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The priorities of the 2030 Agenda for Sustainable Development revolve around 'people', 'planet' and 'prosperity'. Yet, the precise relationship between these three concerns remains vaguely defined in the 2030 Agenda, as does the place of the 'planet' in this plan of action. Implicit in the 17 Sustainable Development Goals is that we can ensure global prosperity and equality only within a stable ecological context. Commentators acknowledge that how countries pursue ecological objectives will directly affect their 'ability to address the majority of the Sustainable Development Goals' (Vasseur et al. 2017: 732). The Sustainable Development Goals must therefore, in principle, seek to secure the basis of human well-being, while maintaining the biophysical capacity of our planet. Although it remains debatable what this implies in practice, it is reasonable to assume that the integrity of the earth's life-support systems, or *planetary integrity* in short, must be maintained for long-term sustainability. Then the following questions arise: To what extent have the Sustainable Development Goals advanced planetary integrity, and where can we see positive changes towards planetary integrity in governance efforts that can be attributed to the global goals?

This is the central question in this chapter. We first offer a brief account of the concept of planetary integrity as a global public good that is maintained by keeping the earth system within its ecological limits (Westra, Bosselmann and Gwiazdon 2018). By drawing on an extensive literature survey, we then reflect on a theoretical debate about the actual and potential role of the Sustainable Development Goals in advancing planetary integrity; a debate that, while ranging between optimism and scepticism, is predominantly sceptical about such potential. Next we provide four examples situated at the international, regional, local and transnational levels of governance within which the Sustainable Development Goals aim to steer (see, for a similar approach, Biermann and Kim 2020a). At the international level we consider key environmental institutions, namely, the United Nations Environment Assembly and the international regimes on climate change

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and biodiversity, and contrast this perspective with an analysis of the International Labour Organization, which is not explicitly concerned with environmental matters. Regionally, we shift our analysis to the European Union and the Economic Commission for Latin America and the Caribbean, which offers contrasting perspectives from the Global South and Global North on how regional institutions use the Sustainable Development Goals to pursue planetary integrity. At the national level, we discuss how South Africa, a hugely diverse country and an influential political and economic player in Africa, engages with the Sustainable Development Goals to pursue socio-economic development in the context of planetary integrity. We then focus on the role of transnational corporations, as increasingly influential global actors, in employing the Sustainable Development Goals in their efforts to advance, or hinder, the pursuit of planetary integrity. We conclude with a summary of our findings, a reflection on theoretical implications, and suggestions for future research.

We do not claim to cover the entire spectrum of perspectives, or that the findings from the international, regional, national and transnational examples we discuss are generalizable. However, we seek to contribute to theory-building on when and how governance through global goals work (Kanie and Biermann 2017), and to make policy-relevant recommendations for the second half of the 2030 Agenda and the discussions for the period after 2030.

Conceptualization and Methods

The idea of the Anthropocene suggests that humans are embedded in the earth system and able to alter its vital functions. Human activities are now being exercised on a planet that is not passive, but increasingly hostile and unpredictable, with important consequences for governance and law (Biermann 2014; Kotzé 2020). Our future will be determined as much by the earth system of which we are an integral part as by our choices and behaviour, which, in turn, are shaped by grand development visions such as the Sustainable Development Goals (Stengers 2015). Planetary integrity will therefore have to be maintained to sustain all life on earth. The notion of planetary integrity derives from its root term 'ecological integrity', which was initially developed to describe the declining state of biodiversity on a sub-global scale (Hurley and Tittensor 2020; Westra 2005). In this context, 'integrity' is a way of thinking about ecological health affected by human activities (Burdon 2020; Kim and Bosselmann 2015).

The concept of planetary integrity is becoming popular at several levels of analysis (Parnell 2018). It is, for example, implied in the notion of planetary boundaries – a conceptual framework that seeks to quantify the 'safe limits outside of which the Earth system cannot continue to function in a stable, Holocene-like

state' (Rockström et al. 2009: 474; also Steffen et al. 2015). Here, planetary integrity is used, and has been critiqued (Biermann and Kim 2020b; French and Kotzé 2021), to describe a 'safe operating space' beyond which the earth system will behave in unpredictable ways, and to describe a threshold for the ability of ecosystems to support human society (Bridgewater, Kim and Bosselmann 2014). The boundaries include, among others, those for a safe climate, for protecting biodiversity, and to avoid serious pollution.

The safe operating space for humanity is, however, getting smaller, at a rate much faster than initial predictions. Evidence from earth system science shows unprecedented and accelerating levels of global environmental change and associated deepening of socio-ecological injustices between and within generations, which affect humans and non-humans. The signs of decaying planetary integrity are apparent in terms of epistemic frameworks such as the Anthropocene and predictions showing that we are fast approaching global tipping points (Lenton et al. 2020), and possibly even a Sixth Mass Extinction event (Briggs 2017). There now seems to be general agreement that planetary integrity is being impacted in unprecedented ways, and that deliberate and thoroughgoing steering mechanisms, such as through the Sustainable Development Goals, are urgently needed (French and Kotzé 2018). Yet, have the global goals also advanced planetary integrity, and where do we see positive changes towards planetary integrity in governance efforts that can be attributed to the global goals?

This chapter offers a range of perspectives that trace out preliminary answers to these questions. We conducted a systematic qualitative literature survey using *Scopus*. We searched for publications published in English before 2021 that include the Sustainable Development Goals or the acronym in their title, abstract or keywords with reference to the environment in conjunction with governance.[1] This search returned 101 studies, among which we found 15 publications to be particularly relevant for our chapter. This choice of highly relevant publications has informed the core findings of our analysis. We then also drew on other sources that reference, or are referenced by, these publications, which we relied on to guide, elaborate and substantiate our discussion of the literature we surveyed. Very few of these publications explicitly discuss the actual or potential steering effects of the Sustainable Development Goals in relation to planetary integrity, and where they do, they predominantly focus on the potential instead of the actual steering effects of the Goals. Concrete empirical analysis of the actual steering effects of the Sustainable Development Goals in relation to planetary integrity is therefore still lacking, which points to a clear research gap and the need for future analyses. As a result of this gap, for present purposes, we complemented this theoretical discussion with a meta-assessment that draws on grey literature and the multidisciplinary expertise and perspectives of the authors. These focused

discussions offer a snapshot of perspectives from the Global South and Global North, and the multiple complex concerns that lie at the heart of the 2030 Agenda, including views on the potential and actual environmental steering effects of the Sustainable Development Goals in varied contexts.

Research Findings and Practical Insights

In this section we present key findings of the literature review on the potential and limits of the Sustainable Development Goals in steering societies towards planetary integrity. We understand the steering effects of the Sustainable Development Goals here through the lens of institutionalism. The Sustainable Development Goals reflect the interests, ideas and aspirations of differentially endowed actors (Kashwan, MacLean and García-Lopéz 2019), and they reflect dynamic settlements (Mahoney and Thelen 2009). As all institutions, the Sustainable Development Goals are human creations within socio-economic and political contexts and remain susceptible to continuous manoeuvring by many actors. In our analysis of the steering effects of the Sustainable Development Goals, we are therefore sensitive to the configuration of the purposes that the specific framings and designs of the goals are oriented to serve in the context of planetary integrity. Our analysis also broadly embraces an understanding of the types of steering effects as elaborated in Chapter 1. To this end, the assessment specifically looks at whether and in what ways the Sustainable Development Goals have led to changes (positive and negative) in relation to how political, economic and societal actors pursue planetary integrity. We seek to determine whether it is possible to observe actual or potential policy, legal and broader regulatory framework (normative) changes; institutional changes such as the creation of new governance structures; and discursive changes in and of civil society actors.

The Potential for Environmental Steering by the Goals

Several studies refer to the Sustainable Development Goals as an important frame for sustainable development (e.g., Racioppi et al. 2020). Yet, these studies do not attribute any primary steering powers to the Sustainable Development Goals, and the goals are not seen as *directly* steering behaviour (De Schutter et al. 2019; Mansourian 2018; Smith et al. 2019). Instead, researchers find rather indirect steering where Sustainable Development Goals act as 'orchestrators' (Biermann, Kanie and Kim 2017; Underdal and Kim 2017). One example is when the Sustainable Development Goals facilitate the clustering of international agreements or serve as collective 'headlines' (for example, Sustainable Development Goals 14 and 15 for biodiversity). One study concludes that 'clear lines of sight between

the SDGs and their impacts are unlikely to emerge. Rather, the SDGs are likely . . . to have a range of "messy, contradictory and refractory effects"' (Hirons 2020: 322).

Several factors might complicate the ability of the Sustainable Development Goals to have environmental steering effects. For example, environmental targets under the Sustainable Development Goals often sit in non-environmental goals, with indicators ending up diluting or contradicting the environmental 'mission' of the 2030 Agenda as a whole (Elder and Olsen 2019). Some scholars, for example, have argued that the goals for eradicating poverty or economic growth could result in environmental degradation (Liverman 2018; Sexsmith and McMichael 2015). At the same time, most environmental targets under the Sustainable Development Goals were extracted from earlier agreements, which might draw resistance from other bodies or agreements in the same area, and even give rise to conflicting priorities (Elder, Bengtsson and Akenji 2016; Kim 2016). The potential for turf wars in such a setting is real, as is the lack of ambition of the goals (Kotzé and French 2018). Such turf wars could limit the steering effect of Sustainable Development Goals and significantly weaken efforts to pursue ambitious environmental protection through law, policy and governance. Some commentators hence argue that the goals may help to highlight environmental protection as a concern in achieving sustainable development, but that their rationale and content remains still structurally incompatible with steering towards the more ambitious goal of planetary integrity (Griggs et al. 2013).

Inherent Design Limitations

Some studies also argue that the Sustainable Development Goals might even have a negative steering effect on planetary integrity in that they could incentivize countries to further subordinate environmental priorities in their developmental plans (Zeng et al. 2020). In other words, doubts about the steering qualities of the Sustainable Development Goals towards environmental protection arise not only from their ability to steer, but also from the fact that they do not seem to prioritize environmental protection in the first place (Craig and Ruhl 2020). The 2030 Agenda's explicit inclusion of the 'planet' as one of its main concerns might signal some focus on a planetary perspective, although the agenda does not refer explicitly to 'planetary integrity', or to 'planetary limits' or 'planetary boundaries' (Elder, Bengtsson and Akenji 2016; Randers et al. 2019). The absence of an overarching environmental or 'planetary' goal is remarkable (Brandi 2015), with environmental protection left to a cluster of environment-focused Sustainable Development Goals down the list at numbers 13, 14 and 15. While including these explicit environmental goals might advance environmental protection, some also

argue that Goals 13, 14 and 15 could compartmentalize environmental issues (climate, land and oceans) without an overarching SDG on 'planetary integrity' (Costanza et al. 2015; Kim 2016; Kim and Bosselmann 2015; Young et al. 2017). Therefore, simply based on a textual analysis of the Sustainable Development Goals, the goals do not pursue planetary integrity as such, but do recognize the importance of protecting environmental aspects such as climate, land and the oceans.

Where environmental protection was integrated into several non-environmental goals, the Sustainable Development Goals also adopted some conservative and unambitious perspectives on the tensions between economic growth and environmental sustainability (Adelman 2018; Eisenmenger et al. 2020; Kotzé 2018). This is evident, for example, in their emphasis on longstanding but dubious claims about decoupling and resource efficiency as technological solutions to the environmental crisis (Elder and Olsen 2019; Fletcher and Rammelt 2017). Governments also rejected as potential core ideas underpinning the Sustainable Development Goals the more transformative objective of looking beyond gross domestic product as an indicator of prosperity (Costanza et al. 2015); the notion of planetary boundaries and the limits this would imply for unrestrained neoliberal development (Elder and Olsen 2019); and the need for robust implementation measures, which are currently considered to be 'not carefully thought out or systematic' (Elder, Bengtsson and Akenji 2016: 6). For example, Gasper, Shah and Tankha (2019) show that while the emergence of Sustainable Development Goal 12 (to ensure sustainable consumption and production patterns) as a stand-alone goal resulted from pressure by developing countries on industrialized countries, it was in the end business interests that shaped the targets and indicators under this goal. This explains why Goal 12 reflects a narrative of 'sustainable growth', which some critics consider a business-friendly, neoliberal approach embedded in sustainable development, and which places much faith in yet-to-be-developed future technological innovations (Adelman 2018).

Several intergovernmental environmental agencies and civil society groups took part in the formulation of the Sustainable Development Goals, which could have increased the ambition of these goals towards environmental protection (Sénit 2020). However, the influence of governments and business organizations prevailed and resulted in unambitious and vague targets of a non-committal nature (Gasper, Shah and Tankha 2019). Similarly, growth as envisaged in Sustainable Development Goal 8 is seen to be inherently incompatible with environmental protection targets, such as those articulated in Goals 6, 13, 14 and 15 (Hickel 2019). Some therefore argue that the Sustainable Development Goals' focus on sustainable *economic* development is inevitably detrimental to planetary integrity and justice (Kotzé 2018), which require both limits to economic growth

and the removal of 'developmental' disparities between the rich and the poor (Kashwan et al. 2020; Lydgate 2012).

A Matter of Window Dressing?

Some studies point to the dangers of 'cherry picking', 'window dressing' and 'greenwashing' (e.g., Forestier and Kim 2020). On paper, the 17 Sustainable Development Goals are unprioritized and all equal (see also Chapter 4 of this book): The goals are at least in spirit a 'network of targets' (Le Blanc 2015). However, they do not come as a truly indivisible package, but leave room for governments to strategically prioritize certain goals in their implementation (Forestier and Kim 2020). One study claimed that the goals are all 'characterized by an absence of any top-down priority setting mechanisms [and] States have the freedom to pursue (or ignore) the goals however they want' (Hirons 2020: 325). For instance, it has been argued that governments and businesses actively prioritize the social and economic goals over the environmental goals in both rhetoric and practice (Craig and Ruhl 2020). Even the 2030 Agenda explicitly says that environmental threats merely 'add to and exacerbate' the list of challenges faced by humanity (UNGA 2015: 5). This ignores evidence that environmental degradation is caused by a narrow focus on economic growth, and it undermines the goals of broad-based development that is at once just, fair and equitable and that can only be achieved in the context of a healthy ecosystem (Adelman 2018). Studies suggest that instead of promoting a more holistic form of ecologically friendly development, many governments still prioritize economic growth while neglecting environmental protection (Custer et al. 2018). Commentators have shown that among the 169 targets under the Sustainable Development Goals, environmental targets are often less easily trackable and measurable, and require larger and more uncertain investments (Craig and Ruhl 2020). As we show below, the prioritization of non-environmental goals also results from political–business cycle dynamics: short-term economic growth and ill-conceived ideas of development trump longer-term planetary integrity, and then create a vicious cycle that further subordinates planetary integrity (Kotzé 2018). All this goes to the heart of concerns about the ontological design and ethical orientation of the Sustainable Development Goals: their focus seems to remain, as one study argues, on 'growth and use of resources … and [it] departs from an individual, not collective, point of view'; and they remain 'underpinned by strong (Western) modernist notions of development: sovereignty of humans over their environment (anthropocentricism), individualism, competition, freedom (rights rather than duties), self-interest, belief in the market leading to collective welfare, private property (protected by legal systems), rewards based on merit, materialism,

quantification of value, and instrumentalization of labour' (van Norren 2020: 453; see also Liverman 2018).

These insights in the literature lead one to question whether the Sustainable Development Goals are the *appropriate* vehicle to pursue planetary integrity. Some critics argue that the goals are inappropriate for this purpose and show, for example, that the goals do not acknowledge the centrality of healthy ecosystems to the optimal functioning of the vast majority of social and economic systems (Kotzé and French 2018). In other words, the Sustainable Development Goals fail to recognize that planetary, people and prosperity concerns are all part of one earth system, and that the protection of planetary integrity should not be a means to an end, but an end in itself.

Some studies also see the Sustainable Development Goals as essentially anthropocentric and mainly aimed at promoting economic development for (some) humans, despite their high rhetoric to the contrary. These studies argue that the goals are therefore unlikely to help solve the fundamental planetary problems that arise from the specific type of unbridled neoliberal economic development that the Sustainable Development Goals promote (Adelman 2018; Kotzé 2018). A principal concern is that the Sustainable Development Goals remain fixated on the idea that economic growth is foundational to achieve all pillars of sustainable development; as one author argues, 'the SDGs are not biocentric aiming to respect nature for nature's sake, enabling reciprocity with nature. They embody linear growth/results thinking which requires unlimited resource exploitation, and not cyclical thinking replacing growth with well-being (of all beings)' (van Norren 2020: 431).

In sum, owing to ontological and systemic factors, and limitations in their design and purpose, the available literature does not see the Sustainable Development Goals as having any significant potential to steer governance towards a prioritization of planetary integrity. Whatever indirect steering effects the Sustainable Development Goals might have in this respect are merely implied through the environmental goals at the bottom of the list of the Sustainable Development Goals. On the one hand, these environmental goals might facilitate discussions about the importance and potential of the Sustainable Development Goals to pursue planetary integrity. They also might inspire future initiatives that eventually drive positive change (Kopnina 2018). Indeed, there is 'an increased recognition of the importance of the environment in the SDGs' (Vasseur et al 2017: 732). On the other hand, the findings of our literature survey support the view that the Sustainable Development Goals are not fully geared towards steering, and capable of facilitating, the pursuit of planetary integrity. Zeng et al. (2020) put this in even starker terms, that 'environmental destruction [has not been] avoided with the Sustainable Development Goals'.

We further explore this insight below, with reference to experiences at the international, regional, national and transnational levels of governance in order to determine in more practical terms what the steering effects of the Sustainable Development Goals in mainstreaming planetary integrity have been.

Experiences from International Governance

We start with experiences from international governance. Here, the United Nations Environment Assembly is often considered to be the world's most influential international institution for global environmental governance. Considering the centrality of the Sustainable Development Goals to the world's development vision and the prominence of the Assembly and its pivotal role in global environmental governance, one would expect that the Sustainable Development Goals are a key consideration in the agenda of the United Nations Environment Assembly. Such a consideration is supported by literature on the relationship between international institutions and organizations and the Sustainable Development Goals, with studies on whether and how international bodies can contribute to the 2030 Agenda, including environmental protection (Cormier 2016). Much scholarly attention has therefore been on the contribution of international institutions, such as the United Nations Environment Assembly (e.g., Ivanova 2021), to environmental protection, although not explicitly as part of the Sustainable Development Goals (Perrez 2020). This reflects public statements and policy documents by these institutions, which all stress their commitment to living up to the challenge of global environmental protection. Yet, it remains unclear to what extent the United Nations Environment Assembly has actually promoted planetary integrity through incorporating the environmental dimensions of the Sustainable Development Goals in its programmes.

At first glance it seems that the Assembly has done rather well. For example, the titles of several meetings of the Assembly embrace concerns of the Sustainable Development Goals, such as the first United Nations Environment Assembly, which focused on 'Sustainable Development Goals and the Post-2015 Development Agenda, including sustainable consumption and production'; and the fourth assembly on 'Innovative solutions for environmental challenges and sustainable consumption and production'. The choice of theme for the fifth United Nations Environment Assembly, 'Strengthening Actions for Nature to Achieve the Sustainable Development Goals', suggests further attention to the links between the Sustainable Development Goals and planetary integrity. This holds out considerable potential for the Assembly to govern the complex interactions arising from the Sustainable Development Goals, with a view to ultimately promoting environmental concerns as its core mandate (Kaniaru 2014; Rantala et al. 2020).

On closer examination, however, it seems that the United Nations Environment Assembly has undertaken only tentative steps towards governing these interactions in pursuit of planetary integrity. Attention to nexus issues that could support broader environmental and societal benefits has gradually increased as has support for cross-sectoral policy coherence (Rantala et al. 2020). For example, the Assembly has emphasized the need to improve links between pollution, climate change, biodiversity loss and ecosystem degradation (UNEA 2018), and the need to strengthen links between soil pollution, land use and the Sustainable Development Goals (UNEA 2017). Another area where the Assembly has much potential to facilitate synergies between the Sustainable Development Goals and environmental protection is sustainable consumption and production, which it considers essential to improve sustainability and to support the achievement of all other goals that relate to Goal 12 (Rantala et al. 2020).

In other areas, again, the Assembly fares worse than expected. For example, an opportunity to address interactions was missed at the fourth United Nations Environment Assembly, which failed to approve a draft resolution 'Deforestation and agricultural commodity supply chains', which was intended to halt deforestation (Goal 15) while contributing to ensure food security and nutrition (Goal 2) (Rantala et al. 2020). Therefore, while the United Nations Environment Assembly is a proponent of the Sustainable Development Goals, it mostly uses the goals to facilitate synergies between disparate environmental regimes, and to 'contemporize' the work it does through the label of the Sustainable Development Goal. The Assembly has not yet offered anything radically different that would suggest an ambitious change of course towards planetary integrity within the context of the Sustainable Development Goals.

As far as the climate regime is concerned, the Intergovernmental Panel on Climate Change recognizes the links between the Sustainable Development Goals and climate change. It has done so in its special report on *Global Warming of 1.5°C*, where it highlighted the Sustainable Development Goals as a key consideration in how countries can engage in decarbonized development pathways for sustainable development (IPCC 2018). Chapter 5 of the report, in particular, looked at how climate change might undermine the Sustainable Development Goals, and at possible synergies and trade-offs between responses to climate change and the goals. With the forthcoming Intergovernmental Panel on Climate Change Sixth Assessment Report also likely to connect climate change to the Sustainable Development Goals, such links are encouraging insofar as influential global scientific climate change assessments at least seem to rely on, and to reflect, the many dimensions propagated by the Sustainable Development Goals, including their environmental dimensions. Interestingly, however, the 2030 Agenda is not a major reference in the Paris Climate Agreement and climate governance debates,

although the co-evolution of the negotiations on the 2030 Agenda and the preparation of the Paris Climate Agreement in 2015 have mobilized some of the core principles of the 2030 Agenda. For example, the SDG-linked notion of 'co-benefits' between decarbonization and economic development, and between decarbonization and the reduction of inequalities (Deep Decarbonization Pathways Project 2015), has been central to ensuring support for the Paris Climate Agreement by some emerging economies and their corporations. Despite valid concerns that this might merely amount to greenwashing (Johnsson et al. 2020), it at least highlights interactions between key Sustainable Development Goals and climate change in global climate change negotiations. The inclusion of Nationally Determined Contributions and national Long-Term Strategies in the Paris Agreement is also consistent with the centrality of country-specific transformation pathways to reach the Sustainable Development Goals, as some proponents of the 2030 Agenda point out (Kőrösi 2015). Although it is difficult to say whether this is as a direct result of the Sustainable Development Goals, the need to develop decarbonization pathways that can protect biodiversity has also been put at the centre of climate negotiations (Deprez, Vallejo and Rankovic 2019) – an effort that emphasizes possible synergies, but also conflicts, between two directly related Sustainable Development Goals. With respect to climate finance, some financial actors have begun to align their investment portfolios with the Paris Climate Agreement (for example, by aligning Goals 8 and 9 with Goal 13), both as a pilot initiative and long-term learning process aimed at more fully synergizing their portfolios with the 2030 Agenda over the long term (OECD and UNDP 2020; Riaño et al. 2020). A redirection of global investment strategies alongside the framework of the Sustainable Development Goals, including, for example, increased investment in renewable energy, could in time promote more sustainable corporate practices that have planetary integrity as a major focus.

Reference to the Sustainable Development Goals is more explicit in the biodiversity regime. For example, the Global Assessment Report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services emphasizes the contribution of biodiversity and ecosystem services to realize all the Sustainable Development Goals (IPBES 2019). The draft texts under discussion for the proposed 2030 framework of the 1992 Convention on Biodiversity also reference the 2030 Agenda and the institutions in charge of this agenda through two entry points. One is the proposed global biodiversity goals for 2030 that will be decided at the 2021 conference of the parties. These will likely include not only goals centred on biodiversity but also on the contribution of biodiversity to reaching Sustainable Development Goals and their targets, such as food security (Convention on Biodiversity 2020). The overall aim of these goals is to anchor biodiversity integrity in the broader development perspectives of countries.

Another entry point is efforts related to facilitate mainstreaming, where the Convention on Biological Diversity could define a collective work programme with other institutions that are responsible for sectors that impact biodiversity conservation (such as the Food and Agricultural Organization for food systems transformation, and the World Trade Organization for global trade). To legitimize such a co-defined work programme, which is aimed at strengthening synergies, some studies have proposed that the High-level Political Forum on Sustainable Development should be the overarching institution for such a process (Kinniburgh and Rankovic 2019).

While the Sustainable Development Goals seem to have shaped discussions around the climate and biodiversity regimes and to have drawn attention to and consolidate support for specific concerns and their interlinkages, many key issues of planetary integrity had been part of negotiations well before the adoption of the 2030 Agenda. In climate governance, for example, negotiations on issues that could create wider environmental co-benefits beyond Sustainable Development Goal 13 – such as land use, land-use change and forestry – precede the 2030 Agenda. In 2011, states set guidelines for activities on land use, land-use change and forestry under the United Nations Framework Convention on Climate Change that should '[b]e consistent with the objective of environmental integrity and take into account the multiple functions of forests and other ecosystems' and '[b]e consistent with Parties' national sustainable development needs and goals' (UNFCCC 2010). In biodiversity governance, the Sustainable Development Goals are grounded in earlier commitments from several international agreements and soft law instruments, rather than the other way around. This is reflected, for example, in the Aichi Targets, which form the basis of the targets under Sustainable Development Goal 15, including target 15.1 on conservation and target 15.3 on reversing biodiversity degradation. The post-2020 global biodiversity framework that will define goals for global biodiversity governance up to 2030 further builds on these targets, but also aims to raise ambition, especially those targets under Goal 15 that end by 2020 (for example, targets 15.1, 15.2 and 15.3) (Rantala et al. 2020). While the Sustainable Development Goals can build on previous commitments, some studies highlight the adverse distributional consequences of biodiversity conservation regimes that are concentrated in countries with high levels of economic inequality and poor democratic institutions (Kashwan 2017). This is an instance of potential trade-offs between the centralizing tendencies of goal-oriented governance against the potential for process-oriented approaches that offer alternative opportunities to resolve deliberations over the prioritization of goals.

So far, we have discussed international institutions with an explicit environmental policy mandate. How about institutions that have environmental protection

not as their primary task? Are they influenced by environmental components of the Sustainable Development Goals? The limited literature on this issue (the bulk of information is drawn from studies conducted by these institutions themselves) observes here mostly 'secondary' steering towards environmental protection by upgrading an institution's environmental profile to contribute to the overall success of the 2030 Agenda (e.g., IMF 2021; World Bank 2015). Secondary steering refers to change that happens 'in the name of the Sustainable Development Goals'. For example, one study has shown a trend towards more environmental integration in the International Labour Organization's approach to sustainability, in normative and institutional terms (Montesano et al. 2021). This trend seems to have accelerated and coincides with the vision of the 2030 Agenda. However, when it comes to environmental protection, the link between the International Labour Organization and the Sustainable Development Goals is not straightforward. On the one hand, the negotiation and adoption of the goals has left its mark on the evolution of environmental ideas, norms and institutions within the International Labour Organization, particularly regarding framing programmes such as Green Jobs and partnerships for sustainability (ILO 2019). On the other hand, the International Labour Organization sees itself more as a manager than a recipient of the goals, stressing its active and deliberate role in shaping the 2030 Agenda in line with its priorities and in selectively using the goals as a platform to catalyse its socio-economic mandate (ILO 2015; 2016).

In sum, *the literature studies do not support claims that the Sustainable Development Goals reorient international organizations towards planetary integrity*, especially when such organizations are only indirectly concerned with environmental protection, such as the International Labour Organization (Montesano et al. 2021). The Sustainable Development Goals at best only seem to have secondary steering effects in this regard. Their impact on international organizations, as far as advancing planetary integrity is concerned, is indirect to the extent that they only offer a loose framework for creating synergies and emphasising the need to pursue environmental protection goals, many of which have already been agreed well before the 2030 Agenda came into being. Considering our earlier arguments about the limited prominence of planetary integrity in the 2030 Agenda and conceptual doubts about the ability of the Sustainable Development Goals to steer towards planetary integrity, expectations related to their impact on international organizations to pursue planetary integrity must be further diluted.

Experiences from Regional Governance

It is often claimed that the European Union is a frontrunner in regional environmental governance. It is, for example, one of the few major regional actors

to have enshrined the concept of planetary boundaries in its legal system (Fernández and Malwé 2019). Some early European Parliament resolutions already featured the idea of planetary boundaries, including one mentioning them as being 'imperative' for the 2030 Agenda (European Parliament 2013a), while the 7th Environment Action Programme, titled 'Living Well, within the Limits of Our Planet', includes references to planetary boundaries and ecological limits. More recent studies by European Union agencies, such as the European Environment Agency, further apply the concept and develop the idea of a 'safe operating space for Europe' (European Environment Agency 2020). The Environment Action Programme also directly links its ambitious vision of ecological limits with the Sustainable Development Goals: the goals constitute 'politically binding environmental commitments' (European Parliament 2013b: paragraph 13), and both the European Union and its member states are to ensure that such commitments are implemented (Corrado et al. 2020). The Environment Action Programme further calls on the European Union to ensure that its post-2015 approach to development, including its reliance on the Sustainable Development Goals, reflects an integrated understanding of sustainable development. It specifically mentions environmental concerns such as climate change and biodiversity (European Parliament 2013b: paragraph 106.i).

Likewise, a 2016 European Commission communication explicitly links the need to transform European Union production and consumption to achieve a 'low-carbon, climate resilient, resource efficient and circular economy' to Sustainable Development Goals 8 and 12 (European Commission 2016: 2). More recently, the European Union Circular Economy Action Plan and the Bioeconomy Strategy of 2018 have showcased the growing awareness of the importance of an integrated approach to production and consumption when addressing environmental impacts (Sanyé-Mengual et al. 2019). The European Union Commission's Directorate-General for International Partnerships also explicitly links European Union development initiatives to the Sustainable Development Goals (European Commission 2020a). For example, with reference to Goal 13, it stresses European Union assistance to partner countries to transition to low-carbon sustainable development. All this shows that the Sustainable Development Goals have played a role in orienting the European Union's environmental laws and policies towards the pursuit of planetary integrity – at least on paper.

While these are all positive signs that could advance planetary integrity under the guidance of the Sustainable Development Goals, the European Union's goals-inspired sustainability roadmap still sees economic growth as a key enabler, in stark contrast to scientific evidence about the incompatibility of economic growth and long-term environmental protection (Hickel 2021). For example, for Goals 14 and 15, there are no specific indications in European Union law and policy

about new initiatives that would follow the Sustainable Development Goals, only a cursory mention of earlier programmes, such as Biodiversity for Life, which was launched in 2014.

Nevertheless, environmental concerns linked to the Sustainable Development Goals seem to become more central in Brussels. For example, the Juncker Commission published in 2019 a reflection paper titled 'Towards a Sustainable Europe by 2030' (European Commission 2019), which mentioned the Sustainable Development Goals as an agenda for the European Union to address interdependent challenges. The paper emphasizes 'ecological debt' as the greatest challenge to ensuring sustainability for future generations, and explicitly mentions planetary boundaries as the ecological limits that must shape socio-economic systems (European Commission 2019: 10). In its text on Sustainable Development Goal 15, the link between the 2030 Agenda and planetary integrity discourse is especially strong. The von der Leyen Commission later launched the European Union Green Deal as an umbrella for a range of policy initiatives to make Europe a climate-neutral continent. One such initiative is the European Union 2030 Biodiversity Strategy (European Commission 2020b); another is a new industrial strategy (European Commission 2020c). In some of these initiatives, links to the Sustainable Development Goals are explicit, and the initiatives are often presented as an integral part of the European Union's efforts to achieve the 2030 Agenda (European Commission 2020b: 19), highlighting some convergence between global and European sustainability agendas.

Across the Atlantic, the Latin America and the Caribbean region is important in leading up to the adoption of the 2030 Agenda and the Sustainable Development Goals. Here, many countries and regional governance bodies were involved in the negotiations on the Sustainable Development Goals (Nicolai et al. 2016). As a response to the United Nations' call for regional cooperation in implementing the 2030 Agenda, the members of the Economic Commission for Latin America and the Caribbean (ECLAC) established a forum on sustainable development in 2016 (ECLAC 2016). This forum is open to stakeholders but remains a state-led regional institution that seeks to contribute to the 2030 Agenda by, among others, strengthening coordination and cooperation, sharing best practices and providing political guidance and reviewing regional progress. The forum also seeks to foster the integration of the three dimensions of sustainable development in a holistic and cross-sectoral manner, including environmental protection and the promotion of living well in harmony with nature. Since its creation, the forum has recognized in several of its meetings the environmental dimensions of the Sustainable Development Goals (UNEP and Centro de Pensamiento Estratégico Internacional 2020). For instance, it has been noted that development policies 'must take into account the environmental dimension' and that policy-making should 'promote

structural progressive change towards sustainable development in order to protect ecosystems and biodiversity'; 'break the link between production and pollution'; 'move towards low carbon economies'; 'detoxify the air, soil and water' and promote a shift towards sustainable use of natural resources (ECLAC 2017, 2018). Governments also stressed that the '2030 Agenda, more than having environmental goals, was environmental as a whole, because progress could not be made on health or industrialization without taking the relevant environmental considerations into account' (ECLAC 2018: 41). While all these references indicate some efforts of the forum to integrate the environmental dimension of the Sustainable Development Goals into regional policies, these are still limited and do not include specific commitments (UNEP and Centro de Pensamiento Estratégico Internacional 2020). Critics also question to what extent this might lead to a form of socio-economic growth that respects planetary integrity in Latin America and the Caribbean, especially when environmentally destructive investment policies continue being prioritized (Ray and Gallagher 2016). The forum, for example, still prioritizes economic issues, while stressing the need for economic growth (ECLAC 2017, 2019), which will presumably be based on the extraction-based model prevailing in Latin America and the Caribbean (Silva 2012).

The Forum of Ministers of Environment of Latin America and the Caribbean contributes to the integration of environmental priorities into the implementation of the 2030 Agenda (UNEP 2016; UNEP and Centro de Pensamiento Estratégico Internacional 2020). In 2016, the forum revised and updated the Latin American and Caribbean Initiative for Sustainable Development to support the 2030 Agenda (UNEP 2016). The Initiative for Sustainable Development includes priority areas, goals and purposes for actions linked to environment-related Sustainable Development Goals, such as water management (Goal 6); energy (Goal 7); and climate change (Goal 13). The forum also agreed to promote the conservation and sustainable use of biodiversity and its mainstreaming in sectors such as agriculture, mining and energy (UNEP 2016, 2018).

Yet, despite such alignment of policies with environment-related Sustainable Development Goals, some studies doubt the benefits in relation to advancing planetary integrity in the region. For example, Hirons' (2020: 327) study on the interplay of the goals and mining argued that 'the prospects for the Sustainable Development Goals contributing positively to efforts to address environmental and social issues in ASM [artisanal and small-scale mining] are poor'. With reference to Goal 12, the Initiative for Sustainable Development refers to the need to improve resource efficiency and sustainable patterns of consumption and production to support economic growth (UNEP 2016). But in a region where national economies heavily rely on natural resources extraction and exports (Silva 2012; UNEP 2017), sustained economic growth inevitably leads to an increased

demand for these resources while amplifying environmental degradation (UNEP and World Conservation Monitoring Centre 2016).

In 2016, the Organization of American States adopted the Inter-American Program for Sustainable Development 2016–21 (Organization of American States 2017a). It defines strategic actions to ensure that the work of the organization's secretariat is aligned with the implementation of the 2030 Agenda, and that its objectives are guided by the Sustainable Development Goals (Organization of American States 2017a). The programme supports actions in focus areas, such as sustainable management of ecosystems (Goal 15); integrated water resources management (Goal 6); and sustainable energy management (Goal 7). While the Organization of American States has agreed on an institutional policy instrument that integrates environmental concerns, and while its members have reaffirmed their 'inalienable prerogative to defend Mother Earth, the planet, and life with consistent policies and practices' (Organization of American States 2017b: 95; original in Spanish), the declarations and resolutions adopted by its General Assembly since 2016 show that no significant actions have been taken to establish an ambitious regional scheme towards safeguarding planetary integrity.

In sum, the Sustainable Development Goals seem to be more central in regional governance bodies as compared to international organizations. Our analysis suggests that it is especially the European Union that has most significantly advanced in linking its governance agenda with the 2030 Agenda and developing environment-focused policies because of the Sustainable Development Goals. In the Global South, Latin American and Caribbean institutions seem to be rhetorically committed to integrating the Sustainable Development Goals' concerns into regional policies, but they fall short on more concrete action plans (Lucci, Surasky and Gamba 2015; Páez Vieyra 2019; UNEP and Centro de Pensamiento Estratégico Internacional 2018) While both of these regional institutions seem to actively recognize the importance of the Sustainable Development Goals and their environmental goals, which have been incorporated into some regional policies and plans, *the actual environmental steering effects of the Goals seem to be limited, while efforts to strengthen environmental protection in the face of unconstrained socio-economic development remain a challenge*. We therefore doubt whether the Sustainable Development Goals as such will suffice to drive radical change towards planetary integrity in a developed European region where economic development remains a key priority, and in the Latin American and Caribbean region, which continues to face numerous environmental conflicts and developmental challenges.

Experience from National Governance

We now turn to national governance. Here we focus on the example of South Africa, a highly unequal country with many socio-economic challenges, including

poverty, unemployment and low and unequal levels of access to water, sanitation and adequate housing. These must all be addressed within the context of a fragile ecological system.

Some progress has been reported: for example, access to electricity has increased from 36 per cent at the end of apartheid to 95 per cent by 2017 (Bekker et al. 2008; Government of South Africa 2019). This contributes to achieving Sustainable Development Goal 7, which in turn helps realize other goals (Fuso Nerini et al. 2018; Santika et al. 2019). However, South Africa's economy still heavily depends on coal, which supplies most of South Africa's electricity; this is contrary to the clean energy objective of Goal 7 and the goal of combating climate change (Goal 13). While climate change is receiving more attention in South Africa (as evidenced by stronger climate policies), the Integrated Resource Plan 2019 provides that coal power will still account for 59 per cent of South Africa's electricity supply by 2030, while wind and solar power will supply only 25 per cent. Although this increased share of renewable energy – which today is less than 2 per cent – is promising and can contribute to the achievement of Goals 7, 12 and 13, it remains insufficient. Importantly, the reliance on coal will bring adverse impacts on health (Goal 3), water (Goal 6), and life on land (Goal 15). Coal-based electricity generation also adds to climate change (Goal 13) and ocean acidification (Goal 14). In short, climate and energy-related governance in South Africa is not yet consistent with advancing planetary integrity, despite the Sustainable Development Goals. Although this must be seen in the context of the principle of common but differentiated responsibilities and respective capabilities that direct the climate policies and governance of many Global South countries, South Africa's progress on Goal 13, in particular, has been described as 'stagnating' (De la Mothe Karoubi et al. 2019). The country's Nationally Determined Contribution under the Paris Climate Agreement has also been rated as 'highly insufficient', as it would contribute to a global temperature increase of three to four degrees Celsius (Climate Action Tracker n.d.). In turn, the South African government highlights that climate change is complicating efforts to address the country's socio-economic challenges (Government of South Africa 2019; Mugambiwa and Tirivangasi 2017). This experience is in line with the broader observation that climate change may exacerbate socio-economic risks and vulnerabilities, particularly in developing countries (El Bilali et al. 2020; Islam and Khan 2018; Reyer et al. 2015).

Even though South Africa's 2012 National Development Plan preceded the 2030 Agenda for Sustainable Development, the government still reports that is has a '74 per cent convergence' with the Sustainable Development Goals (Government of South Africa 2019: 5). While the National Development Plan includes a chapter dedicated to environmental sustainability and refers to many ecological challenges, the focus of the National Development Plan is on socio-economic development. For example, the plan argues that to address poverty and inequality (the country's

main challenge), 'the economy must grow faster and in ways that benefit all South Africans' (National Planning Commission 2012: 24). This focus is reiterated in the latest 2019–24 Medium-Term Strategic Framework, a five-year plan through which the National Development Plan is implemented. The centrality of the National Development Plan in the South African policy context is clear. For instance, in assessing progress on the Sustainable Development Goals generally, the government uses the National Development Plan as a starting point (Government of South Africa 2019). Also, when considering progress on the environmental goals and climate change, the government refers to 'policies, strategies and programmes, with the National Development Plan as the overarching policy' (Statistics South Africa 2019: 155). While the government highlights policies towards the more environment-oriented Sustainable Development Goals, most of these predate the Sustainable Development Goals. Only four out of 12 energy- and climate-related policy documents published since 2016 mention the Sustainable Development Goals, with only a few containing explicit links to the goals (for example, the Draft Post-2015 National Energy Efficiency Strategy). Most of these policy documents, however, are meant to be in line with the National Development Plan. Thus, while they are relevant to the Sustainable Development Goals, the goals themselves have not shaped these policy measures. Furthermore, as suggested above, most economic growth measures are not necessarily consistent with safeguarding planetary integrity. Rather, the government has attempted to 'align the implementation of the Sustainable Development Goals with its domestic development agenda' (Haywood et al. 2019: 557).

Importantly, *there is not much evidence that the Sustainable Development Goals had any significant steering effects to advance planetary integrity in South Africa*, a country that still focuses on economic growth in order to achieve its main objective of addressing poverty and inequality. This appears to be consistent with experience elsewhere. Some research has shown, for example, that countries of varying income levels prioritize those Sustainable Development Goals that are consistent with their earlier development policies (Forestier and Kim 2020), and that the Sustainable Development Goals serve to 'legitimis[e] development goals and policies that have already been decided on' (Horn and Grugel 2018: 74). The general trend is that many countries prioritize the socio-economic goals over the environmental goals (Randers et al. 2019); as Forestier and Kim (2020: 1269) concluded, poverty eradication and economic growth were 'by far most widely prioritized' by developing and developed countries alike.

Experiences from Transnational Governance

While Chapter 3 of this book focused, among others, on the more general steering effects of the Sustainable Development Goals in relation to corporate actors, this

section specifically interrogates the environmental steering effects of the Sustainable Development Goals in the transnational corporate sector. Here we ask the question: Do the Sustainable Development Goals have any steering effects in relation to transnational corporate actors as far as the promotion of planetary integrity is concerned? Some studies find that some companies go beyond the growth-paradigm in their operations through innovative sustainability business models (Coscieme et al. 2019). Yet, many companies still seem to support the view that prioritizes 'productive functions of ecosystems over non-productive life supporting functions such as, in particular, biodiversity and climate stabilization' (De Schutter et al. 2019: 2). Accordingly, business leaders are encouraged to understand that 'the firm exists as part of, and because of, the socio-ecological system, and competitive advantage is found through the combination of internal competencies and from the full consideration of external drivers' (Sullivan, Thomas and Rosano 2018: 245).

Amidst such concerns, and as shown in Chapter 3 of this volume, the Sustainable Development Goals seem to have sparked a renewed push for corporate participation in the 2030 Agenda. Networks like Businesses for 2030 (United States Council for International Business 2020) and the World Business Council for Sustainable Development's Sustainable Development Goals Business Hub (World Business Council for Sustainable Development 2020), for instance, seek to showcase best practices and to support the integration of the Sustainable Development Goals into corporate practices. The United Nations Global Compact, with over 5,000 companies participating, provides tools and information to 'drive business awareness and action in support of the SDGs' (United Nations Global Compact 2020). Its Action Platforms on issues such as Sustainable Ocean Business and Decent Work in Global Supply Chains aim to foster collective action and underline how business activities need to operate within planetary boundaries.

Generally seen, research suggests that, on balance, integration of the Sustainable Development Goals into the business sector is growing (Dahlmann et al. 2020; Williams, Whiteman and Parker 2019). Since 2017, the share of companies publishing sustainability reports in line with Goal 12.6. has nearly doubled (United Nations 2020), and over 85 per cent of the world's 500 largest corporations include the Sustainable Development Goals in their annual reporting (United Nations Global Sustainability Index Institute 2019). Goal 13 was found to be the most frequently referenced goal (88 per cent), whereas Goal 15 (51 per cent) and Goal 14 (32 per cent) lag behind (World Business Council for Sustainable Development 2019), drawing a less optimistic picture of corporate engagement in pursuing planetary integrity. Scholars therefore stress the urgent need to transform traditional business models to better protect the global environment (Coscieme et al. 2019; De Schutter et al. 2019; Scheyvens, Banks and Hughes 2016; Shrivastava 2018).

Despite a growing integration of the Sustainable Development Goals into sustainability performance assessments of corporations, studies have criticized the insufficient contribution of the goals to 'helping companies diagnose the proximate and systemic causes of poor performance' (Fleming et al. 2017: 98). Of even greater concern is the widespread perception that businesses engage in so-called 'SDG washing', that is, using the Sustainable Development Goals to increase social legitimacy while concealing only modest sustainability efforts or malpractices (Dahlmann et al. 2020). Moreover, one survey indicates that international businesses rather engage with the Sustainable Development Goals internally (along their value chain), than externally (in collaboration with partners), and they are keener to address targets under the Sustainable Development Goals that mitigate negative externalities than those directed at generating positive externalities (van Zanten and van Tulder 2018). Specifically, high engagement was found with Sustainable Development Goals 5, 8, 12, 13, 16 and 17. Slight or no contributions, in turn, were found regarding Goals 11, 14 and 15. While this points to a worrying trend in corporations' inability to address social, environmental and economic targets collectively, it also suggests that corporations only marginally engage with those Sustainable Development Goals that relate more explicitly to planetary integrity (such as Goals 14 and 15). On a more positive note, some studies indicate that non-state transnational sustainability governance can also complement state efforts; but this is also dependent on an internationally agreed framework and regulation of, and cooperation with, state actors to increase accountability and long-term sustainability effects (Chan et al. 2019; Kumi, Yeboah and Kumi 2020). In that sense, the presence of Sustainable Development Goals as a common denominator or normative guiding framework might contribute to providing a shared vision for corporations, enabling a collective drive towards integrated sustainability governance that respects planetary integrity.

In sum, our analysis suggests that *the extent to which corporations rely on the Sustainable Development Goals to bolster their efforts in pursuit of planetary integrity remains a mixed bag*. Overall, corporations seem to be more receptive towards embracing the Sustainable Development Goals generally, which is positive. But the environment-focused Sustainable Development Goals apparently play only a peripheral role in steering corporations towards the integration of planetary integrity concerns into their activities. This is worrisome considering, on the one hand, that corporations remain major drivers of ecological destruction, and on the other hand, that corporations can also be hugely influential in initiating and driving transformative change in pursuit of planetary integrity (e.g., Wright and Nyberg 2015). More fully embracing the environmental dimensions of the Sustainable Development Goals could offer corporations a valuable opportunity to drive such positive transformations.

Conclusions and Future Directions

The Sustainable Development Goals are clear on the need to protect the planet. However, the extent to which the goals could mainstream planetary integrity into laws, policies and practices, and to steer towards planetary integrity, remain debatable. Some studies argue that the Sustainable Development Goals are incapable, or only marginally able, of doing so; yet other studies contend that the goals may still help mobilize resources and galvanize action in pursuit of planetary integrity.

Based on the findings from our analyses, the balance of evidence leans towards the critics, which leads us to conclude that the Sustainable Development Goals have not (yet) become a significant transformative governance force aimed at the advancement of planetary integrity through the process of goal-setting. Therefore, *on balance, we find that the steering effects of the Sustainable Development Goals with respect to planetary integrity are rather indirect and not too significant.* At best, the Sustainable Development Goals seem to have played a role in the orchestration of disparate environmental policies and regimes, but they surely did not manage to radically change the course of global governance to advance planetary integrity. While we observe some political and institutional changes as a result of the Sustainable Development Goals, and while the goals seem to have been cited as an inspiration or motivation by many actors, numerous doubts remain: about additionality (whether changes we observed would not have materialized without the goals); about ambition (whether the goals call for something drastically new and sufficiently ambitious); about coherence (whether the goals are themselves coherent enough to be able to foster a push towards planetary integrity); and about implementation (whether the means of implementation in the goals actually have the ability to improve their steering effects).

What explains this lack of impact remains unclear; and these are all issues that require further research. Is it the design of the Sustainable Development Goals themselves? In other words, had the Sustainable Development Goals been differently designed (or agreed through a different process), would we see a more (or even less) impactful set of global goals? Here we can think of design elements such as the number of goals, the structure of the goal framework (for example, the non-hierarchical structure), the coherence between the goals, the specificity or measurability of the targets, the language used in the text, and their reliance on neoliberal economic development-oriented sustainable development as their core orientation. Furthermore, one may argue that sustainability on a planetary scale is only achievable under an overarching Planetary Integrity Goal that recognizes the biophysical limits of the planet, as we have shown above. Some scholars have also raised questions about the relationship between the nature of the negotiations of the

goals, targets and indicators and their impact, especially on mainstreaming environmental concerns (Gasper, Shah and Tankha 2019).

Yet, no matter the design of Sustainable Development Goals, they are only non-binding and aspirational. Any form of 'governance through goals' is inherently not an effective alternative to 'governance through rules' (Kanie et al. 2019), although these approaches could, and arguably should, usefully reinforce one another. Furthermore, the Sustainable Development Goals are a mere reflection of the existing normative framework of international law (Kim 2016). Any 'governance through goals' approach under the Sustainable Development Goals banner must be sensitive to the problem of path-dependency: Do the goals have a realistic chance to be something truly transformative if they are merely a collection of earlier commitments, reflecting already agreed language? While we remain doubtful of the transformative potential of the goals, we are hopeful that global institutions such as the High-level Political Forum can help mainstream environmental concerns of a planetary nature at global, regional, national and transnational levels, if further strengthened with the necessary resources and authority (Abbott and Bernstein 2015; Stevens and Kanie 2016).

Clearly more research is needed to understand the impact of the Sustainable Development Goals on planetary integrity and the extent to which they, and their successors, could contribute to steering human development in a way that pursues and respects planetary integrity. For one, the lack of empirical data and the concomitant critical research gap that we have identified in this chapter dealing with the actual ability of the Sustainable Development Goals to steer in relation to planetary integrity must be addressed. This could be done, for example, by documenting conditions under which the Sustainable Development Goals are operating and comparing these to identify necessary or sufficient conditions for the Sustainable Development Goals to make a positive impact. Causality is always difficult to prove between the Sustainable Development Goals and any changes we see, especially in the environmental domain. To overcome this hurdle, we need both more in-depth case studies and large-*n* quantitative data analysis, as well as medium-*n* comparative analysis in between.

Finding out how, when and why the Sustainable Development Goals could put the planet at the centre of concern will be a key challenge in the years to come. This epistemic endeavour will be rewarding for generating specific and generalizable insights on how and why global goals work or do not work. Only an advanced understanding of the mechanisms through which the Sustainable Development Goals have impacts on planetary integrity will lead to policy-relevant knowledge that could help guide a post-2030 goal-setting process, and enable actors such as states, regional organizations, institutions and corporations to decide

on whether to adopt and to pursue in a dedicated manner post-2030 global goals, and if so, in what form and through what process.

Note

1 Search string ((TITLE ("sustainable development goals"))) OR TITLE ("sdgs") AND ((TITLE-ABS-KEY ("environment*"))) AND ((TITLE-ABS-KEY ("governance"))).

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