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Scientific evidence on the political impact of the Sustainable Development Goals

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In 2015, the United Nations agreed on 17 Sustainable Development Goals as the central normative framework for sustainable development worldwide. The effectiveness of governing by such broad global goals, however, remains uncertain, and we lack comprehensive meta-studies that assess the political impact of the goals across countries and globally. We present here condensed evidence from an analysis of over 3,000 scientific studies on the Sustainable Development Goals published between 2016 and April 2021. Our findings suggests that the goals have had some political impact on institutions and policies, from local to global governance. This impact has been largely discursive, affecting the way actors understand and communicate about sustainable development. More profound normative and institutional impact, from legislative action to changing resource allocation, remains rare. We conclude that the scientific evidence suggests only limited transformative political impact of the Sustainable Development Goals thus far.

In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development to guide public policies and inspire societal actors to promote sustainable development worldwide. The core of this programme is 17 Sustainable Development Goals (SDGs) with 169 specific targets, most of them to be achieved by 2030. Although the SDGs are not the first effort to set global goals (and they have been criticized earlier on, for example, ref. ¹), they are still by far the most comprehensive and detailed attempt by the United Nations to advance sustainable development^{2–4}. After six years of implementation, the question arises whether these 17 SDGs have had any political impact within national and global governance to address pressing challenges such as poverty eradication, social justice and environmental protection.

In this Article, we offer the results of a meta-analysis of the available scientific evidence about the political impact of the SDGs since 2015. The assessment covers over 3,000 studies, analysed by a team of 61 scholars. Most studies assessed are peer-reviewed academic research papers, along with a few studies from the ‘grey literature’ that were consulted when the scientific literature was scarce, such as policy studies from think tanks, research institutes and non-governmental organizations. The majority of studies assessed in depth were empirical policy analyses by experts in political science and related fields of study, including analyses of the political impact of the SDGs over time; single or comparative case studies of individual SDGs or of specific countries; systematic assessments of expert opinions, for example, through broader surveys or series

of systematic interviews; and a few quantitative datasets that assess the political impact of the SDGs.

Drawing on earlier research programmes on international institutions (for example, refs. ^{5,6}), we searched for three types of effects: discursive, normative and institutional changes. Discursive effects we define as changes in global and national debates that make them more aligned with the SDGs, for example, through explicit references to goals, targets or the general provisions of the 2030 Agenda. We define normative effects as adjustments in legislative and regulatory frameworks and policies in line with, and because of, the SDGs. Institutional effects we define as evidence for the creation of new departments, committees, offices or programmes linked to the achievement of the SDGs or the realignment of existing institutions. The presence of all three types of effects throughout a political system we define as transformative impact, which is the eventual goal of the 2030 Agenda⁷.

The assessment has been organized around five dimensions, which we derived from the core ambitions expressed in the overarching United Nations document, the 2030 Agenda for Sustainable Development: the political impact of the SDGs on (1) global governance, (2) domestic political systems, (3) the integration and coherence of institutions and policies, (4) the inclusiveness of governance from local to global levels and (5) the protection of ecological integrity.

We find that the SDGs thus far have had mainly discursive effects but also have led to some isolated normative and institutional reforms. However, effects are often diffuse, and there is little evidence that goal-setting at the global level leads directly to

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political impacts in national or local politics^{8–10}. Overall, our assessment indicates that although there are some limited effects of the SDGs, they are not yet a transformative force in and of themselves.

Results

Here we present in more detail the insights of our assessment related to the political impact of the SDGs since their launch in 2015, organized around the five dimensions identified in the preceding. Note that the few literature references we provide are merely illustrative examples of larger trends in the hundreds of studies that we analysed in depth.

Impact on global governance. First, regarding the global governance system, we find that the political impact of the SDGs has been mostly discursive, for example, through their adoption as a reference point in international policy pronouncements and in a changed discourse within global institutions. While the governance principles that underpin the SDGs—such as universality, coherence, integration and ‘leaving no one behind’—have become part of mainstream discourses in multilateral institutions, actual reforms in the operations of these organizations since 2015 have been modest, and there is no strong evidence that the SDGs have had a transformative impact on the mandates, practices or resource allocation of international organizations and institutions within the United Nations system (for example, refs. ^{11,12}). The literature thus suggests a mismatch between the formal aspirations of the United Nations to promote the SDGs as central guidelines in global governance and their limited transformative impact.

Moreover, observable changes often reflect longer trajectories in global governance that had started well before the launch of the SDGs. It is difficult to identify in the literature robust change in such long-term trends that can be causally related to the launch of the SDGs in 2015. There is rarely any clear and unidirectional causality that a major reform process has been initiated because of the SDGs.

Studies also suggest that the High-Level Political Forum on Sustainable Development has not lived up to expectations of becoming an effective ‘orchestrator’¹³ in global sustainability governance. This forum, created after the 2012 United Nations Conference on Sustainable Development, is meant to serve as a regular meeting place for governments and non-state representatives to review the implementation of the SDGs and to assess global progress towards sustainable development. There is evidence that the High-Level Political Forum is serving as a platform for voluntary reporting and peer learning among governments. For example, the voluntary national reviews process has helped to disseminate best practices of SDG implementation across countries and actors¹⁴, and the forum has offered new opportunities for non-state and sub-national actors to become involved in global policy processes (for example, ref. ¹⁵). Yet there is no robust evidence that such peer learning, reporting and broad participation have steered governments and other actors towards structural and transformative change for sustainable development. The forum has not provided political leadership and effective guidance for achieving the SDGs (for example, ref. ¹⁶), and it has failed to promote system-wide coherence, largely because of its broad and unclear mandate combined with a lack of resources and divergent national interests (for example, refs. ^{15,17,18}).

Likewise, parallel reforms in the United Nations system for development cooperation have not been transformational, mostly because of governments’ incoherent signals in the governing bodies and funding practices that impede integrated approaches (for example, refs. ^{19–21}). As for environmental policy, the United Nations Environment Programme, mandated to catalyse international action and cooperation, has not been able to expand its leadership after the adoption of the SDGs. The fragmented nature of global environmental governance continues to limit institutional change and produces inconsistencies and inefficiencies (for example, refs. ^{22–24}).

Impact on domestic politics. The SDGs must eventually be implemented in domestic political contexts through policies and programmes enacted by governments and public agencies with the support and engagement of non-state actors.

We find some evidence that state and non-state actors have started to implement the SDGs at the national and local levels. Many countries have begun to integrate SDGs into their administrative systems, and some governments have designated bodies or formed new units for goal implementation. Yet the performance of national governments varies, and most countries lag behind in implementing the SDGs. Observable institutional change often merely replicates existing priorities, trajectories and government agendas, and governments tend to selectively implement those SDGs that support policies they have already prioritized (for example, refs. ^{25,26}). For instance, Paraguay’s current 2030 National Development Plan was adopted in 2014, a year before the adoption of the SDGs, and the two processes were never merged²⁷.

There is scant evidence that governments have substantially reallocated funding to implement the SDGs, either for national implementation or for international cooperation. The SDGs do not seem to have changed public budgets and financial allocation mechanisms in any important way, except for some local governance contexts (for example, ref. ²⁸). The lack of substantial funding could prevent stronger political impact of the SDGs and indicate that the discursive changes that we have identified will not lead to transformative change in terms of policy reform or resource allocation.

Some evidence suggests that sub-national authorities, and especially cities, are often more pioneering and progressive than their central governments in building coalitions for implementing the SDGs²⁹. In several national political systems, civil society actors have begun to hold public actors accountable for their commitments to realize the vision of leaving no one behind. In particular, some studies in African countries^{30,31} highlight the role that civil society organizations play in mobilizing participation and bringing the voices of those on the front lines of poverty, inequality and vulnerability into the implementation and progress review on specific SDGs, such as SDG 15. This growing role of actors beyond national governments suggests an emerging multi-faceted and multi-layered approach to implementing the 2030 Agenda (for example, refs. ^{28,32,33}).

There is also evidence of increased interest and participation from corporate actors in sustainable development through public–private partnerships, even though the effectiveness of such arrangements is uncertain³⁴. Some corporate actors, including banks and investors, increasingly engage with and invest in sustainability practices, promote green finance, facilitate large-scale sustainable infrastructure projects or expand their loan portfolios to include environmental and social loans (for example, refs. ^{35–38}). Such practices are often discursively linked to the SDGs. Some studies, however, warn of ‘SDG washing’ by corporate actors, selective implementation of SDGs and political risks linked to private investments in the context of continued shortage of public funding. For example, while one study found that 70% of CEOs see the SDGs as a powerful framing to accelerate sustainability-related efforts of their companies, the SDGs could also be used to camouflage business-as-usual by disguising it using SDG-related sustainability rhetoric³⁹. Overall, fundamental changes in incentive structures to guide public and private funding towards more sustainable pathways seem to be lacking.

We conclude that the domestic political impact of the SDGs has remained mostly discursive. Governments increasingly refer to the SDGs in policy documents, and 176 countries have presented their voluntary national reviews at the High-level Political Forum (for example, ref. ⁴⁰). Sub-national authorities refer to the SDGs in their communications as well, and many have offered voluntary local reviews of their initiatives. In addition, several corporate actors and civil society organizations use the language of the 2030 Agenda. All these references to the SDGs in the political debate could be seen as

a first step towards more far-reaching transformational changes. Yet it is uncertain whether these discursive effects of the SDGs signal the beginning of a deep transformation towards sustainable development or whether their impact will remain mostly discursive until and beyond 2030.

Impact on domestic institutional integration and policy coherence. The 17 SDGs and their 169 targets form a complex mesh of normative aspirations that seek to address all areas of human activity. Some studies suggest that synergies among SDGs can be achieved by designing policies in a holistic way (for example, ref. ⁴¹). Others argue, however, that inherent trade-offs in the 2030 Agenda and the SDGs are too often neglected in academic research and require more attention (for example, ref. ⁴²). Overall, the 2030 Agenda and the SDGs are expected to provide guidance and resolve normative conflicts, institutional fragmentation and policy complexity.

We find that substantial academic work has been devoted to the conceptualization of governance fragmentation, institutional interlinkages and integration. Yet limited empirical research has studied how these concepts play out in national implementation of the SDGs. Several case studies, for example, on Bangladesh, Belgium, Colombia, Germany, India, the Netherlands, Sri Lanka and small island developing states indicate that synergies and trade-offs in the 2030 Agenda manifest differently across political systems and governmental levels (for example, ref. ⁴³). Broader comparative assessments of the impacts of SDG interlinkages on national politics are lacking.

Several governments have taken first steps to align their institutions towards the SDGs. Some countries, such as the Netherlands, have established coordination bodies within central agencies (for example, ref. ⁴⁴), and others, such as Germany, have promoted inter-ministerial exchanges to bring their public-administrative systems in line with the SDGs (for example, ref. ⁴⁵). These attempts, however, differ from country to country, leading to large variations in institutional SDG-inspired integration. For example, the responsibility for the SDGs lies with one or two ministries in some countries and with the head of state or government in others. The impact of either strategy remains uncertain and warrants further investigation.

Overall, governments still fall short of enhancing policy coherence to implement the SDGs, despite modest advances in some countries. Where we see evidence of integrating SDGs into national strategies and action plans, this has not yet led to new or adjusted cross-sectoral policies and programmes that cohere with one another (for example, ref. ⁴⁶). Experts are divided in their expectations as to whether stronger policy coherence for the SDGs will emerge before 2030.

Several studies point to remaining barriers to institutional integration and policy coherence in administrative systems (for example, ref. ⁴⁷). These include cumbersome bureaucracies, lack of political interest, short-term political agendas and waning ownership of the SDGs. Studies agree that breaking down such barriers will take time and require political leadership, continuous efforts by policymakers and pressure by civil society organizations. So far, there are few indications that the adoption of the 2030 Agenda and the SDGs has helped to greatly reduce such barriers.

Impact on inclusiveness. The 2030 Agenda for Sustainable Development and the SDGs are meant to address inequalities within and among countries and to ensure that no one is left behind. Vulnerable groups and countries are extensively mentioned in the 2030 Agenda and in several SDGs and their targets. In addition, two SDGs are dedicated to the reduction of inequality within and between countries (Goal 10) and the promotion of equality for women and girls (Goal 5). However, evidence suggests a mismatch between rhetoric and action. On the one hand, vulnerable people and countries are often discursively prioritized in the implementation of the SDGs, as evidenced by the broad uptake of the principle

of leaving no one behind in pronouncements by policymakers and civil society activists. On the other hand, the normative or institutional effects of such discursive prioritization remain limited.

Within countries, the political impact of the SDGs in reducing inequalities varies considerably and seems to be determined by domestic politics. The literature indicates that the SDGs have not stimulated new forms of normative or institutional steering that promotes inclusiveness. The SDGs have been leveraged, if at all, as an overarching international normative framework to legitimize existing national policies and institutions for the promotion of inclusiveness (for example, refs. ^{48–50}). In some cases, we see counterproductive effects when political elites use the SDG discourse to overlay the existing non-inclusive institutional settings or to add legitimacy to entrenched marginalization. For example, a study on Paraguay found that the government cooperates in the framework of SDG implementation mostly with agribusiness companies, while civil society organizations were not offered any avenues for meaningful participation⁵⁷.

Internationally, there is no evidence that the adoption of the SDGs has advanced the position of the world's most vulnerable countries in global governance and in the global economy. For one, there are hardly any indications that the SDGs have steered global governance structures towards more inclusiveness, especially regarding least developed countries (for example, refs. ^{51,52}). Studies doubt whether the SDGs will ever be able to transform legal frameworks towards increased political participation of these countries in global governance. In addition, continued lack of compliance with long-standing norms that seek to support the least developed countries, such as special commitments on aid from the Global North, further indicates the limited steering effect of the SDGs on the ability of poorer countries to fully participate in and benefit from the global economy.

There is evidence, however, that emerging economies in the Global South increasingly frame their aid and investment commitments to poorer countries as promoting the SDGs. For example, China has in recent years increased its aid and investments under the Belt and Road Initiative, claiming that this would promote the SDGs⁵³. Similarly, the literature suggests that civil society organizations use the SDGs as a reference framework to hold governments to account (for example, ref. ⁵⁴), pointing to advantages of granting larger roles to civil society organizations in shaping and implementing policy initiatives such as the SDGs. This trend might be important to prevent policy backlash against inclusiveness, especially in countries that are less welcoming to civil society influence.

Impact on ecological integrity at the planetary scale. The SDGs pronounce their ambition to resolve the fundamental concerns of both people and the planet and to ensure life-sustaining conditions on Earth. However, there is widespread doubt that the SDGs can steer societies towards more ecological integrity at the planetary scale. There is also little evidence that any normative and institutional change in this direction has materialized because of the SDGs.

Studies on international governance indicate a limited role of the SDGs in facilitating the clustering of international agreements by serving as a set of collective 'headlines'. While the SDGs seem to have influenced discussions around the climate and biodiversity regimes (for example, ref. ⁵⁵) and have consolidated support for specific concerns and interlinkages, many such changes had been part of these negotiations well before 2015 (for example, refs. ^{56,57}). At the regional level, the SDGs have fed into policies and programmes of regional governance bodies and steered the creation of new institutions, although even here the political impact of the SDGs towards better environmental protection remains limited (for example, refs. ^{58–60}). Within countries, there is also little evidence that the SDGs have strengthened environmental policies (for example, refs. ^{61,62}). For example, the South African Integrated Resource Plan, which defines the country's energy mix and was adopted four years after the SDGs, projects that coal power will still account for 59% of South Africa's electricity supply by 2030,

potentially bringing about adverse impacts on other goals related to health, water, climate and life on land.

Many studies concur that the SDGs lack ambition and coherence to foster a transformative and focused push towards ecological integrity at the planetary scale (for example, refs. ^{63–65}). There are indications that this lack of ambition and coherence results partially from the design of the SDGs (for example, ref. ⁶⁶), for example, global economic growth as envisaged in SDG 8 (notwithstanding regional development needs) might be incompatible with some environmental protection targets under SDGs 6, 13, 14 and 15 (for example, ref. ¹). Certain studies also argue that the focus of the SDGs on neoliberal sustainable development is detrimental to planetary integrity and justice (for example, ref. ⁶⁷). As a result, experiences from the implementation of the SDGs in domestic, regional and international contexts provide little evidence of political impact towards advancing ecological integrity, as countries in both the Global South and the Global North largely prioritize the more socioeconomic SDGs over the environmentally oriented ones, which is in alignment with their long-standing national development policies (for example, refs. ^{68,69}). Overall, scholars argue that while the SDGs may help to highlight environmental protection as an important concern, parts of their targets are structurally incompatible with efforts to steer towards a more ambitious programme for ecological integrity at the planetary scale.

Discussion

The adoption of the 2030 Agenda with its SDGs is often seen as a major accomplishment in global sustainability governance. While many SDGs build on earlier agreements, the full set of 17 SDGs and 169 targets is breathtaking in its ambition, scope and comprehensiveness. And yet, we conclude that the 2030 Agenda and the 17 SDGs have thus far had only a limited political impact on global, national and local governance since their adoption in 2015.

The effects of the SDGs, limited as they are, are also neither linear nor unidirectional. While the 17 SDGs constitute a strong set of normative guidelines, their national and local implementation and dissemination across societal sectors remain political. The SDGs are a non-legally binding and loose script, purposefully designed to provide much leeway for actors to interpret the goals differently and often according to their interests. Hence, many actors seem to use the SDGs for their own purposes by interpreting them in specific ways or by implementing them selectively. This finding challenges the aspiration shared by some scholars and policy experts that the SDGs could underpin the ‘orchestration’ of global sustainability policy, or even global social, environmental and economic policy more generally (for example, ref. ¹³). Rather, the SDGs can be seen as a set of musical scores played by different actors and subject to multiple interpretations. There is little evidence that the United Nations system has been able to serve as a central conductor to ensure that actors cohere around a harmonious melody and unite towards achieving sustainable development worldwide.

Our assessment suggests that more research in this field is urgently needed. Research on the political impact of the SDGs has employed two broad sets of methods so far: those that explore the detailed effects of the SDGs on political, societal and economic actors and their institutions and those that seek to measure whether societies are on track to achieve the SDGs. Both sets of methods are needed for a comprehensive understanding of the political impact of the SDGs, and it is important to build bridges across methodological communities that often work in isolation. In addition, we still lack data on the implementation and impact of the SDGs (see for example, refs. ^{70,71}), particularly regarding local governance and the least developed countries (for example, ref. ⁷²). Comparative in-depth studies of the political impact of the SDGs in local governance are laborious, time consuming and require adequate funding. Yet insights from such field research are of utmost importance to assessing the relevance of the SDGs.

Similarly, studies still tend to focus on a limited number of the 17 SDGs and only some of their interactions. Certain SDGs are under-researched as a result, such as SDGs 10 and 12, and comprehensive integrated studies that cover all 17 SDGs and their interactions are rare. Stronger efforts are needed in particular to understand the interlinkages between SDGs, the steering of the SDGs on national and global inclusiveness and the variation in the effects of the SDGs on different actors and institutions and how this influences overall progress towards sustainable development.

In summary, this assessment of over 3,000 scientific articles, mainly from the social sciences, provides sound evidence that the 2030 Agenda and the SDGs have had some impact from global governance to local politics. While this impact has so far been largely discursive, the SDGs have had some normative and institutional effects as well. The SDGs have fostered mutual learning among governments about sustainable development policies and strategies. In certain contexts, they have offered new instruments for local political and societal actors to organize around, to gain more support from governments or to mobilize international funding. The SDGs have also enabled non-governmental organizations to hold governments accountable and in some cases to counter the interests of powerful actors.

Overall, however, there is only limited evidence of transformative impact. There is little evidence that institutions are substantially realigned, that funding is (re-)allocated for sustainable development, that policies are becoming more stringent or that new and more demanding laws and programmes are being established because of the SDGs. Proposals to strengthen the role of the High-Level Political Forum on Sustainable Development—the entity in the United Nations system to regularly review the SDGs—are not supported by all governments (for example, ref. ⁷³). Accordingly, the global reporting system on the SDGs remains a weak peer-learning mechanism of governments; it might even lead to uncontested and unwarranted endorsements of national performances if governments and civil society organizations fail to act as watchdogs in policy implementation.

The SDGs are incrementally moving political processes forward, with much variation among countries and sectors and across levels of governance. Yet we are far from the ambition expressed by the United Nations General Assembly of ‘free[ing] the human race from the tyranny of poverty and want and heal[ing] and secur[ing] our planet’. More fundamental change is needed for the SDGs to become ‘the bold and transformative steps ... to shift the world on to a sustainable and resilient path’⁷⁴ that the 2030 Agenda of the United Nations has promised.

Methods

Search protocol. This assessment is based on a meta-analysis of the scientific literature on the political impact of the SDGs. The assessment covers over 3,000 studies, analysed by a team of 61 lead authors and contributing scholars. The studies that we included in this assessment were identified through a keyword search with the reference software Scopus, with search strings as provided in the Supplementary Information (see also the PRISMA diagram added as Supplementary Fig. 1).

The contributing authors were divided into five teams, each covering one of the following assessment dimensions: the political impacts of SDGs on global governance, domestic implementation, institutional integration and policy coherence, inclusiveness and ecological integrity at the planetary level. All author teams met virtually to define search terms associated with their assessment dimension. While most reviewed research addresses the implementation of the SDGs since January 2016, we included evidence from the 2012–2015 negotiations of the SDGs as well because the SDGs were already prominent in policy circles at that time. The quantity of literature per dimension varied greatly, which indicates research trends and under-researched issues. See Supplementary Table 1 for a full list of search terms and search strings used to collect data on each assessment dimension.

Screening process and data analysis. The five author teams first analysed the relevance of articles identified in the Scopus search by scanning their titles, keywords and abstracts (or if in doubt, introduction and conclusion) to decide whether to include them in the in-depth assessment. They excluded in this step

studies that did not substantially engage with the political impact of the SDGs (for example, studies that addressed SDGs only marginally) as well as purely programmatic, descriptive, conceptual or theoretical studies, even though the teams kept non-empirical studies that convincingly argued for the effects of SDGs.

The remaining studies were analysed in depth by smaller teams. Supplementary Table 1 lists the number of studies reviewed for each assessment dimension. (Note that there are a few double counts, as some sources were relevant for more than one dimension of this assessment. These double counts—which essentially signify that a study has been used for two assessment dimensions—are unlikely to impact the results.) The relative number of articles assessed in depth across assessment dimensions differs because some dimensions (for example, implementation and global governance) have been more extensively researched from a political perspective than others (for example, inclusiveness and planetary integrity). Authors screened and coded the articles according to the possible political impact of the SDGs, drawing on the typology of discursive, normative and institutional effects. They then analysed and interpreted this material. This analysis was guided by specific questions agreed upon in teams responsible for investigating the political impact of the SDGs in the different areas and based on our analytical framework (Supplementary Table 2). When literature was very scarce on a specific dimension, the interpretation from the qualitative content research was complemented by findings from grey literature and the authors' own more recent research and expertise.

Methodological limitations. While this assessment of the literature established common search protocols across author teams and their associated assessment dimension to reduce bias, there are limitations.

First, the approach of a meta-analysis of existing work, covering over 3,000 studies, necessarily required the assessment of studies that were all independently conducted by different authors and at different times, with varied approaches to assessing causality and with no overarching research design. This limits, for example, the assessment of causality for the impacts of SDGs, that is, whether an observed change in alignment with the SDGs is evidence for causation or correlation. We had to rely on the judgement made in each study around whether a causal link has been identified between the launch of the SDGs in 2015 and observed changes. Many studies followed a chronological approach, assuming that any discursive, normative and institutional alignments with the SDGs after 2015 are causally related to the SDGs, which appears to be a plausible assumption.

Second, the study relied on literature research using the Scopus database. We are reproducing, thus, the limitations of Scopus, which does not cover all scientific literature but focuses on journal publications. Scopus covers over 39,000 journals but only 1,628 book series, 514 conference proceedings and no books that are published outside an established series⁷⁵. This biases our research in favour of science communities that rely more on journal publications as opposed to books, including chapters in edited volumes. We have corrected this bias to some extent by adding other sources when the overall literature in a certain field was very scarce.

As a third limitation, despite the growing number of researchers who study the 2030 Agenda and the SDGs, we still lack data. This is particularly evident for data on the local level and data on the least developed countries.

Fourth, we have relied mainly on publications and data published in English, which under-reports findings from regions where English is not the common working language.

Fifth, the results may be limited due to the period of the assessment. Scientific studies published in 2020 or 2021 usually report on research conducted several months or even years before, and therefore we do not take the most recent empirical developments into account. For the same reason, the results do not account for the impact of the COVID-19 pandemic on the implementation of the SDGs.

Data availability

The underlying data are scientific articles that are copyrighted and are available with the respective publishers.

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F.B., T.H. and C.A.S. conceptualized the research, led the assessment process and wrote the article. M.B., S.B., P.C., L.G., R.E.K., L.J.K., M.N., A.O.L., C.O., P.P., R.R., Y.S., M.J.V., D.v.V. and B.W. co-led parts of the assessment and contributed to the analysis of data and to the writing of the article.

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Additional information

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