THEMATIC CLUSTER: CITIZEN SCIENCE

What roles do civil society organizations play in monitoring and reviewing the Sustainable Development Goals? An exploration of cases from Ecuador, Colombia, and Argentina

Cristina Espinosa a and Gabriela Rangel b

aInstitute of Environmental Social Sciences and Geography, University of Freiburg, Freiburg, Germany; bIndependent Researcher

ABSTRACT
The UN 2030 Agenda and its Sustainable Development Goals (SDGs) constitute an international roadmap to end poverty, revert environmental degradation, and fight socio-economic inequalities. Monitoring and reviewing (M&R) processes can expose countries’ success or failure in achieving the SDGs. However, SDG M&R is a daunting task. Current mechanisms mainly rely on national statistics that lack the necessary spatial and temporal granularity. Building on policy and academic discussions about the potential of citizen science data to fill data gaps in compilations for the SDG framework, we study projects implemented by civil society organizations (CSOs) in Ecuador, Colombia, and Argentina. Through a theory-sensitive empirical analysis, we systematize five main roles through which CSOs engage in SDG M&R. These roles are (1) participation promoter, (2) information provider, (3) data innovator, (4) watchdog, and (5) advocacy. These roles encompass key activities such as making SDG-relevant data available to citizens, enhancing data literacy, promoting open data from governmental institutions to enhance transparency and accountability, producing counter-narratives, and encouraging collaboration for data collection. Despite differences in their political qualities and politicizing effects, all five roles contribute to the enabling environment for collective action that is needed in governance for the SDGs.

KEYWORDS
Monitoring and reviewing; Sustainable Development Goals; participation; citizen science data; Latin America

CONTACT
Cristina Espinosa cristina.espinosa@envgov.uni-freiburg.de

RESUMO
Quais são os papéis das organizações da sociedade civil no monitoramento e revisão dos Objetivos de Desenvolvimento Sustentável? Uma exploração de casos do Equador, Colômbia e Argentina

PALAVRAS-CHAVE
Monitoramento e revisão; Objetivos de Desenvolvimento Sustentável; participação; dados da ciência cidadã; América Latina

PALABRAS CLAVE
Monitoreo y revisión; Objetivos de Desarrollo Sostenible; participación; datos de ciencia ciudadana; América Latina

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Monitoramento e a revisão (M&R) dos processos podem expor o sucesso ou o fracasso dos países em alcançar os ODS. Entretanto, a M&R das ODS é uma tarefa gigantesca. Os mecanismos atuais dependem principalmente de estatísticas nacionais que não possuem a granularidade espacial e temporal necessária. Com base nas discussões políticas e acadêmicas sobre o potencial dos dados da ciência cidadã para preencher as lacunas de dados nas compilações para o enquadramento dos ODS, estudamos projetos implementados por organizações da sociedade civil (OSCs) no Equador, Colômbia e Argentina. Através de uma análise empírica sensível à teoria, sistematizamos cinco funções principais através das quais as OSC se engajam na M&R dos GDS. Estes papéis são (1) promotor de participação, (2) fornecedor de informação, (3) inovador de dados, (4) fiscalizador, e (5) defensor. Estas funções abrangem atividades-chave, tais como tornar os dados relevantes aos ODS disponíveis para os cidadãos, melhorar a alfabetização de dados, promover dados abertos de instituições governamentais para aumentar a transparência e a responsabilidade, produzir contra-narrativas, e incentivar a colaboração para a coleta de dados. Apesar das diferenças em suas qualidades políticas e efeitos politizados, todas as cinco funções contribuem para o ambiente propício a favor da ação coletiva que é necessária na governança dos ODS.

¿Cuáles son los roles de las organizaciones de la sociedad civil en el monitoreo y revisión de los Objetivos de Desarrollo Sostenible? Una exploración de casos de Ecuador, Colombia y Argentina

RESUMEN
La Agenda 2030 de las Naciones Unidas y sus Objetivos de Desarrollo Sostenible (ODS) constituyen una hoja de ruta internacional para acabar con la pobreza, revertir la degradación medioambiental y luchar contra las desigualdades socioeconómicas. Los procesos de monitoreo y revisión (M&R) pueden evidenciar el éxito o el fracaso de los países en la implementación de los ODS. Sin embargo, el M&R de los ODS es una tarea de enormes proporciones. Los mecanismos actuales se basan principalmente en estadísticas nacionales que carecen de la granularidad espacial y temporal necesaria. A partir de los debates políticos y académicos sobre el potencial de los datos de la ciencia cidadana para llenar los vacíos de datos en las compilaciones para el marco de los ODS, estudiamos tres proyectos implementados por organizaciones de la sociedad civil (OSC) en Ecuador, Colombia y Argentina. A través de un análisis empírico informatizado por teoría, sistematizamos cinco roles principales a través de los cuales las OSC se involucran en el M&R de los ODS. Estos roles son (1) promotor de la participación, (2) proveedor de información, (3) inovador de datos, (4) fiscalizador y (5) defensor. Estas funciones abarcan actividades clave como poner a disposición de los ciudadanos datos relevantes para los ODS, mejorar la alfabetización en materia de datos, promover los datos abiertos de las instituciones gubernamentales para mejorar la transparencia y la rendición de cuentas, producir contra-narrativas y fomentar la colaboración para la recopilación de
1. Introduction

In September 2015, the United Nations (UN) General Assembly adopted Resolution 70/1, titled “Transforming our world: the 2030 Agenda for Sustainable Development.” This Agenda, with its 17 Sustainable Development Goals (SDGs) aims to end all types of poverty, reverse environmental degradation, and fight socio-economic inequalities (Bowen et al. 2017). Although the Resolution is not legally binding, all UN member states have committed to achieving these goals through national sustainable development strategies (Saner, Yiu, and Nguyen 2020). However, efforts have also been made to localize the implementation of the SDGs. A global framework with 169 targets and 231 indicators helps to monitor and review (M&R) countries’ sustainable development efforts vis-à-vis their global commitments (Fraisl et al. 2022).

The SDGs are considered more ambitious and transformative than their predecessors, the Millennium Development Goals (MDGs) (Bowen et al. 2017, 90). The new goals are universal in scope, target all countries, and foreground environmental sustainability as essential for achieving social and economic development. As such, the SDGs maintain a strong focus on environmental justice and inclusion, exemplified by the slogan “leaving no one behind” (Biermann, Kanie, and Kim 2017, 27). The idea of participation is also central to the goals (Sriskandarjah 2018). The international negotiations that led to the SDGs have been celebrated as an innovative and inclusive democratic process with ample provisions for non-state participation (United Nations 2015). Under UN coordination, various non-state actors were engaged through multiple formats that ranged from focus group discussions to offline and online surveys (Sénit 2020a). These actors included youth, civil society, the media, the private sector, unions, academia, and other stakeholders. The information gathered through this engagement is considered to be the basis for the SDGs. Likewise, “people action,” or the participation of the actors listed above, is expected to contribute to the realization of the SDGs (United Nations 2022).

From a theoretical perspective, the participation of civil society in global sustainability policy processes has generally been expected to enhance the legitimacy, acceptability, and efficiency of policy implementation (Bäckstrand 2006). Empirically, recent scholarship has critically examined the influence of civil society in the formulation of the SDGs (Sénit 2020a, 2020b). However, research has not sufficiently focused on civil society participation in the more technical aspects of global policy processes linked to sustainable development. These include M&R of the SDGs. We explore this topic in the Latin American context by looking at civil society organizations (CSOs) and their projects connected to SDG M&R. We rely on the UN’s definition of “civil society” as non-state and not-for-profit actors which pursue a wide range of interests. CSOs can be community-based organizations or larger, and better-resourced, non-governmental organizations (NGOs) (Sénit 2020a).

M&R is based on a general assumption that greater knowledge and deeper expertise lead to better decisions. In the concrete case of the SDGs, M&R enables the measurement of progress made by countries towards goal achievement. It also reveals areas where
more public intervention, funding, and concerted actions are required for the successful implementation of the SDGs (Saner, Yiu, and Nguyen 2020). To realize such aims, it is essential to have access to “timely, relevant and reliable data” (Fraisl et al. 2022, 81). Because official government statistics are often insufficient, a dynamic body of literature has discussed ways in which unofficial and alternative data sources can complement the official data (Fraisl et al., 2020, 2022; Fritz et al. 2019). One such data source is “citizen science data” (CSD), or data generated by citizens through various technologies and participatory methodologies (Ballerini and Bergh 2021).

Policy and academic discussions have debated the limitations and advantages of integrating CSD into SDG M&R (Jameson, Lämmerhirt, and Prasetyo 2017; Higgins and Cornforth 2015; Fritz et al. 2019). Theoretical arguments about how CSD can fill temporal and spatial data gaps in the SDG framework have been empirically tested in studies which offer inventories of CSD projects and assess their current and potential contributions to the SDGs (Fraisl et al. 2020; West and Pateman 2017). Nevertheless, more case-specific research on how CSOs influence M&R of the SDGs is limited (Ballerini and Bergh 2021). Likewise, a strong focus on “technical” issues of CSD interoperability, quality, and reliability has clouded the political and politicizing dimensions of citizen engagement in SDG M&R. As a result, governance, democracy, and power – which are central to SDGs implementation (Bowen et al. 2017) – have not been sufficiently taken into account in relation to these data-related processes.

In this article, we look beyond the role of “filling data gaps” (Fraisl et al. 2020, 2022). Instead, we seek to highlight both the politics of civil society’s engagement with SDG M&R and the political and politicizing aspects of this engagement. Drawing on Brown (2015), we use the term “politics” to designate arrangements of power and authority among actors implicated in governance for sustainable development, as well as the activities that unfold within those arrangements. In relation to this definition, we refer to “political” to designate modes of engagement in politics and understand “politicization” as a process whereby existing politics are challenged and potentially reconfigured.

Guided by our main research question about which roles CSOs play in SDG M&R, we explore three selected projects from Latin America. The first of these projects is “ODS Territorio Ecuador,” which was launched in 2017 by Grupo Faro and Fundación Futuro Latinoamericano (FFLA) and mainly consists of citizen observatories of the SDGs. The second is “Citizen Monitoring of the SDGs,” which was started in 2016 by the Colombian Confederation of NGOs (CCONG) and produces citizen reports to monitor SDGs progress in Colombia. The third is “SDGs Platform” in Argentina which was established in 2017 by the Argentinian Network for International Cooperation (RACI) to reveal how the work done by different CSOs can feed into SDG M&R.

We sought to study examples from Latin America for several reasons. First, we wanted to examine the ways in which CSOs engage in SDG M&R activities in a context in which national statistical offices run all official statistical data, but different challenges hinder the collection of optimal data for SDG M&R (Martín-Guzmán and Aguilera 2015, see next section). Additionally, the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) produces official SDGs M&R progress reports for the region. Second, the region as a whole is characterized by restrictive policies, accusatory and delegitimizing discourses, and reduced international funding for CSOs (Appe and Barragán 2017). Finally, many countries in the region exhibit similar socioeconomic inequalities.
and environmental degradation, exacerbated by the COVID-19 pandemic (López-Feldman et al. 2020). These issues are specifically targeted by the 2030 Agenda and the SDGs. Despite our focus on Latin America, we are cautious about identifying our approach as regional given the country-specific nature of the cases.

In the next section, we sketch out the challenges tied to SDGs M&R. Subsequently, we discuss issues of participation in SDGs-related processes and in citizen science. In Section 4, we sketch out our methodology. In Section 5, we provide an overview of our cases. Then, we describe the roles played by CSOs in SDGs M&R in a Latin American context in Section 6. The last section presents reflections about the political and politicizing dimensions of CSOs’ roles in M&R of the SDGs.

2. The challenge of measuring progress towards SDGs achievement

Despite their importance, there remains a lack of clarity in discussions at the UN regarding what “monitoring” and “reviewing” mean in connection with the SDGs (Saner, Yiu, and Nguyen 2020, 487). These terms are further conflated with “evaluation.” To disentangle this conceptual ambiguity, Saner, Yiu, and Nguyen (2020) state that “evaluation” and “reviewing” entail the retroactive revisiting of past events with the aim of assessing and judging against established criteria the effectiveness of a policy decision or intervention. In contrast, “monitoring” comprises continuous tracking and tracing of decisions and actions (Saner, Yiu, and Nguyen 2020, 484). Each of these practices is expected to contribute to evidence-based policy design and implementation. They are meant to improve the impact, efficiency, and effectiveness of policy interventions, enhance transparency and accountability, and show whether or not policy objectives are met addressing the demand for robust metrics introduced by the MDGs (Sriskandarjah 2018).

As part of Resolution 70/1, signatory countries committed themselves to review their progress towards achievement of the SDGs on a voluntary basis (Saner, Yiu, and Nguyen 2020, 485). To enable such review, concrete targets for each general goal and measurable indicators for each concrete target had to be identified and defined. To manage the development and implementation of a global indicator framework for the goals and targets of the 2030 Agenda, the UN Statistical Commission created the Inter-Agency Expert Group on SDG Indicators (IAEG-SDGs). This group classified indicators into three tiers based on methodology and data availability. Details about the three tiers can be seen in Table 1. To incorporate improvements in data availability and methodology, the IAEG-SDGs has regularly adjusted its indicator classification. As of 2020, from the 231 indicators there were

| Tier       | Definition                                                                 |
|------------|-----------------------------------------------------------------------------|
| Tier 1     | Indicator is conceptually clear, has an internationally established methodology, and standards are available, and data are regularly produced by countries for at least 50% of countries and of the population in every region where the indicator is relevant |
| Tier 2     | Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries |
| Tier 3     | No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested |
| Multiple Tiers | Different components of the indicator are classified into different tiers |

Sources: Saner, Yiu, and Nguyen (2020).
130 Tier 1 indicators, 97 Tier 2 indicators, and 4 indicators with multiple tiers (Fraisl et al. 2022, 81).

Despite these advancements, tracking countries’ progress toward the SDGs through M&R remains a daunting statistical task. A massive amount of data is required and these data should be of high quality, broad in coverage, frequently available, and spatially disaggregated (Fritz et al. 2019). National statistical offices currently provide most M&R data in the context of the SDGs (Saner, Yiu, and Nguyen 2020). However, these can often be technically and politically deficient (Ballerini and Bergh 2021). Technically speaking, official statistics are often costly, time-intensive, and lacking in terms of spatial variation and coverage. This can lead to incomplete and often outdated data sets that may not offer disaggregated information along relevant lines like gender and ethnicity. Missing data can potentially render sensitive populations and topics invisible while also precluding local knowledge and other contextual factors. On the political side, official data might be purposefully used by governments to cherry-pick advancements while concealing their countries’ problems.

Countries submit official data in Voluntary National Reviews (VNRs) to the United Nations High-level Political Forum. VNR is the current review mechanism that assesses countries’ progress and challenges in implementation of the SDGs (Saner, Yiu, and Nguyen 2020, 488). However, analysis has shown that these do not always cover all 17 SDGs, and often do not fulfill the principles of participation, inclusiveness, and transparency which form the core of the 2030 Agenda (Saner, Yiu, and Nguyen 2020, 488).

In 2016, countries in Latin America began efforts to implement the 2030 Agenda by integrating the SDGs into their National Development Plans. At the same time, reporting mechanisms were established for the first VNRs. By 2017, 20 out of 33 countries in the region already had these reporting mechanisms in place (ECLAC and United Nations 2019; ODS Territorio Ecuador-Panorama Sostenible 2020b). In light of cutbacks in official development assistance (Appe and Barragán 2017), integrating the SDGs into national budgets is crucial to make funding available for their implementation. However, only a few countries in the region have achieved such alignment (ECLAC and United Nations 2019). In terms of data collection that could be used for SDGs M&R, “the ethnical diversity and the complex geographical structure in almost all the countries are huge challenges” (Martín-Guzmán and Aguilera 2015, 658). Additionally, many national statistical offices in the region face significant scarcity in material and human resources (Martín-Guzmán and Aguilera 2015).

In response to the above-mentioned limitations and examples of challenges in Latin America, several authors (Fraisl et al. 2020, 2022; Fritz et al. 2019; Sriskandarjah 2018) have called for the integration of non-traditional sources of data into SDG M&R and advocate for a “participatory turn” in these processes (Saner, Yiu, and Nguyen 2020; Sriskandarjah 2018). Here, significant attention has been given to “CSD” produced by volunteers through multiple technologies and participatory methodologies (Ballerini and Bergh 2021). Currently, these data are not included in official SDG compilations (Fraisl et al. 2020, 2) and M&R processes. The reasons for this are diverse. First, SDGs indicators are intended to be based on national-level data, while CSD often have a local focus (Jameson, Lämmerhirt, and Prasetyo 2017). The lack of standardization of CSD methodologies and associated difficulties in ensuring the scientific quality of data generated through them are other key factors (Jameson, Lämmerhirt, and Prasetyo 2017, 22). In
addition, improving existing statistics (useful for the SDGs) is typically only a marginal objective of CSD projects. Instead, these projects primarily produce data to positively impact their communities, improve local public governance, and advance science (Ballerini and Bergh 2021). Alongside, a lack of knowledge of the SDGs and apathy towards the UN hold back CSD projects from engaging with this global framework (Ballerini and Bergh 2021). Despite these issues, empirical research has shown that CSD projects could fill key spatial and temporal SDG data gaps (Fraisl et al. 2020). Although only a handful of CSD projects currently provide data on SDG indicators, over one-third of them have the potential to do so (Fraisl et al. 2020).

3. Civil society participation and citizen science

Participation has long been a central topic in governance for sustainable development, a focus reflected in the 2030 Agenda and the SDGs (Saner, Yiu, and Nguyen 2020; Sriskandarjah 2018). It has been argued that the inclusion and amplification of marginalized voices, like those of youth, indigenous people, and women, is crucial for achieving sustainable development because it strengthens the democratic foundation of steering mechanisms towards sustainability (Bäckstrand 2006, 470, Independent Expert Advisory Group 2014, 27). Participation is also seen to have a value in governance-related processes. For example, participation may improve the quality of decision-making by incorporating locally held knowledge and thus enabling social learning among all involved stakeholders (Newig and Fritsch 2009, 200). This can help to identify solutions that resonate with multiple, often conflicting, interests and agendas. In the case of SDG M&R, the more different actors participate, the more different topics will be reflected in these processes (Saner, Yiu, and Nguyen 2020; Fisher and Fukuda-Parr 2019). In the same vein, non-state actors’ participation in governance processes can also provide entry-points to actor-networks in which there is resistance or apathy towards sustainability initiatives. Through these entry-points, sustainability objectives can be introduced and socialized. Furthermore, the inclusion of stakeholders increases the acceptance of decisions, thus improving implementation and compliance on the ground (Newig and Fritsch 2009, 200). While serving as a constructive force in democratizing governance, CSOs are indisputably political actors with a primary focus on working toward their own agendas (Bäckstrand 2006, 469).

As described by Arnstein (1969, 216) not all participatory processes are equal. This could be understood through the metaphor of a ladder. At the bottom of the ladder are tokenistic processes that symbolically include citizens and at best inform them about decisions taken beforehand. Toward the top of the ladder are processes in which citizens are meaningfully consulted, or even empowered to take on collective project design and decision-making. In global decision-making, legal and regulatory restrictions inhibit participation of non-state actors (Sriskandarjah 2018). The development of international agreements is the exclusive domain of states, which delimit participation rules, determine the extent of such participation, and do not give voting rights to civil society actors (Sénit 2020a, 694). Under such conditions, the participation of civil society in the formulation of the SDGs has not translated into substantial influence. In general, the process has tended to exclude the interests of the most marginalized while benefiting powerful actors (i.e. highly institutionalized CSOs with significant financial and human resources) (see Sénit 2020a, 2020b). Therefore, civil society’s
participation in the SDGs formulation can be assessed as “tokenistic” despite the broad provisions for engaging non-state actors (Howard and Wheeler 2015, 552).

As regards SDG M&R, there is optimism concerning citizen participation. Citizens can supposedly take part in these processes easily because no sophisticated data analytics are required (Saner, Yiu, and Nguyen 2020, 484). As mentioned in the introduction, the participation of civil society in SDG M&R has mainly been discussed under the umbrella of CSD, based on the idea that this non-traditional data source can fill spatial and temporal data gaps in the SDG framework. In general, citizen science is a form of collaboration involving members of the public in scientific research projects to address real-world problems (Wiggins and Crowston 2011, 1). This term is used interchangeably with other concepts like community science and community-based monitoring (Fraisl et al. 2020, 1736). As in policy making, such public collaboration can involve different degrees of participation.

To shed additional light on the different dynamics, roles, and understandings of actors involved in citizen science, two main perspectives have been proposed: instrumental and democratic. The instrumental perspective takes citizen science as a useful tool, method, or form of collaboration between volunteers and scientists and focuses on the collection of data (Cooper and Lewenstein 2016). The democratic perspective, on the other hand, takes a more political stance conceiving citizen science as a movement to democratize scientific research. This perspective focuses on the process of collaborative research design and question formulation based on citizens’ own concerns (Cooper and Lewenstein 2016, 54; Eitzel et al. 2017; Shirk et al. 2012). Given our interest in the political and politicizing aspects of civil society’s engagement in SDG M&R and the potential to alter authority arrangements and power distribution (Brown 2015) in the context of the SDGs, this paper aligns with this democratic perspective on citizen science.

4. Methodology

This study follows a qualitative methodology with a multiple-case design. Our research objective is to examine how CSOs contribute M&R in the context of the SDGs. Studying more than one case is useful because it offers the potential to unveil key factors or patterns across projects that provide regional insights. While this study does not aim to generalize for all Latin America, the simultaneous study of various cases still offers a more comprehensive view of the research topic (Yin 2018) and allows for a wider exploration of research questions (Creswell and Creswell 2018).

4.1. Case selection

Given the exploratory nature of this study, we first performed desk research to identify suitable cases. A preliminary resource was the report from “ODS Territorio Ecuador” (January/2020) Buenas prácticas de observatorios en la región para el monitoreo de los ODS. Boletín informativo de Panorama Sostenible (Good practices from the regional observatories for SDG monitoring) (ODS Territorio Ecuador 2020a). This report highlights projects from CSOs in Latin America related to M&R of the SDGs. Based on this resource, we conducted a purposive sampling of additional cases for which we found additional sources to crosscheck suitable case selection. Additional sources were the ECLAC platform (https://observatorioplanificacion.cepal.org/es) and the ECLAC online regional
observatory for development planning (https://observatorioplanificacion.cepal.org/es/sdgs). In the latter, there is a section for SDGs territorialization. Projects from CSOs related to M&R of the SDGs are listed here. For further assessment, we conducted an internet search following these selection criteria: as regional scope, Latin America; project information should be in the public domain, available online (not necessarily operational to date), accessible using computers with an internet connection; be related to SDG M&R and the 2030 Agenda; be from one or various CSOs. We also sought to have three projects from three different countries with three different objectives.

We identified 18 potential cases. From those, four cases met the pre-defined selection criteria. From these four, we selected three cases that had the most information available: (1) “ODS Territorio Ecuador” in Ecuador; (2) “Citizen Monitoring of the SDGs” in Colombia; and (3) “SDG Platform” in Argentina.

4.2. Information gathering

In the next step, we conducted a qualitative analysis of academic papers and gray literature from the fields of governance for sustainable development and STS that focused on the role of CSOs in SDG-related processes. Similarly, we analyzed reports focusing on CSD or citizen science linked to SDG M&R. We next identified and downloaded 67 documents from the websites of the selected cases. Most of the documents were published between 2016 and 2020. For “ODS Territorio Ecuador,” we reviewed 29 documents: 10 bulletins, 10 monthly reports, 2 annual publications, and 7 policy briefs and presentations. For “Citizen Monitoring of the SDGs” in Colombia, we reviewed 26 documents: 5 citizen monitoring reports, 4 newsletters, 11 policy briefs, 4 research articles, and 2 recommendations to the government. Finally, for the “SDGs Platform in Argentina,” we studied 12 documents, including 3 annual reports, 4 research articles, and 5 presentations. We also examined data from the “About us” section of this project’s website and accessed web articles about the working groups. Compared to the other two cases, there were less downloadable documents for the “SDGs Platform” in Argentina. All analyzed project documents were in Spanish, which is our native language. We translated all direct quotes from these documents into English.

4.3. Coding and analysis

The data collected from project websites and secondary sources were systematically organized and the resulting material was then manually coded in Microsoft Excel. Through various, iterative cycles of coding, we developed a category system (coding scheme) (Saldaña 2021). We followed a combined approach through which we identified codes emerging from the empirical materials along with codes derived from the reviewed literature (Saldaña 2021). We present these results in the next section.

4.4. Limitations and delimitations of the study

We conducted this exploratory study in the midst of the COVID-19 pandemic and were unable to do fieldwork and conduct interviews and observations. In light of such constraints, our analysis is based on documents and deliberately focuses on the activities carried out by specific CSOs within the framework of projects linked to M&R in the context of the SDGs.
Examining the specific processes and practices through which citizens co-produce SDG-relevant data and knowledge with CSOs thus lies beyond the scope of this study.

5. Selected projects from CSOs linked to SDG M&R in Ecuador, Colombia, and Argentina

The three studied projects from Ecuador, Colombia, and Argentina differ in their aims, activities, scope, and operational modes. However, all involve CSOs and are explicitly linked to SDG M&R. The next section provides an overview of all three projects.

5.1. ODS Territorio Ecuador

“ODS Territorio Ecuador” was implemented by two CSOs: Grupo Faro and FFLA. It took place between 2017 and 2019 and was co-funded by the European Union. The project’s main objective was to enhance the conditions and livelihoods of Ecuadorians through the advancement of the SDGs. In addition, it pursued the integration of the SDGs into public policies and sought to build civil society and local government capacities (ODS Territorio Ecuador January/2020b). To achieve its main objectives, the project was made up of three components at national and local levels: citizen observatories, roundtables, and capacity building.

Citizen observatories at a national-level gathered official and technical data and translated these into accessible language. They also produced graphic representations of the data, and made user-friendly databases for citizen involvement. In addition, the national citizen observatory collaborated with the Environmental Ministry to produce complementary contextual information for each indicator. This took the form of 36 shadow reports of the VNR. Local observatories worked in five provinces (ODS Territorio Ecuador January/2020b). Grupo Faro and FFLA claim that the “citizen observatories and administrative records carried out by different actors and sectors of society are a clear example of how non-official data can contribute to the generation of key information for decision making” (ODS Territorio Ecuador 2020c).

5.2. Citizen monitoring of the SDGs in Colombia

The project “Citizen monitoring of the SDGs” has been implemented by the Colombian umbrella NGO CCONG, which was created in 1989. In its mission, CCONG states several objectives. First, CCONG works to strengthen sister CSOs and enhance their advocacy capacity. Second, it acts as a public representative or advocate in different international spaces, such as United Nations conferences. In this capacity, it influences policy processes by following the planning and implementation stages and closely monitoring decision-making to ensure that citizens’ perspectives are represented.

One of CCONG’s main activities is issuance of a report called “Citizen monitoring of the SDGs“ that provides recommendations to the government based on a participatory process. This report assesses the extent to which the government has fulfilled its acquired commitments regarding the 2030 Agenda (CCONG Abril/2018, 3). This serves as a baseline for a yearly review and analysis of official development plans, public data, and public reports. In addition, CCONG includes a review of the contributions of Colombian CSOs
to the SDGs. For example, in 2020 the citizen monitoring report reviewed 264 CSOs’ impact on the 2030 Agenda (CCONG July/2020, 29). Finally, the organization monitors media coverage on SDG compliance. The public dissemination of the results of these reports utilizes a streetlight methodology; “green” for full compliance, “yellow” for actions started but not completed, and “red” for no actions done related to the indicator. This methodology simplifies understanding of the report (CCONG 2019).

5.3. SDGs platform in Argentina

RACI is the implementing CSO of the project “SDGs Platform” in Argentina. RACI is an umbrella NGO made up of around 150 member organizations. Its objective is to build capacity in civil society and facilitate alliances between members. RACI works with CSOs at different levels, from local to international. The organization also builds partnerships with the private sector and the UN offices in Argentina and participates in UN SDG conferences.

The “SDGs Platform,” mentioned in Argentina’s first VNR (Gobierno de Argentina Julio/2017, 30), is an online platform created in 2017 to appraise and publicize civil society projects that contribute to the 2030 Agenda and the SDGs in Argentina. RACI states that the objective of this project is “to democratize the information about the work done by CSOs in the country and make it visible to key actors that will enhance the projects in the platform” (RACI 2019). The platform is an interactive space where each CSO uploads its own projects and users can see which projects are linked to the SDGs per region. Moreover, the platform allows CSO projects to be classified into categories based on the different SDGs and also shows general information such as location, the implementing organization, and the community the project benefits. The data produced under this platform aim to make allocation of funds more efficient while also enabling dialogue between local, national, and development cooperation actors in Argentina (RACI 2017, 1).

6. The roles of CSOs in SDG M&R

According to Gemmill and Bamidele-Izu (2002, 77), there are several emblematic roles through which CSOs help advance global governance agendas. These include collecting, disseminating, and analyzing information; providing input to agenda-setting and policy development processes; performing operational functions; assessing environmental conditions; monitoring compliance with international agreements; and advocating for environmental justice. In the literature reviewed about CSOs engaged in SDG-related processes and in our analysis of the three selected cases, we identified similar roles. We describe these roles and provide empirical examples in the following sub-sections. Table 2 summarizes these roles and the main activities related to them. Activities listed with an * were empirically identified through the case analysis and go beyond the activities described in the reviewed literature.

6.1. Participation promoter

One main role for CSO is participation promotion. While participation crosscuts and overlaps the other main roles that we identified, we argue that participation promotion is a
distinctive role performed by CSOs active in M&R of the SDGs and engaged with citizen science. Related activities include raising awareness about the importance of participation in governance-related processes, publicizing information about spaces and mechanisms through which citizens can get involved, and contributing to the development of citizen capabilities and skills to ensure meaningful engagement.

All three analyzed case study organizations foster participation as a part of their core activities. However, each executes the role of participation promoter in a particular way that furthers specific participation mechanisms at different levels. For example, “ODS Territorio Ecuador” maintained participation as a cross-cutting component within all its activities. Under this umbrella, Grupo Faro and FFLA have created intersectoral dialogue and participation groups called round tables at both the national and local levels. These raised awareness among the public and civil society representatives about the importance of active citizen participation in SDGs-related processes. The groups further explained the logics and modus operandi of national and local Citizen Data Observatories and invited direct engagement of multiple actors for data-collection purposes.
From a critical point of view, however, Citizen Data Observatories connected to official and government-led SDG M&R processes can still be argued to fall on the “placation” rung in Arnstein’s (1969) ladder framework. This means that while citizens can influence processes, this influence is enacted under unfavorable conditions. Crucially, a lack of guidelines about the role of citizen participation in Ecuador’s official SDG M&R processes allows government officials to make the final decision regarding whether or not to consider local, citizen-led contributions. This resonates with Howard and Wheeler’s (2015, 552) assessment of citizen participation in SDGs-related processes as (somewhat) tokenistic and with Sénit’s (2020a) critical insights about civil society’s limited influence in SDG formulation.

On a further critical note, despite the pluralistic and inclusive spirit of “ODS Territorio Ecuador,” it can be argued that the implementing CSOs of this project constitute a specific sort of civil society actor, one seen by governments as more “worthy” of engaging. Due to their proven prior knowledge and experience in data collection on SDG-related topics, Grupo Faro and FFLA embody an “expertise” vis-à-vis most citizens who lack this background. On the other hand, through their credentials and proximity to official government-led SDG M&R, Grupo Faro and FFLA have been able to open up translation spaces as part of “ODS Territorio Ecuador.” There, citizens can develop the capabilities and skills necessary for more meaningful engagement in SDG M&R by accessing official and non-official data explained in accessible language and through handy online databases (ODS Territorio Ecuador January/2020b).

6.1.1. Making SDG-relevant data available to citizens and enhancing data literacy

“ODS Territorio Ecuador,” “Citizen Monitoring of the SDGs” in Colombia, and the “SDGs Platform” in Argentina have also engaged in two interlaced crucial activities related to participation that are not sufficiently reflected in the literature. The first involves making SDG-relevant data available to citizens by removing barriers for public data access (ciudadanizar la información) and making information “easier to digest, visual and practical” (ODS Territorio Ecuador January/2020b, 9). The second is increasing data literacy, or the ability to read, write, and communicate data in context. This includes an understanding of data sources and constructs, analytical methods, and techniques applied to produce different data.

“ODS Territorio Ecuador,” as noted earlier, provides citizens with information on an online platform through infographics and user-friendly databases. This information is made public and easily accessible to enhance data literacy regarding SDG M&R. Because the set-up and appearance of the national observatory from “ODS Territorio Ecuador” are similar to other countries’ official online data platforms, this platform familiarizes citizens with an online interface design that they can use in other contexts to explicitly track and trace official reports of SDG advancement.

“Citizen Monitoring of the SDGs” in Colombia, on the other hand, works to verify open government data. It uses a simple, accessible, and user-friendly street-light methodology to represent its analysis. Likewise, through its emphasis on transparency, data availability, and accessibility, the “SDGs Platform” in Argentina is useful for citizens wanting to know more about the SDGs and their government’s progress toward achieving them. At the same time, the project facilitates networking and partnering opportunities among
CSOs and potential donors, making the allocation of valuable funds for SDG implementation more efficient.

6.2. Information provider

The role of information provider is closely linked with that of participation promoter. This role encompasses collecting, disseminating, and analyzing SDG-relevant data (Fritz et al. 2019, 924). Because CSD is produced through frequently updated information cycles, this type of activity has a great potential to contribute to the SDG framework. Additionally, a significant amount of CSD is focused on environmental topics, an area currently lacking in SDG M&R (Fritz et al. 2019, 924). This can help make data available for building baselines.

Currently, Ecuador is only able to measure 34% of the 231 SDGs indicators. “ODS Territorio Ecuador,” on the other hand, has produced complementary data for the full array of indicators through its national citizen observatory. The observatory collected statistical data from Ecuador’s National Statistics Organization (INEC) and filled the data gaps in collaboration with INEC and other governmental institutions, creating shadow reports that provided contextual information that complemented missing data (ODS Territorio Ecuador January/2020b, 10). The observatory also gathered data from local governments and CSOs. Among the three cases, “ODS Territorio Ecuador” stands out for working closely with official institutions to contribute data for official SDG M&R.

6.3. Data innovator

As a further role, CSOs can become data-innovators. Citizen science can be an essential source of spatial and temporal information. By using tagged photographs, social media, mobile phone data, geographic information systems (GIS), among other approaches, CSOs can help fill information gaps on remote locations. In addition, driving innovation in data production can allow citizen science initiatives to become critical players for harnessing the “data revolution” towards SDG M&R. CSD projects, which often rely on volunteers and unpaid staff, can produce cheaper, broader, and more frequent data on a variety of topics. Examples include the occurrence of species in a given habitat or the concentration of heavy metals in water bodies (Independent Expert Advisory Group Secretariat 2014). Finally, CSD projects can help create a more dynamic and open data ecosystem that is more accurate and up-to-date (Wheeler 2015, 2).

Our analysis of the three projects reveals that innovation is observable not only in the technologies and methods applied but also in data generation processes. The examined projects encourage collaboration for new forms of data collection. This can be directly linked to the SDG17 “Partnership for the Goals.” At the local level, “ODS Territorio Ecuador” identified and liaised with other CSOs to create an “ecosystem of information” which distinctively combines quantitative and qualitative data co-produced by different sources. Data from local citizen organizations were aggregated and upscaled to feed national SDG M&R mechanisms (ODS Territorio Ecuador January/2020b, 17). The initiative also promoted partnership projects with local universities to create citizen science methodologies for M&R of the SDGs. Table 3 lists these projects with local universities.
“SDGs Platform” in Argentina provides a further example of innovative collaborative data processes. Leading citizen organizations can upload information on their activities, including relevant data, and link them to a specific SDG. This demonstrates the connections between local action and global policy and potentially helps shed light on areas in which more activities should be encouraged in order to comply with the 2030 Agenda. For instance, the platform enables the mapping of the most represented and less represented SDGs in the work of Argentinian CSOs (RACI 2019). Less represented SDGs include SDG 14 “Life below water,” SDG 9 “Industry,” and SDG 7 “Energy” (RACI 2019). This information can serve as a starting point to encourage actions in these areas.

### 6.4. Watchdog

Closely related to the previous roles is that of watchdog, which involves monitoring and conducting assessments to ensure compliance with international agreements and hold decision-makers publicly accountable (Hege and Demailly 2016, 3; Bäckstrand 2006; Gemmill and Bamidele-Izu 2002). This role requires the capacity to assess environmental conditions and monitor compliance with international agreements. In addition, it requires the public communication of governments’ progress, stagnation, or reversals vis-à-vis global policy goals (Hege and Demailly 2016, 8). To this end, civil society actors often devise tracking mechanisms through which they can verify the quality and accuracy of official government data. Likewise, they can also devise pressuring strategies such as “shaming and blaming” which they activate when governments fail to comply with their commitments to or pledges around a global policy like the 2030 Agenda (Wheeler 2015).

The role of watchdog is perhaps most prominently illustrated by the “Citizen Monitoring of the SDGs” in Colombia. This CSO defines monitoring as

| Project location | Objective(s) | Key features | SDG |
|------------------|--------------|--------------|-----|
| 1 Manabi         | To promote the monitoring and quantification of socio-environmental SDGs related to the agro-productive sector | Use of GIS tools and remote sensors (NDVI) to predict vegetation cover prototype variation patterns to capture GHG from the soil | 13, 15 |
| 2 San Pablo city in Portoviejo | To analyze how to increase the resilience of the territory | Use of participatory mapping consisting of identification of problems and possible solutions by community members | 11 |
| 3 Island of San Cristobal, Galapagos | To generate qualitative and quantitative information on gender violence | Conducting surveys and workshops with a gender perspective | 5 |
| 4 Mountains in the Province of Santo Domingo de los Tsáchilas | To measure green coverage to quantify the progress regarding SDG15, especially SDG 15.4.2 | Implementing fixed-wing un-crewed aerial vehicles as monitoring tools | 15 |

Source: ODS Territorio Ecuador (2020b).
political and civil rights of CSOs, such as access to public information, planning and participation and social control, are evaluated. (CCONG July/2019, 25)

CCONG monitors official data and creates joint position reports with recommendations to the government on SDG implementation and M&R. Through this mechanism, Colombia’s self-reported progress towards the SDGs is verified and, if necessary, contested. Related to this, CCONG actively participates in the UN high-level forum for the 2030 Agenda where it sets in traction “shaming and blaming” mechanisms to pressure the Colombian government to make (more) ambitious progress towards SDG attainment.

6.4.1. Encouraging open data from government institutions on SDGs as means to enact (government) accountability

Linked to classical activities around the watchdog role, we found that the three cases studied also promote open data from government institutions as a means to further enhance accountability. This activity goes beyond what is described in the reviewed literature. “Open data” is closely connected with “open government,” and both terms refer to making information produced by the government public and transparent. Underlying principles are access to information, participation, and collaboration (Sangokoya et al. November/2015, 34). To encourage open data in the context of M&R of the SDGs is essential for democratizing these processes.

“ODS Territorio Ecuador” and “SDG Platform” in Argentina undertake a collaborative approach to open data promotion by sponsoring the topic and discussing it with relevant actors. For example, “ODS Territorio Ecuador” has held meetings with SDG strategic thinking groups that included government, private sector, and civil society representatives. They highlighted Ecuador’s alignment with the principles of open government and argued that open data not only improves the quality of information by making it visible to all groups, but also increases the level of participation by giving citizens access to the data for use in projects, research, and other activities.

“Citizen monitoring of the SDGs,” on the other hand, promotes open data in a less consensual way. This CSO monitors and records missing data that should be public and flags these information deficiencies in its annual report. To ground its position, it refers to the Colombian law on access to information and Colombia’s international commitments (CCONG July/2016, 19).

6.4.2. Creating counter-narratives

Another CSO activity is the production of alternative narratives or interpretations of official data. This activity is particularly important in “Citizen Monitoring of the SDGs” in Colombia. CCONG’s report constitutes a critical review of the government’s own VNR (CCONG 2019, 25). In this document, the data collected from official sources is compared against six recommendations for alternative interpretations and corresponding indicators. One example concerns the government’s story of “efficient fight against corruption through civil society participation.” Through additional, alternative research, “Citizen Monitoring of the SDGs” was able to demonstrate that, since 2017, corruption levels have not improved in Colombia and that civil society has not been actively involved in anti-corruption actions and policies from the government. Furthermore, CCONG has
denounced the life-threatening conditions under which civil society actors operate in Colombia. They note that

[... ]although the National Government has issued Decree 2137 of 2018 and has created the Plan of Timely Action – PAO20 for the prevention and protection of human rights defenders, social and community leaders and journalists; at the close of this Fourth Social Monitoring, stigmatization and assassinations of leaders continue to rise. (C Cong 2019, 14)

In this case, the creation of counter-narratives reflects the context in which CSOs operate. In Colombia, for example, there is an acute concern for citizen security. C Cong argues that the SDGs will only be possible to achieve if they guarantee: (i) the right to life and integrity of CSO leaders and other development actors; (ii) binding actions in the processes of advocacy and participation of CSOs during the cycle of public policies and budgets; (iii) actions that encourage and strengthen the right to control and citizen oversight, and (iv) the guarantee of access to transparent, timely, and accurate public information (C Cong 2019).

6.5. Advocacy

Advocacy is a fifth significant role enacted by CSOs that contribute to SDG M&R and experiments with citizen science. It involves pleading the causes of others or defending a cause or proposition (Hege and Demailly 2016, 8). This is relevant in agenda setting and policy development processes because CSD projects can often identify social and environmental issues that are important for marginalized groups but have not been addressed by the government (Saner, Yiu, and Nguyen 2020; Higgins and Cornforth 2015, 3). Advocacy thus amplifies marginalized voices or positions in participatory spaces and mechanisms. Issue entrepreneurship, in which CSOs push forward a plurality of topics, agendas, knowledge, and interests that are then considered in SDG M&R is another key element of advocacy. The difference between the roles of participation promotion and advocacy is subtle. While participation promotion refers to efforts made so that different civil society actors can directly take part in a process and make contributions in a participatory space, advocacy rather involves speaking on behalf of absent groups, topics, or agendas. Advocacy thus has some similarities with the watchdog role too. For example, the alternative interpretation of government data and narratives can help to illuminate topics and positions that matter for CSOs and their constituencies but have been ignored in public policy.

As noted in the case overview, the implementing CSOs of “Citizen monitoring of the SDGs” in Colombia and of “SDGs Platform” in Argentina – C Cong and RACI, respectively – explicitly discuss advocacy in their mission statements and objectives. Both CSOs seek to be regarded as legitimate speakers on behalf of civil society in their interactions with governmental actors of their respective countries and in UN conferences regarding the SDGs and the 2030 Agenda. They are thus able to voice topics and agendas which are missing or insufficiently considered in official government plans. “ODS Territorio Ecuador” also furthered such marginalized agendas through the activities of local Citizen Data Observatories. These crucially included participatory processes whereby communities prioritized SDGs based on their local needs and defined concrete monitoring focal points. In this specific project, local Citizen Data Observatories created entry-points for prioritizing gender and environmental protection as agenda issues. Moreover, in most provinces,
SDG1 “No Poverty” and SDG5 “Gender Equality” were prioritized and re-focused on indigenous communities (ODS Territorio Ecuador January/2020b).

Another example of advocacy is found in RACI’s work to implement the “SDG Platform.” Here, RACI produced a report together with Change.org with the objective of analyzing whether there was a correspondence between citizens’ concerns and the 2030 Agenda. Change.org is a platform where citizens can create online petitions and ask for public participation to communicate and amplify their concerns. Data generated by the Change.org platform in Argentina, Brazil, and Mexico were analyzed to determine if there is any alignment between local social concerns and global goals. For the most part, the most voted SDGs on the digital platform closely coincide with the social concerns uploaded on the internet. In the final analysis, two social concerns not present in any of the SDG indicators (animal abuse and culture) were also made visible through this process. Another important component of this study was the comparison of results with what the government of each country prioritized in its VNR, which revealed some discrepancies (RACI). This interactive and innovative exercise prefigures the sort of multi-sourced and multi-layered knowledge production processes required for SDG M&R.

7. Discussion and conclusions

The 2030 Agenda and the SDGs aim to achieve inclusive and just sustainable development. Civil society participation influenced the formulation of the SDGs, and is seen as crucial to bring about aspired improvements to pressing problems including poverty reduction, environmental degradation, and socio-economic inequalities (Sénit 2020a). It is also key to M&R efforts that accompany SDG implementation. The current official SDG M&R mechanisms are imperfect, relying on national-government VNRs that build on national statistics that lack the spatial and temporal granularity required. They also run the risk of selective reporting and secrecy by national governments. Shortcomings in official data translate into data gaps in compilations for the SDGs framework (Ballerini and Bergh 2021; Fraisl et al. 2020, 2022; Fritz et al. 2019). As a result, recent policy and academic discussions on SDG M&R identify civil society participation as means to generate complementary CSD to populate the SDGs monitoring framework (Ballerini and Bergh 2021; Fraisl et al. 2020, 2022; Fritz et al. 2019). Going beyond the intense focus on technical issues relating to the feasibility of filling SDG data gaps through CSD, this article explored the political and politicizing (Brown 2015) dimensions of civil society participation in SDG M&R.

To do so, we conducted a qualitative multiple-case analysis of three projects: “ODS Territorio Ecuador,” “SDGs Citizen Monitoring in Colombia,” and “SDGs Platform” in Argentina. By combining insights from our empirical materials with insights from the literature on governance for sustainable development and citizen science, we identified five interrelated roles that CSOs play in SDG M&R. We labeled these roles (1) participation promoter, (2) information provider, (3) data innovator, (4) watchdog, and (5) advocacy. Roles 2 and 3 are more closely aligned than the others with the aim of filling data gaps for SDG M&R and with the scholarship on CSD and citizen science (Ballerini and Bergh 2021; Fraisl et al. 2020, 2022; Fritz et al. 2019). These roles are political because generating and gathering evidence for problems like inequality, dispossession, and ecological disaster from local to national levels inherently involve power struggles. However, they are not
completely politicizing in the context of the studied cases. Our analysis suggests that citizens were engaged in activities linked to these roles as informants and thus in ways which Arnstein (1969) would describe as “placative” or “tokenistic.” Essentially, these activities do not reconfigure existing arrangements of authority and power which privilege certified experts. Further research is required to examine in more detail how “non-expert” citizens participate in knowledge production processes. Similarly, it would be useful to investigate the role played by the international agencies that finance CSO projects in the promotion of citizen science. Related questions would include an examination of which methodologies they tend to privilege and what kind of impact they expect to achieve in relation to governments.

Role 1 (participation promotion) is closely connected to the ideal of inclusive governance for sustainable development. This role can seem futile given that SDG M&R, like all global decision-making, is officially the domain of countries or national governments (Sénit 2020a). Neither the UN nor its member-states have formally specified the conditions and extent of the participation of civil society in SDG M&R processes. Nevertheless, in promoting participation, the CSOs involved in the studied projects each contribute to activating citizens and communities for SDG M&R. More concrete activities tied to this role, such as making SDG-relevant data available to citizens (ciudadanizar la información) and enhancing data literacy through simple means like CCONG’s street-light methodology have informative, educational, and empowering functions. While Saner, Yiu, and Nguyen (2020) argue that citizen participation in SDG M&R does not require sophisticated data analytics, the value of ciudadanizar la información and enhancing data literacy is based on the goals of educating and engaging local communities. As a result, this role is both political and characterized by politicizing effects, especially as it relates to role 4.

An informed, educated and empowered civil society can meaningfully engage in SDG M&R and demand accountability and transparency across complex governance structures. Role 4 (watchdog) consists of closely following government actions and statements and contesting its authority to tell the “truth” about the path towards SDG attainment. For this type of activity, it is not enough to have appropriate data. It is also necessary to develop and communicate appealing stories which can better contextualize government self-reports and unveil concealed problems. CCONG’s illumination of the citizen security problem in Colombia is a good example of this role.

Role 5 (advocacy) is a well-established political role of civil society in various policy contexts. Advocacy represents an opportunity to bring topics and concerns relevant to marginalized communities into national sustainable development strategies. In addition, it helps avoid situations in which these priorities are displaced by the competing claims of more powerful actors. As such, it represents an opportunity for co-development of a country’s SDG strategy that actually “leaves no one behind” (Saner, Yiu, and Nguyen 2020, 484). Most governments currently lack the capacity to collect data on all of the SDG indicators. As a result, they cannot avoid the need to prioritize which targets and indicators they monitor. Advocacy from CSOs, which involves issue entrepreneurship, can help in choosing what to focus on. One example of this is offered by the Citizen Observatories in Ecuador, through which gender, environmental protection, poverty, and indigenous communities were highlighted. Another can be seen in the exercise

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1We are grateful to one of the anonymous reviewers for bringing this point to our attention.
launched by RACI and Change.org, in which the alignment between local social concerns and the SDGs was verified.

Nevertheless, as Sénit (2020a, 708) notes, it remains challenging in the context of the SDGs to attain inclusiveness of voices, topics, and agendas due to the elitism still engrained in participatory spaces. Furthering this argument, we contend that civil society actors engaging in SDG M&R, including the CSOs that we studied, must continue to actively engage with issues of internal democracy. Only this is likely to allow for the meaningful representation of marginalized actors and their agendas. Future research on these more specific aspects based on qualitative case study methodologies could yield more nuanced understandings of the dynamics through which civil society actors negotiate the prioritization of targets and indicators.

In sum, what we have attempted to show in this article is that civil society participation in SDG M&R can indeed contribute to shifts in pregiven authority arrangements and the distribution of power therein. Our analysis shows that despite differences in their political qualities and politicizing effects all five roles contribute to the enabling environment for collective action that Bowen et al. (2017) consider to be much needed in governance for the SDGs.

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Notes on contributors

Cristina Espinosa has an interdisciplinary training in the environmental social sciences. She holds a PhD in Environmental Governance. At the intersection of Political Ecology, Feminist Science & Technology Studies and Decolonial Thinking, she deploys critical perspectives anchored in the constructivist and interpretivist paradigms of the social sciences. Her research interests include environmental and sustainability governance in Latin America and in the international arena and their democratic implications in various areas such as extractive industries; the political representation of non-human nature; and transnational activism. She currently works as an Assistant Professor at the Chair Group for Sustainability Governance of the University of Freiburg in Germany and is a fellow of the Young Academy for Sustainability Research of the Freiburg Institute for Advanced Studies.

Gabriela Rangel is an International Relations professional with experience in project management, policy, and governance issues in topics related to international cooperation, sustainable forest management, and chemicals. She graduated with a Master of Science in Environmental Governance.
from the University of Freiburg, Germany. Her Master’s thesis was related to SDG Monitoring and Reviewing in Latin America. She currently works as a Project Coordinator at NDC Partnership.

**ORCID**

Cristina Espinosa  http://orcid.org/0000-0002-4479-4071
Gabriela Rangel  http://orcid.org/0000-0003-3033-4223

**References**

Appe, S., and D. Barragán. 2017. “Universities, NGOs, and Civil Society Sustainability: Preliminary Lessons from Ecuador.” *Development in Practice* 27 (4): 472–486. doi:10.1080/09614524.2017.1303035.

Arnstein, S. 1969. “A Ladder of Citizen Participation.” *Journal of the American Institute of Planners* 35 (4): 216–224. doi:10.1080/0194436908977225.

Bäckstrand, K. 2006. “Democratizing Global Environmental Governance? Stakeholder Democracy After the World Summit on Sustainable Development.” *European Journal of International Relations* 12 (4): 467–498. doi:10.1177/1354066106069321.

Ballerini, L., and S. I. Bergh. 2021. “Using Citizen Science Data to Monitor the Sustainable Development Goals: A Bottom-Up Analysis.” *Sustainability Science* 16 (6): 1945–1962. doi:10.1007/s11625-021-01001-1.

Biermann, F., N. Kanie, and R. Kim. 2017. “Global Governance by Goal-Setting: The Novel Approach of the UN Sustainable Development Goals.” *Current Opinion in Environmental Sustainability* 26–27: 26–31. doi:10.1016/j.cosust.2017.01.010

Bowen, K. J., N. A. Cradock-Henry, F. Koch, J. Patterson, T. Häyhä, J. Vogt, and F. Barbi. 2017. ‘Implementing the “Sustainable Development Goals”: Towards Addressing Three Key Governance Challenges – Collective Action, Trade-Offs, and Accountability.” *Current Opinion in Environmental Sustainability* 26–27: 90–96. doi:10.1016/j.cosust.2017.05.002.

Brown, M. B. 2015. “Politicizing Science: Conceptions of Politics in Science and Technology Studies.” *Social Studies of Science* 45 (1): 3–30. doi:10.1177/0306312714556694.

CCONG. 2016. “Documento de Seguimiento a las recomendaciones presentadas al Gobierno Nacional para la implementación de los Objetivos de Desarrollo Sostenible ODS.” Colombia. Accessed April 23, 2020. https://ccong.org.co/ccong/documentos/documento-de-seguimiento-a-las-recomendaciones-presentadas-al-gobierno-nacional-para-la-implementacion-de-los-objetivos-de-desarrollo-sostenible—ods_643

CCONG. 2018. “Recomendaciones al Gobierno Nacional para la Implementación de los Objetivos de Desarrollo Sostenible-ODS.” Bogotá. Accessed April 23, 2020. https://ccong.org.co/ccong/documentos/documento-de-recomendaciones-de-la-ccong-al-gobierno-nacional-para-la-implementacion-de-los-objetivos-de-desarrollo-sostenible—ods_571

CCONG. 2019. “Cuarto monitoreo. A las recomendaciones presentadas al Gobierno Nacional para la adopción, ejecución y monitoreo de los Objetivos de Desarrollo Sostenible- ODS en Colombia.” Colombia. Accessed April 23, 2020. https://ccong.org.co/files/913_at_CuartoMonitoreo_compressed.pdf

CCONG. 2020. “Quinto Monitorio. Seguimiento a las recomendaciones presentadas al Gobierno Nacional para la implementación de los Objetivos de Desarrollo Sostenible-ODS. Colombia.” Accessed April 23, 2020. https://ccong.org.co/ccong/documentos/quinto-monitorio-ciudadano-ods:-resultado-del-monitorio-ciudadano-al-avance-del-gobierno-nacional-en-la-adopcion,-ejecucion-y-monitorio-de-los-objetivos-de-desarrollo-sostenible_942

Cooper, C. B., and B. V. Lewenstein. 2016. *Two Meanings of Citizen Science from the Rightful Place of Science: Citizen Science. A Series by the Consortium for Science, Policy, and Outcomes*. Edited by D. Cavalier. Tucson, AZ: Arizona State University Press.

Creswell, J. W., and J. D. Creswell. 2018. *Research Design Qualitative, Quantitative, and Mixed Methods Approaches*. 5th ed. London: Sage.
ECLAC and United Nations. 2019. “Informe de avance cuatrienal sobre el progreso y los desafíos regionales de la Agenda 2030 para el Desarrollo Sostenible en América Latina y el Caribe.” Rev.1. Accessed April 25, 2020. https://www.cepal.org/es/publicaciones/44551-informe-avance-cuatrienal-progreso-desafios-regionales-la-agenda-2030-desarrollo#:~:text=Este%20informe%20se,presenta%20a,2030%20para%20el%20Desarrollo%20Sostenible

Eitzel, M. V., J. L. Cappadonna, C. Santos-Lang, R. E. Duerr, A. Virapongse, S. E. West, C. C. M. Kyba, et al. 2017. “Citizen Science Terminology Matters: Exploring Key Terms.” Citizen Science: Theory and Practice 2 (1): 1. doi:10.5334/cstsp.96.

Fisher, Angelina, and Sakiko Fukuda-Parr. 2019. “Introduction – Data, Knowledge, Politics and Localizing the SDGs.” Journal of Human Development and Capabilities 20 (4): 375–385. doi:10.1080/19452829.2019.1669144.

Fraisl, D., J. Campbell, L. See, U. Wehn, J. Wardlaw, M. Gold, I. Moorthy, et al. 2020. “Mapping Citizen Science Contributions to the UN Sustainable Development Goals.” Sustainability Science 15 (6): 1735–1751. doi:10.1007/s11625-020-00833-7.

Fraisl, D., L. See, T. Sturn, S. MacFeely, A. Bowser, J. Campbell, I. Moorthy, O. Danylo, I. McCallum, and S. Fritz. 2022. “Demonstrating the Potential of Picture Pile as a Citizen Science Tool for SDG Monitoring.” Environmental Science & Policy 128: 81–93. doi:10.1016/j.envsci.2021.10.034.

Fritz, S., L. See, T. Carlson, M. Haklay, J. L. Oliver, D. Fraisl, R. Mondardini, et al. 2019. “Citizen Science and the United Nations Sustainable Development Goals.” Nature Sustainability 2 (10): 922–930. doi:10.1038/s41893-019-0390-3.

Gemmill, B., and A. Bamidele-Izu. 2002. “The Role of NGOs and Civil Society in Global Environmental Governance.” In Global Environmental Governance. Options & Opportunities, edited by Daniel C. Esty, 77–100. New Haven, CT: Yale School of Forestry & Environmental Studies. Accessed April 20, 2020. https://www.researchgate.net/publication/228786506_The_role_of_NGOs_and_Civil_Society_in_Global_Environmental_Governance

Gobierno de Argentina. Julio/2017. “Informe Voluntario Nacional. Ante el Foro Político de Alto Nivel para el Desarrollo Sostenible.” Accessed April 23, 2020. https://www.argentina.gob.ar/sites/default/files/politicassociales-publicaciones-informe-voluntario-nacional-ods-argentina-julio-2017_1_0_0.pdf

Hege, E., and D. Demaily. 2016. "How Do NGOs Mobilize Around the SDGs and What are the Ways Forward." A French-German comparison. IDDRI. Accessed April 20, 2020. https://www.iddri.org/en/publications-and-events/document2t-de-travail/how-do-ngos-mobilize-around-sdgs-and-what-are-ways

Higgins, K., and J. Cornforth. 2015. “Civil Society and SDG Monitoring. Harnessing Civil Society and Citizen-Generated Data.” DATASHIFT. Accessed April 23, 2020. http://civicus.org/images/SDG%20Monitoring%20-%20DataShift%20Background%20Note%20-%20FinalFinal.pdf

Howard, J., and J. Wheeler. 2015. “What Community Development and Citizen Participation Should Contribute to the New Global Framework for Sustainable Development.” Community Development Journal 50 (4): 552–570. doi:10.1093/cdj/bsv033.

Independent Expert Advisory Group Secretariat. 2014. “A World That Counts. Mobilising the Data Revolution for Sustainable Development.” Accessed April 23, 2020. https://www.undaterevolution.org/wp-content/uploads/2014/11/A-World-That-Counts.pdf

Jameson, S., D. Lämmerhirt, and E. Prasetyo. 2017. “Acting Locally, Monitoring Globally? How to Link Citizen-Generated Data to SDG Monitoring.” DATASHIFT. Open Knowledge International. Accessed April 23, 2020. http://civicus.org/thedatashift/wp-content/uploads/2017/03/Acting-locally-monitoring-globally_Full-Report.pdf

López-Feldman, A., C. Chávez, M. A. Vélez, H. Bejarano, A. B. Chimeli, J. Féres, J. Robalino, R. Salcedo, and C. Viteri. 2020. “COVID-19: impactos en el medio ambiente y en el cumplimiento de los ODS en América Latina.” Desarrollo y Sociedad, 104–132. doi:10.13043/DYS.86.4.

Martín-Guzmán, P., and M. Aguilera. 2015. “Statistical Governance in the Latin American and the Caribbean Region: Achievements and Challenges.” Statistical Journal of the IAOS 31: 655–669. doi:10.3233/SJI-150907.

Newig, J., and O. Fritsch. 2009. “Environmental Governance: Participatory, Multi-Level – and Effective?” Environmental Policy and Governance 19 (3): 197–214. doi:10.1002/ept.509.
ODS Territorio Ecuador. 2020a. “Lecciones Aprendidas para el seguimiento y el monitoreo de los ODS en Ecuador.” Panorama Sostenible. With Assistance of Futuro Latinoamericano, Grupo Faro, Union Europea. Edited by Álvaro Andrade y Carolina Peña. ODS Territorio Ecuador. Quito. Accessed May 4, 2020. https://odsterritorioecuador.ec/publicacion-lecciones-aprendidas-parael-seguimiento-y-monitoreo-de-los-ods-en-ecuador

ODS Territorio Ecuador. 2020b. “Panorama Sostenible. Buenas Prácticas de Observatorios en la Región para el Monitoreo de los ODS.” Boletín informativo Panorama Sostenible. 10th ed. With Assistance of Futuro, Grupo Faro, Union Europea. ODS Territorio Ecuador. Accessed May 4, 2020. https://odsterritorioecuador.ec/panorama-sostenible-no-10/

ODS Territorio Ecuador. 2020c. “Retos en la medición de los ODS.” Panorama Sostenible. Tomo 3. With Assistance of Futuro Latinoamericano, Grupo Faro, Union Europea. Edited by ODS Territorio Ecuador. Quito. Accessed May 4, 2020. https://odsterritorioecuador.ec/publicacion-retos-en-la-medicion-de-los-ods/

RACI. 2017. “SDG Platform.” “Argentina. Accessed May 4, 2020. https://raci.org.ar/nuestra-plataforma-ods-cumple-anos/

RACI. 2019. “Reporte Datos Plataforma ODS.” Accessed May 4, 2020. https://raci.org.ar/wp-content/uploads/2019/09/PLATAFORMA-ODS-1.pdf

Saldaña, J. 2021. The Coding Manual for Qualitative Researchers. 4th ed. London: Sage.

Saner, R., L. Yu, and M. Nguyen. 2020. “Monitoring the SDGs: Digital and Social Technologies to Ensure Citizen Participation, Inclusiveness and Transparency.” Development Policy Review 38 (4): 483–500. doi:10.1111/dpr.12433.

Sangokoya, D., J. Manske, L. Barrett, G. Pestre, and E. Letouzé. 2015. “Opportunities and Requirements for Leveraging Big Data for Official Statistics.” Data POP Alliance. White Paper Series. Accessed May 4, 2020. http://datapopalliance.org/wp-content/uploads/2016/03/LACBigDataNSOPaper.pdf

Sénit, C.-A. 2020a. “Leaving No One Behind? The Influence of Civil Society Participation on the Sustainable Development Goals.” Environment and Planning C: Politics and Space 38 (4): 693–712. doi:10.1177/2399654419884330.

Sénit, C.-A. 2020b. “Transforming our World? Discursive Representation in the Negotiations on the Sustainable Development Goals.” International Environmental Agreements: Politics, Law and Economics 20 (3): 411–429. doi:10.1007/s10784-020-09489-1.

Shirk, J. L., H. L. Ballard, C. C. Wilderman, T. Phillips, A. Wiggins, R. Jordan, E. McCallie, et al. 2012. “Public Participation in Scientific Research: A Framework for Deliberate Design.” Ecology and Society 17 (2): 29. doi:10.5751/ES-04705-170229.

Srisankarajah, D. 2018. “A People’s Agenda: Citizen Participation and the SDGs.” In From Summits to Solutions: Innovations in Implementing the Sustainable Development Goals, edited by R. M. Desai, H. K. Kato, H. Kharas, and J. W. McArthur, 302–317. Washington, DC: Brookings Institution Press. http://www.jstor.org/stable/10.7864j.ctt21h4xhs.16.

United Nations. 2015. Secretary-General’s Remarks at Press Conference on Outcome Document of Post-2015 Development Agenda. United Nations. Accessed April 23, 2022. https://press.un.org/en/2015/sgsm16987.doc.htm

United Nations. 2022. The Sustainable Development Agenda. Accessed January 23, 2022. https://www.un.org/sustainabledevelopment/development-agenda/

West, S., and R. Pateman. 2017. How Could Citizen Science Support the Sustainable Development Goals? Stockholm: Stockholm Environmental Institute. Accessed April 23, 2020. https://mediamanager.sei.org/documents/Publications/SEI-2017-PB-citizen-science-sdgs.pdf

Wiggins, A., and K. Crowston. 2011. “From Conservation to Crowdsourcing: A Typology of Citizen Science.” 2011 44th Hawaii International Conference on System Sciences, 1–10. doi:10.1109/HICSS.2011.207.

Wheeler, T. 2015. Who Should Measure the Sustainable Development Goals?. Accessed July 27, 2020. https://www.saferworld.org.uk/resources/news-and-analysis/post/159-who-should-measure-thesusustainable-development-goals

Yin, R. K. 2018. Case Study Research and Applications Design and Methods. 6th ed. Thousand Oaks, CA: Sage.