in Gladsaxe. [Otherwise ,] you can’t have it approved.”

Gladsaxe’s example illustrates how sustainability budgeting allows for the lasting impact of local government action by orienting projects and procurement efforts to meet the standard of the SDGs.

Overall, our analysis suggests that sustainability budgeting is emerging as an innovative mechanism in the pursuit of Follow-up and Review of the SDGs via Voluntary Local Reviews. Unlike *ad hoc* interventions, sustainability budgeting offers a holistic and systematic perspective that aligns well with the principles of VLRs. Furthermore, integrating considerations of financial performance and sustainable development has the potential to enhance the effectiveness of VLRs, particularly in addressing public procurement.

Discussion

There is still insufficient understanding of how FUR is conducted to implement the SDGs and accelerate sustainable development, particularly at the local level. By examining seven European cities that conducted two or more VLRs between 2019 and 2022, we provide new empirical evidence on how local governments operationalise FUR through VLRs. Our findings illustrate how VLRs—one of the tools used to localise, implement, and monitor the 2030 Agenda—can structure FUR processes to significantly contribute to accelerating the SDGs.

Our results gave nuance to the four hypotheses. Overall, our findings indicate that cities began to operationalise FUR through VLRs by adapting existing monitoring and reporting mechanisms to the SDGs. Subsequent iterations of VLRs have allowed cities to align more closely with the 2030 Agenda, and to enhance the sophistication of FUR processes. This has facilitated the shaping of

policy and the introduction of new mechanisms, such as sustainability budgeting, to implement the SDGs. Despite the challenges associated with working with the 2030 Agenda at the local level, our interviews provide empirical evidence that conducting FUR through VLRs fosters innovative approaches potentially accelerating the transition to sustainable development pathways.

In line with our first hypothesis, our analysis indicates that VLRs contribute to the operationalisation of FUR in cities during the follow-up stage in two ways. First, by supporting local monitoring of targets and indicators that aligns the SDGs with specific priorities and available data. Second, VLRs have a focus on reporting and this facilitates policy review, accountability, and the sharing of best practice. Our findings also corroborate the second hypothesis that localising the SDGs hinders the integration of FUR across different governance levels. Our cases highlight that achieving integration of local monitoring efforts into national and global FUR is difficult, particularly when follow-up is focused on designing unique indicators to measure progress at the local level—which makes it harder to bridge the gap between different levels of planning and governance when it comes to sustainable development.

The third hypothesis that FUR is disconnected from broader municipal governance structures was not supported. In contrast, we found that conducting FUR via VLRs was beneficial to evaluating local governments’ efforts to implement the SDGs. Reflecting on their VLRs, participants highlighted three key strategies to facilitate the operationalisation of FUR frameworks at the review stage: (i) by embedding the SDGs in municipal strategies, (ii) by timing FUR exercises to coordinate with policy cycles; and (iii) by integrating FUR into municipal governance structures. Overall, these three approaches to the review process reflect different levels of institutionalisation and mainstreaming of sustainable development principles in local government activities. Local FUR exercises, could therefore help to create more effective institutional arrangements and policy frameworks for local governments to deliver the 2030 Agenda.

Surprisingly, regarding the fourth hypothesis, our data highlights that the local governments in our sample do not employ VLRs solely to operationalise FUR. On the contrary, as suggested by the 2030 Agenda, our participants engage with local FUR as an opportunity to test new approaches to accelerate the implementation of the SDGs—as aspect recognised in the literature as critical to successfully implement the SDGs (Ortiz-Moya and Kataoka 2022). Among these novel approaches, sustainability budgeting emerged during the interviews as a tool to further institutionalise the SDGs and maximise the impact of FUR. This is because it links sustainable concerns to financial performance, which is one of the main priorities of local governments (Preuss 2009; UNDP 2020; OECD 2022; Cohen et al. 2023). While further research is needed in this area, this finding strengthens the case for the synergistic implementation of sustainability budgeting and VLRs. Finding synergies between global agendas and municipal priorities not only holds promise for comprehensive and impactful localisation of the SDGs, but is also a valuable lesson that can inform the post-2030 Agenda debate.

When considering the findings, it is important to note that the European cities in our sample have all accumulated significant experience with sustainable development agendas over the years. This has influenced our findings by drawing attention to more advanced aspects of SDG monitoring and evaluation thanks to existing frameworks that generally only required refinements to align with the 2030 Agenda. On the other hand, focusing on cities that have conducted two or more VLRs allows for a deeper

understanding of the operationalisation of FUR, as it has become better internalised into municipal operations. Despite its exploratory nature and relatively small sample of cities, this study provides valuable insights into the dynamics of FUR and the iterative improvements facilitated by recurring VLRs.

The empirical evidence provided by this study underscores the central role of cities and other sub-national governments in implementing the SDGs, and highlights the need for increased focus on innovative local approaches such as VLRs. While our research helps to fill significant gaps in the literature on the processes and considerations that local governments use to follow-up and review the SDGs, several questions remain unanswered. Based on our analysis, we identify two key areas for future research: (i) the persisting gaps between the global monitoring framework, its targets, and indicators, and the practical realities of local governments; and (ii) the development of integrated, resilient, and effective FUR processes to accelerate SDG implementation. Addressing these questions would require not only a paradigm shift in academic discourse to incorporate more empirical evidence, but also greater collaboration between policymakers, scholars, practitioners, and other stakeholders.

Many of the challenges local governments face in implementing FUR stem from the nation-centric design of the 2030 Agenda (Moallemi et al. 2019; Ningrum et al. 2023; Ortiz-Moya et al. 2023). In terms of practical implications, our findings suggest that integrating local and regional governments in the follow-up and review architecture of the 2030 Agenda—and potentially, other global agendas—is feasible, but would require concerted efforts at both global and local levels. Such integration would involve redefining targets and indicators to better reflect local realities, and establishing formal mechanisms for subnational reviews at the HLPF and other UN regional forums. Official recognition of VLRs is crucial to empower local and regional governments to effectively engage with the 2030 Agenda, whose adoption remain limited to a relatively small number of cities despite their increasing recognition in international debates on sustainability (Ortiz-Moya and Kataoka 2022).

We found that the VLR process helps to operationalise FUR by translating the ambitions of the SDGs to local procedures and governance structures. However, our results also highlight that this localisation process brings about a number of trade-offs, particularly in terms of international monitoring of the implementation of the 2030 Agenda. Thus, we would recommend local governments to think carefully about the primary objective of their VLR. If the purpose is to use VLRs to follow up and review the SDGs locally, cities can focus on adapting their existing monitoring and evaluation processes to the SDGs—a strategy that has proven effective in many of our cases. Conversely, if the aim is to contribute to national FUR and global reporting, local governments should align their VLR with nationally (or globally) prescribed indicators; this alignment would ensure that local monitoring can feed into their country's VNR while also facilitating comparisons with other cities or countries. These two options are not mutually exclusive; ideally, cities should pursue FUR processes through VLRs that both contribute to local policymaking and to national and global sustainable development efforts.

Conclusion

In this paper, we have examined how European cities are operationalising FUR through VLRs and how they use FUR to shape policymaking to accelerate the implementation of the 2030 Agenda. Our analysis suggests that, through VLRs, local governments

operationalise both follow-up and review in ways that capitalise on existing monitoring and evaluation frameworks. At the same time, the progressive integration of FUR exercises at the local level has led to better institutionalise and mainstream sustainable development in municipal activities.

Early theoretical research had warned that it is unclear how FUR can maximise progress towards the SDGs (Persson et al. 2016). This study contributes to filling this gap by revealing that cities are using VLRs not only to operationalise FUR, but also to pioneer innovative mechanisms to implement the SDGs with potentially lasting impact on local governance. Our findings suggest that this is more likely to happen when FUR exercises are embedded in core city processes. Recognising these local FUR efforts would empower a greater number of local and regional governments to redouble their commitment to sustainability, provide a more granular picture of the current state of SDG achievement, and open up opportunities to test new ways of maximising progress towards a sustainable future.

Building on these findings, we propose that the key themes identified in our interviews—localising the 2030 Agenda, enhancing transparency and accountability, streamlining policymaking processes, and integrating sustainability budgeting—can be retooled into a practical toolkit for benchmarking the effectiveness and efficiency of FUR processes through VLRs. This toolkit can help systematise FUR processes by providing baseline expectations for developing VLRs. In practice, it ensures that VLR processes: (i) support the localisation of the 2030 Agenda by embedding sustainable development principles across all municipal operations; (ii) are transparent and hold governments accountable to their residents through clear assessment and reporting of SDG progress; (iii) integrate sustainable development principles into core municipal governance structures; and (iv) link SDG actions to concrete budgets, reflecting a commitment to implementing the 2030 Agenda.

While prescriptive, this toolkit is designed to be flexible, allowing cities to adapt the VLR process to meet their unique needs. Importantly, it views FUR through VLRs as a transformative process that not only aligns with the 2030 Agenda, but also contributes to advancing global sustainability beyond it. Additionally, this toolkit provides a foundation for future research, where its applicability across diverse contexts and other levels of government, such as regional administrations, could be further explored and refined.

Acknowledgements

The authors would like to express their gratitude to the participants for this study. Thanks also go to the anonymous reviews and the journal editors for their comments. We are grateful to Emma Fushimi for her support in proofreading the paper.

Author contributions

Fernando Ortiz-Moya (Conceptualization [lead], Data curation [lead], Formal analysis [equal], Methodology [equal], Writing—original draft [equal], Writing—review & editing [equal]) and Marco Reggiani (Conceptualization [supporting], Formal analysis [equal], Methodology [equal], Writing—original draft [equal], Writing—review & editing [equal])

Supplementary data

Supplementary data are available at JUECOL online.

Conflict of interest: None declared.

Funding

This research was supported by the Environment Research and Technology Development Fund [JPMEERF20221M03] of the Environmental Restoration and Conservation Agency provided by the Ministry of the Environment, Japan.

Data availability

The data are not publicly available as they contain information that could compromise the privacy/consent of research participants. Explicit consent to deposit raw transcribed data was not obtained from participants. Upon reasonable and valid request, the data that support the findings of this study are available from the corresponding author.

References

- Abraham DB. Local SDG indicators for US cities and communities. In: Abraham DB, Iyer SD (eds.), *Promoting the Sustainable Development Goals in North American Cities: Case Studies & Best Practices in the Science of Sustainability Indicators*. Cham: Springer International Publishing, 2021, 147–55. https://doi.org/10.1007/978-3-030-59173-1_11
- Adams B, Judd K. 2030 Agenda and the SDGs: Indicator Framework, Monitoring and Reporting. Montevideo: Global Policy Watch, 2016.
- Allen C, Metternicht G, Wiedmann T. Initial progress in implementing the sustainable development goals (SDGs): a review of evidence from countries. *Sustain Sci* 2018;**13**:1453–67. <https://doi.org/10.1007/s11625-018-0572-3>
- Ansell C, Sørensen E, Torfing J. *Co-Creation for Sustainability*. Bingley: Emerald Publishing Limited, 2022, 9–22. <https://doi.org/10.1108/978-1-80043-798-220220002>
- arco. *Linee guida per la redazione di Voluntary Local Review in Italia*. Ministero dell'ambiente e della sicurezza energetica, arco, 2024.
- Beisheim M, Fritzsche F. The UN high-level political forum on sustainable development: an orchestrator, more or less? *Global Policy* 2022;**13**:683–93. <https://doi.org/10.1111/1758-5899.13112>
- Bexell M, Jönsson K. Responsibility and the United Nations' sustainable development goals. *Forum Dev Stud* 2017;**44**:13–29. <https://doi.org/10.1080/08039410.2016.1252424>
- Bexell M, Jönsson K. Country reporting on the sustainable development goals—the politics of performance review at the global-national nexus. *J Hum Dev Capab* 2019;**20**:403–17. <https://doi.org/10.1080/19452829.2018.1544544>
- Biermann F, Kanie N, Kim RE. Global governance by goal-setting: the novel approach of the UN sustainable development goals. *Curr Opin Environ Sustain* 2017;**26–27**:26–31. <https://doi.org/10.1016/j.cosust.2017.01.010>
- Biermann F, Sun Y, Banik D et al. Four governance reforms to strengthen the SDGs. *Science* 2023;**381**:1159–60. <https://doi.org/10.1126/science.adj5434>
- Bilsky E, Moreno AC, Fernández Tortosa A. Local governments and SDG localisation: reshaping multilevel governance from the bottom up. *J Hum Dev Capab* 2021;**22**:713–24. <https://doi.org/10.1080/19452829.2021.1986690>
- Bjørnholt B, Larsen F. The politics of performance measurement: 'evaluation use as mediator for politics'. *Evaluation* 2014;**20**:400–11. <https://doi.org/10.1177/1356389014551485>
- Brand A, Furness M, Keijzer N. Promoting policy coherence within the 2030 agenda framework: externalities, trade-offs and politics. *PaG* 2021;**9**:108–18. <https://doi.org/10.17645/pag.v9i1.3608>
- Braun V, Clarke V. Thematic analysis. In: Cooper H, Camic PM, Long DL, Panter AT, Rindskopf D, Sher KJ (eds.), *APA Handbook of Research Methods in Psychology, Vol 2: Research Designs: Quantitative, Qualitative, Neuropsychological, and Biological*. Washington, DC: American Psychological Association, 2012, 57–71. <https://doi.org/10.1037/13620-004>
- Braun V, Clarke V. *Thematic Analysis: A Practical Guide*, 1st edn. London: SAGE Publications Ltd., 2021.
- Breuer A, Janetschek H, Malerba D. Translating sustainable development goal (SDG) interdependencies into policy advice. *Sustainability* 2019;**11**:2092. <https://doi.org/10.3390/su11072092>
- Breuer A, Leininger J. Horizontal accountability for SDG implementation: a comparative cross-national analysis of emerging national accountability regimes. *Sustainability* 2021;**13**:7002. <https://doi.org/10.3390/su13137002>
- Breuer A, Leininger J, Malerba D. Governance mechanisms for coherent and effective implementation of the 2030 agenda: a cross-national comparison of government SDG bodies. In: Breuer A, Malerba D, Srigiri S, Balasubramanian P (eds.), *Governing the Interlinkages between the SDGs*. Abingdon: Routledge, 2022, 51–70.
- Briggs J, Trundle A, Boulton J et al. *Global SDG Cities Benchmarking Report 2022—SDGs for Melbourne*. Melbourne: Melbourne Centre for Cities, University of Melbourne, 2022. https://research.monash.edu/files/506138051/401258499_oa.pdf
- Bristol City Council. *One City Plan*. Bristol: Bristol City Council, 2019.
- Brundtland GH. *Our Common Future World; Commission on Environment and Development*. New York: United Nations, 1987.
- CDP. *What Did the 2020 Voluntary National Review (VNR) Reports Still Not Tell Us?* (CDP Background Paper, No. 52). New York: United Nations Committee for Development Policy, UN Secretariat, 2021.
- CDP. *What Are the Voluntary National Reviews (Still) Not Telling Us?* (CDP Background Paper, No. 54). New York: United Nations Committee for Development Policy, UN Secretariat, 2022.
- CEPAL. *Territorialización de los Objetivos de Desarrollo Sostenible en América Latina y el Caribe, Guía para la Elaboración de Exámenes Locales Voluntarios a Nivel Subnacional (Documentos de Proyectos)*. Santiago: Comisión Económica para América Latina y el Caribe, 2024.
- Ciambra A, Siragusa A, Proietti P et al. Monitoring SDG localisation: an evidence-based approach to standardised monitoring frameworks. *J Urban Ecol* 2023;**9**:juad013. <https://doi.org/10.1093/jue/juad013>
- City of Bonn. *Voluntary Local Review 2022, The Implementation of the UN Sustainable Development Goals in the City of Bonn*. Bonn: Mayor of the Federal City of Bonn, Office of International Affairs and Global Sustainability, Office for Press, Protocol and Public Relations, 2022.
- City of Helsinki. *Helsinki City Strategy 2021–2025: A Place of Growth*. Helsinki: City of Helsinki, 2021.
- Cohen S, Manes-Rossi F, Brusca I. Are SDGs being translated into accounting terms? Evidence from European cities. *Public Money Manag* 2023;**43**:669–78. <https://doi.org/10.1080/09540962.2023.2243543>
- De Francesco F, Pattyn V, Salamon H. The monitoring and evaluation challenges of the sustainable development goals: an assessment in three European countries. *Sustain Dev* 2024;**32**:1913–24. <https://doi.org/10.1002/sd.2759>
- Donald K, Way S-A. Accountability for the sustainable development goals: a lost opportunity? *Ethics Int Aff* 2016;**30**:201–13. <https://doi.org/10.1017/S0892679416000083>
- Eichhorn S, Hans M, Schön-Chanishvili M. A participatory multi-stakeholder approach to implementing the agenda 2030 for

- sustainable development: theoretical basis and empirical findings. In: Hülsmann S, Jampani M (eds.), *A Nexus Approach for Sustainable Development: Integrated Resources Management in Resilient Cities and Multifunctional Land-Use Systems*. Cham: Springer International Publishing, 2021, 239–56. https://doi.org/10.1007/978-3-030-57530-4_15
- Elder M. Assessment of ASEAN Countries' Concrete SDG Implementation Efforts: Policies and Budgets Reported in Their 2016-2020 Voluntary National Reviews (VNRs). Hayama: Institute for Global Environmental Strategies, 2020.
- Elder M. Integration versus prioritization in the sustainable development goals: an argument to prioritize environmental sustainability and a just transition. *Sustain Dev* 2025;**33**:465–77. <https://doi.org/10.1002/sd.3130>
- Elder M, Newman E. Monitoring G20 countries' SDG implementation policies and budgets reported in their voluntary national reviews (VNRs). *Sustainability* 2023;**15**:15733. <https://doi.org/10.3390/su152215733>
- Fox S, Macleod A. Aligning Bristol's One City Plan with the SDGs. Bristol: Thematic Research Network on Data and Statistics, Local Data Action Solutions Initiative, 2019.
- Fox S, Macleod A. Localizing the SDGs in cities: reflections from an action research project in Bristol, UK. *Urban Geogr* 2023;**44**: 517–37. <https://doi.org/10.1080/02723638.2021.1953286>
- Fukuda-Parr S. Global goals as a policy tool: intended and unintended consequences. *J Hum Dev Capab* 2014;**15**:118–31. <https://doi.org/10.1080/19452829.2014.910180>
- Fukuda-Parr S, McNeill D. Post 2015: a new era of accountability? *J Glob Ethics* 2015;**11**:10–7. <https://doi.org/10.1080/17449626.2015.1004738>
- Georgeson L, Maslin M. Putting the United Nations sustainable development goals into practice: a review of implementation, monitoring, and finance. *Geogr Environ* 2018;**5**:e00049. <https://doi.org/10.1002/geo2.49>
- Giles-Corti B, Lowe M, Arundel J. Achieving the SDGs: evaluating indicators to be used to benchmark and monitor progress towards creating healthy and sustainable cities. *Health Policy* 2020;**124**:581–90. <https://doi.org/10.1016/j.healthpol.2019.03.001>
- Guest G, MacQueen KM, Namey EE. *Applied Thematic Analysis*. Los Angeles: Sage Publications, 2012.
- Gusmão Caiado RG, Leal Filho W, Quelhas OLG et al. A literature-based review on potentials and constraints in the implementation of the sustainable development goals. *J Clean Prod* 2018;**198**: 1276–88. <https://doi.org/10.1016/j.jclepro.2018.07.102>
- IISD. *Voluntary Local Reviews of Progress on the Sustainable Development Goals: A Handbook for Canadian Communities*. Winnipeg: International Institute for Sustainable Development, 2022.
- Jordan A, Lenschow A. Environmental policy integration: a state of the art review. *Env Pol Gov* 2010;**20**:147–58. <https://doi.org/10.1002/et.539>
- Jossin J, Peters O. *Status of the SDG Implementation in German Municipalities: Municipal Contribution to the German Voluntary National Review*. Berlin: German Institute of Urban Affairs, 2021.
- Jossin J, Peters O. Sustainable development goals (SDG) indicators for municipalities: a comprehensive monitoring approach from Germany. *Journal of Urban Ecology* 2022;**8**:juac020. <https://doi.org/10.1093/jue/juac020>
- Kandpal R, Okitasari M. *Advancing Follow-up and Review for the SDGs: Lessons from the 2021 Voluntary National Reviews (UNU-IAS Policy Brief)*. Tokyo: United Nations University Institute for the Advanced Study of Sustainability, 2022. <https://collections.unu.edu/view/UNU:8969>
- Kanie N, Bernstein S, Biermann F, Haas PM. Introduction: global governance through goal setting. In: Kanie N, Biermann F (eds.), *Governing through Goals: Sustainable Development Goals as Governance Innovation*. Cambridge: The MIT Press, 2017, pp. 1–28. <https://doi.org/10.7551/mitpress/9780262035620.003.0001>
- Koike H, Ortiz-Moya F, Kataoka Y, Fujino J. *The Shimokawa Method for Voluntary Local Review (VLR), a Blueprint to Localise the Sustainable Development Goals*. Hayama: Institute for Global Environmental Strategies, 2020. <https://doi.org/10.57405/iges-10779>
- Leavesley A, Trundle A, Oke C. Cities and the SDGs: realities and possibilities of local engagement in global frameworks. *Ambio* 2022;**51**:1416–32. <https://doi.org/10.1007/s13280-022-01714-2>
- Masuda H, Okitasari M, Morita K et al. SDGs mainstreaming at the local level: case studies from Japan. *Sustain Sci* 2021;**16**:1539–62. <https://doi.org/10.1007/s11625-021-00977-0>
- Miola A, Schiltz F. Measuring sustainable development goals performance: how to monitor policy action in the 2030 agenda implementation? *Ecol Econ* 2019;**164**:106373. <https://doi.org/10.1016/j.ecolecon.2019.106373>
- Moallemi EA, Malekpour S, Hadjidakou M et al. Local agenda 2030 for sustainable development. *Lancet Planet Health* 2019;**3**:e240–1. [https://doi.org/10.1016/S2542-5196\(19\)30087-7](https://doi.org/10.1016/S2542-5196(19)30087-7)
- Morita K, Okitasari M, Masuda H. Analysis of national and local governance systems to achieve the sustainable development goals: case studies of Japan and Indonesia. *Sustain Sci* 2020;**15**:179–202. <https://doi.org/10.1007/s11625-019-00739-z>
- Narang Suri S, Miraglia M, Ferrannini A. Voluntary local reviews as drivers for SDG localisation and sustainable human development. *J Hum Dev Capab* 2021;**22**:725–36. <https://doi.org/10.1080/19452829.2021.1986689>
- Ningrum D, Raven R, Malekpour S et al. Transformative potential in sustainable development goals engagement: experience from local governance in Australia. *Glob Environ Change* 2023;**80**:102670. <https://doi.org/10.1016/j.gloenvcha.2023.102670>
- OECD. *A Territorial Approach to the Sustainable Development Goals: Synthesis Report*. Paris: OECD Publishing, 2020. https://www.oecd-ilibrary.org/urban-rural-and-regional-development/a-territorial-approach-to-the-sustainable-development-goals_e86fa715-en
- OECD. *Aligning Regional and Local Budgets with Green Objectives: Subnational Green Budgeting Practices and Guidelines*. Paris: OECD Publishing, 2022.
- Ortiz-Moya F, Kataoka Y. *State of the Voluntary Local Reviews 2022: Overcoming Barriers to Implementation*. Hayama: Institute for Global Environmental Strategies, 2022. <https://doi.org/10.57405/iges-12331>
- Ortiz-Moya F, Kataoka Y. *State of the Voluntary Local Reviews 2024: Strengthening the Local Implementation of the 2030 Agenda (IGES Research Report)*. Hayama: Institute for Global Environmental Strategies, 2024. <https://doi.org/10.57405/iges-12331>
- Ortiz-Moya F, Koike H, Ota J et al. *State of the Voluntary Local Reviews 2020: Local Action for Global Impact in Achieving the SDGs*. Hayama: Institute for Global Environmental Strategies, 2020. <https://doi.org/10.57405/iges-10803>
- Ortiz-Moya F, Reggiani M. Contributions of the voluntary local review process to policy integration: evidence from frontrunner cities. *NPJ Urban Sustain* 2023;**3**:22. <https://doi.org/10.1038/s42949-023-00101-4>
- Ortiz-Moya F, Saraff Marcos E, Kataoka Y, Fujino J. *State of the Voluntary Local Reviews 2021: From Reporting to Action*. Hayama: Institute for Global Environmental Strategies, 2021. <https://doi.org/10.57405/iges-11553>
- Ortiz-Moya F, Tan Z, Kataoka Y. *State of the Voluntary Local Reviews 2023: Follow-up and Review of the 2030 Agenda at the Local Level*.

- Hayama: Institute for Global Environmental Strategies, 2023. <https://doi.org/10.57405/iges-12331>
- Patton MQ. A transcultural global systems perspective: in search of blue marble evaluators. *Can J Program Eval* 2016;**30**:374–90. <https://doi.org/10.3138/cjpe.30.3.08>
- Persson Å, Weitz N, Nilsson M. Follow-up and review of the sustainable development goals: alignment vs. internalization. *Rev Euro Comp Int Environ Law* 2016;**25**:59–68. <https://doi.org/10.1111/reel.12150>
- Preuss L. Addressing sustainable development through public procurement: the case of local government. *Supply Chain Manag Int J* 2009;**14**:213–23. <https://doi.org/10.1108/13598540910954557>
- Regions4. *Localizing the SDGs: Regional Governments Paving the Way*. Brussels: Regions4 and the University of Strathclyde Centre for Environmental Law and Governance (SCELG), 2018.
- Reuter TA. SDG localization: finding the middle ground to top-down and bottom-up approaches with the help of digital networking. *Sustain Sci Pract Policy* 2023;**19**:2207372. <https://doi.org/10.1080/15487733.2023.2207372>
- Ruiz-Campillo X, Rosas Nieva S. Local voluntary reports: the implementation of sustainable development goals in northern and southern cities. *J Urban Ecol* 2022;**8**:1–10. <https://doi.org/10.1093/jue/juac013>
- Sachs JD, Lafortune G, Fuller G, Drumm E. *Implementing the SDG Stimulus*. Paris and Dublin: Sustainable Development Report 2023. SDSN and Dublin University Press, 2023.
- Siragusa A, Stamos I, Bertozzi C, Proietti P. *European Handbook for SDG Voluntary Local Reviews, 2022 Edition*. Luxembourg: European Commission, Joint Research Centre, Publications Office of the European Union, 2022. <https://doi.org/10.2760/670387>
- Siragusa A, Vizacaino P, Proietti P, Lavallo C. *European Handbook for SDG Voluntary Local Reviews*. Luxembourg: European Commission, Joint Research Centre, 2020. <https://doi.org/10.2760/670387>
- Stafford-Smith M, Cook C, Sokona Y et al. Advancing sustainability science for the SDGs. *Sustain Sci* 2018;**13**:1483–7. <https://doi.org/10.1007/s11625-018-0645-3>
- Stafford-Smith M, Griggs D, Gaffney O et al. Integration: the key to implementing the sustainable development goals. *Sustain Sci* 2017;**12**:911–9. <https://doi.org/10.1007/s11625-016-0383-3>
- Swain J. *A Hybrid Approach to Thematic Analysis in Qualitative Research: Using a Practical Example*. London: SAGE Publications, 2018. <https://doi.org/10.4135/9781526435477>
- UCLG and UN-Habitat. *Guidelines for Voluntary Local Reviews: Volume 1, A Comparative Analysis of Existing VLRs*. Barcelona and Nairobi: UCLG and UN-Habitat, 2020.
- UCLG and UN-Habitat. *Guidelines for Voluntary Local Reviews: Volume 2, Towards a New Generation of VLRs: Exploring the Local-National Link*. Barcelona and Nairobi: UCLG and UN-Habitat, 2021.
- UNDESA. *Global Guiding Elements for Voluntary Local Reviews (VLRs) of SDG Implementation*. New York: United Nations Department for Economic and Social Affairs, 2020.
- UNDESA. *Handbook for the Preparation of Voluntary National Reviews. 2024 Edition*. New York: Department of Economic and Social Affairs (DESA), United Nations, 2023.
- UNDP. *Budgeting for the Sustainable Development Goals: Aligning Domestic Budgets with the SDGs, Guidebook 2020.pdf*. Bangkok: UNDP Bangkok Regional Hub, 2020.
- UNECA. *Africa Voluntary Local Review Guidelines*. Addis Ababa: United Nations Economic Commission for Africa, UCLG Africa, and UN-Habitat, 2022.
- UNECE. *Guidelines for the Development of Voluntary Local Reviews in the ECE Region*. Geneva: United Nations Economic Commission for Europe, 2021.
- UNESCAP. *Asia-Pacific Regional Guidelines on Voluntary Local Reviews: Reviewing Local Progress to Accelerate Action for the Sustainable Development Goals*. Bangkok: United Nations Economic and Social Commission for Asia and the Pacific, 2020.
- UNGA. *Resolution Adopted by the General Assembly on Work of the Statistical Commission Pertaining to the 2030 Agenda for Sustainable Development (A/RES/71/313)*. New York: United Nations, 2017.
- UNGA (United Nations General Assembly). *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York: United Nations, 2015.
- UN-Habitat. *Multilevel Governance for SDG Localization*. Nairobi: United Nations Human Settlements Programme (UN-Habitat), 2022.
- UN-Habitat and UCLG. *Action-Oriented Voluntary Local Reviews: A Methodology for the Partners of UN-Habitat*. Nairobi and Barcelona: United Nations Human Settlements Programme (UN-Habitat), 2024.
- Van de Walle S, Cornelissen F. Performance reporting. In: Bovens M, Goodin R, Schillemans T (eds.), *The Oxford Handbook of Public Accountability*. Oxford: Oxford University Press, 2014, 441–55. <https://doi.org/10.1093/oxfordhob/9780199641253.013.0009>
- Wilkinson D, Benson D, Jordan A. Green budgeting. In: Jordan A, Lenschow A (eds.), *Innovation in Environmental Policy?: Integrating the Environment for Sustainability*. Cheltenham: Edward Elgar Publishing, 2008, 70–92.
- Yonehara A, Saito O, Hayashi K et al. The role of evaluation in achieving the SDGs. *Sustain Sci* 2017;**12**:969–73. <https://doi.org/10.1007/s11625-017-0479-4>