INTEGRATING GLOBAL SUSTAINABILITY GOVERNANCE

How the Sustainable Development Goals impact institutional and policy integration at the global level

Maya Bogers

Integrating global sustainability governance

How the Sustainable Development Goals impact institutional and policy integration at the global level

Maya Bogers

ISBN 978-94-6469-549-6
DOI 10.33540/1986

Lay-out and printing: ProefschriftMaken | www.proefschriftmaken.nl

Integrating global sustainability governance

How the Sustainable Development Goals impact institutional and policy integration at the global level

Mondiaal bestuur voor duurzaamheid integreren

Hoe de Duurzame Ontwikkelingsdoelen de integratie van instituties en beleid op wereldniveau beïnvloeden
(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor aan de
Universiteit Utrecht
op gezag van de
rector magnificus, prof. dr. H.R.B.M. Kummeling
ingevolge het besluit van het college voor promoties
in het openbaar te verdedigen op

vrijdag 24 november 2023 des middags te 2.15 uur

door

Maya Joanna Bogers

geboren op 11 mei 1991
te Utrecht

Promotor:

Prof. dr. F.H.B. Biermann

Copromotoren:

Dr. A. Kalfagianni

Dr. R.E. Kim

Beoordelingscommissie:

Prof. dr. P.P.J. Driessen

Prof. dr. N. Kolleck

Dr. A. Persson

Prof. dr. J.W. Schot

Prof. dr. D.P. van Vuuren

Dit proefschrift werd (mede) mogelijk gemaakt met financiële steun van de Europese Onderzoeksraad via het GLOBALGOALS project (beursnummer 788001).

This thesis was supported by the European Research Council through the Advanced Grant project GLOBALGOALS (grant number 788001).

Voor Joa en

Table of contents

Part IV: Conclusion

Part V: Supporting material

List of figures

List of tables

List of abbreviations

2030 Agenda	2030 Agenda for Sustainable Development
ADB	Asian Development Bank
CBD	Convention on Biological Diversity
COW	Correlates of War (dataset)
ECOSOC	United Nations Economic and Social Council
HLPF	High-Level Political Forum on Sustainable Development
IA	Internet archive
ILO	International Labour Organization
IO	International organization
MDG(s)	Millennium Development Goal(s)
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development
OWG	Open-ended working group
SDG(s)	Sustainable Development Goal(s)
UN	United Nations
UNGA	United Nations General Assembly
VNR	Voluntary National Review

Summaries

Summary in English

Can goals change the world? In September 2015, the United Nations (UN) unanimously adopted the 2030 Agenda for Sustainable Development (2030 Agenda). In this ambitious agenda for the world, the 193 member states to the UN pledge to "transform our world" in a mere 15 years. This transformation ought to be achieved by collectively striving towards 17 goals for the world: the Sustainable Development Goals (SDGs), which include "ending poverty", achieving gender equality and ensuring access to sustainable and affordable energy for all. The SDGs are currently the most extensive, most central and most ambitious agenda at the global level. Thus, with the adoption of the SDGs, 'global goals' have become one of the most important forms of global governance in the 21st century, alongside more traditional forms of global governance such as international treaties. Contrary to treaties, global goals are not legally binding; no state or (international) organization is obliged to achieve the goals. Nevertheless, expectations are high for such global goals to make the world more sustainable and fair. But are these expectations realistic? Can non-binding, highly ambitious, sometimes vaguely formulated global goals steer governance actors to work differently? For such a dominant governance mechanism, we know surprisingly little about how global goals function. Relatively little empirical research has been done to investigate how global goals work as a form of global governance. In this thesis, I contribute to this novel area of research, by investigating how international organizations have responded to the advent of the SDGs. International organizations are defined here as organizations and institutions operating at the international level that were established by multilateral treaty, that have at least three member states, and that operate with a certain degree of autonomy. My research focuses on how the SDGs have affected two longstanding concerns in global governance: institutional integration and policy integration at the international level.

Institutional and policy integration have become key concepts on the research and political agendas over the past decades. In this thesis, institutional integration refers to the structure of interactions between international organizations at the system level, whereas policy integration refers to the integration of policies, programs, and activities created by those international organizations. Both concepts are responses to address increasingly fragmented institutions and policies. This fragmentation is as a result of the expansion and diversification of international organizations. Over the past decades, many societal issues have become increasingly interconnected across geographical boundaries and across traditional policy domains. As an illustrative example, a drought in one country can, two years later, lead to a shortage of food in another country thousands of kilometers away. At the global level, many of such interconnections between environment, society and economy exist. Yet, as global issues have become more interconnected, the international organizations set up to deal with these issues have

not. Rather, to deal with the increasingly complex problems, international organizations have proliferated and specialized. As a by-product of expansion and specialization, the system of global governance has become fragmented: international organizations are disconnected from one another and often work in myopic ways, focusing only on their policy domain. At best, this has resulted in a myriad of fragmented policies that have failed to reinforce one another. At worst, this has resulted in counterproductive efforts, and problems being shifted from one policy domain to the next. To address these issues, many scholars and policymakers have called to increase institutional and policy integration.

The SDGs have given renewed impetus to these calls. From a political standpoint, the 2030 Agenda explicitly calls for an increased collaborative effort and for system-wide coordination, also at the global level. With the adoption of the goals, many policymakers urged to "break down siloes," that is to break down policy-domain based siloes of collaboration. Such siloes are especially strong at the global level. Besides calling for more collaboration, the SDGs explicitly focus on increasing policy integration, with a dedicated target and repeated calls for governance actors to come up with "integrated approaches." Taking the SDGs at face-value then, policymakers intended for the goals to increase both institutional and policy integration, also at the global level. But can they? Scholars have had mixed views.

Some scholars have argued that the SDGs are "muddle-headed" and "empty," and will likely not have any effects at all on governance actors due to their non-binding nature. Especially international organizations are often caught up in working towards their own mandate, while competing over scarce resources. Others, however, have been more optimistic, arguing that if the SDGs are adopted by many international organizations, they may serve as an overarching framework to work towards, which may ultimately increase cooperative efforts. Also, the focus of the SDGs on interconnectedness between the 17 goals gives governance actors a better framework to think along interlinkages than existed before, which may in turn trigger the development of more integrated policies. Finally, some scholars have warned that the SDGs may lead to more siloes and less integrated approaches. While the SDGs focus more on the interrelatedness between the goals than any previous global goals, this is mainly at the target level, and the 17 SDGs themselves ultimately remain policy domain specific. Moreover, the indicators associated with the SDGs are often also policy domain specific. Such sectoral goals with specific indicators have led to more narrow policy approaches in the past, and the same could happen with the SDGs.

With such differing views on what the effects of the SDGs *could* be, there is a strong need for empirical evidence. Do the SDGs have an impact on institutional and policy

integration at the global level? This is what I investigate in this thesis, which is guided by the following research question:

To what extent, and how, are the SDGs affecting institutional and policy integration at the international level?

I investigate this specifically across the 17 SDG issue areas and between the economic, social, and environmental dimension of sustainable development, among and within international organizations.

To answer the research question, I review existing literature and conduct four empirical studies to assess international organizations at the macro-, meso-, and micro-level. I used both qualitative and quantitative methods, though my focus is on the latter. More specifically, much of my research is based on empirical analyses of the websites of a large set of international organizations. I retrieved these websites from an internet archive using a custom web-crawler, and I analyze the hyperlinks and texts of these websites. As additional methods, I conduct a discourse analysis on documents and tweets, and rely on manual coding. I conducted the following four empirical studies. At the macro-level, I assess institutional integration in a network of 276 international organizations. The networks are constructed using hyperlinks between the international organizations' websites in each year from 2012 to 2019. I use network analysis to operationalize institutional integration and how it changed after the advent of the SDGs. At the meso-level, I assess the adoption of the SDGs and policy integration in a set of 159 international organizations. Policy integration is measured with automated text analysis on the texts of international organizations' websites, using two different indicators: one focuses on how many different SDG topics are discussed on a single webpage; the other on how often the concept of policy integration itself is referred to. Both reflect a general tendency of international organizations towards policy integration. Also, at the meso-level, I then assess for which of the 17 SDGs most policy integration takes place in a set of 154 international organizations. Here, I again assess how different SDG topics are discussed on a single webpage, but this time I look at which of the 17 SDG topics and which of the 136 SDG combinations occur most frequently on international organizations' websites. Finally, at the micro-level, I assess how the SDGs have steered the content of a novel global agenda at the Convention on Biological Diversity (CBD), the Kunming-Montreal global biodiversity framework. Here I focus on the role of the SDGs in facilitating policy and institutional integration. I conducted a discourse analysis on discussions around the new framework from the open-public sphere – Twitter – and the public-authoritative sphere – the working group formulating the draft framework.

My findings can be summarized in four key points.

(1) **While many international organizations use the SDGs on their websites, the SDGs are not yet a fully global framework.** Many international organizations have adopted the SDGs as a framework, at least as indicated by the use of the SDGs on their websites. This use is also increasing over time, showing at least a discursive impact of the SDGs on international organizations. The use of the SDGs is, however, unequal. The SDGs are mainly used by the larger international organizations and by UN entities. This is, for example, also the case at the Convention on Biological Diversity, where the SDGs are frequently mentioned with regards to the development of the new global biodiversity framework. However, many of the smaller, regional international organizations are not or barely using the SDGs. The SDGs are thus not (yet) a fully global framework.

(2) **Policy integration is increasing, but environmental topics are not much integrated with socio-economic topics.** I observe an overall increase in policy integration in the period studied. International organizations are increasingly discussing policy integration as a concept and are also increasingly discussing the policy domains of the SDGs together, demonstrating an increasing recognition of connectedness between the 17 different policy domains. Also, in the formulation of the new global biodiversity framework, the connectedness of biodiversity to other policy domains such as health, economic development, and gender is frequently recognized. Overall, the recognition of issue areas is especially increasing for the topics of "gender equality" (SDG 5), "responsible consumption and production" (SDG 12), and "climate action" (SDG 13). I also find that the environmental topics of "clean water" (SDG 6), "climate action" (SDG 13), "life under water" (SDG 14) and "life on land" (SDG 15) are more and more frequently discussed together with one another, pointing towards an increasing policy integration of environmental topics. This is, however, mostly the case for those international organizations that mainly work on the environment. For international organizations that mainly work on the social or economic policy domains, these environmental topics are not nearly as much integrated, but remain rather separate from the socio-economic topics.

(3) **While there is an overall increase in policy integration, the SDGs appear not to be an influencing factor in that increase**. The international organizations that use the SDGs more, do not subsequently show an increase in policy integration. Rather, it appears the other way around: those international organizations that already had high levels of policy integration, also use the SDGs more. In the development of the global biodiversity framework, I also find evidence to support this. While the SDGs were often mentioned in discussions around the new biodiversity framework as a tool to integrate biodiversity into other policy domains, this was mostly for domains in which the CBD

had previously also engaged. Thus, while the SDGs may be used to reframe efforts towards policy integration, they do not spur it. This is also evident from the SDG prioritization over time. While some SDGs have received more attention over time and some SDGs are increasingly integrated, as described above, these changes have not led to a change in prioritization of goals. I find that the economic topics such as "decent work and economic growth" (SDG 8), "industry, innovation and infrastructure" (SDG 9), and "responsible consumption and production" (SDG 12), and "partnerships for the goals" (SDG 17), are most prioritized in the entire period investigated. They are also always most frequently integrated with other goals, though especially so with one another. The environmental topics, especially "life below water" (SDG 14) and "life on land" (SDG 15), and the topic of "inequality" (SDG 10) are least mentioned and hardly integrated with any of the other goals, and this remains the case across all years investigated.

(4) **The SDGs facilitate institutional integration within policy domains.** While I find no substantial change in the overall cohesiveness and connectivity in the network of international organizations since the advent of the SDGs, the integration across policy domains and across the economic, social, and environmental dimension of sustainable development has decreased. Thus, contrary to political expectations of the SDGs to "break down silos," silos around the 17 issue areas of the SDGs and around the economic, social and environmental dimension of sustainability have strengthened overall. International organizations working mainly on the social policy domain operate most siloed, but organizations working on the economic and environmental policy domains also show increasing siloization. In the development of the new biodiversity framework, the SDGs are also mentioned as a relational tool to connect to other governance actors, which would signify an effect on institutional integration. Here, too, the connection is often to other governance actors working also in the policy domain of "life on land" (SDG 15), which would result in a stronger silo around that policy domain. The exception on this decrease in institutional integration is the UN system. Here, there are signs that the policy domain based siloes are lessening.

Integrating these results, I conclude that the SDGs have been somewhat successful as a 'shared language,' given their extensive use throughout the majority of international organizations. Yet, this impact has not resulted in the increases in institutional and policy integration that the SDGs called for. Rather, the SDGs have had little to no impact on policy integration, functioning possibly as a framework for international organizations to legitimize or work on policy integration, but not as a way to increase it. More worrying from a political standpoint, is the effect of the SDGs on institutional integration. Rather than being 'broken down,' policy-domain based siloes of cooperation among international organizations have only strengthened since the advent of the SDGs.

Reflecting on how global goals may function, I argue that while goals may galvanize action within the scope of a goal, galvanizing action across *all* goals is not achieved. While my research does not assess reasons as to why this may be the case, I pose several possible explanations based on literature. Possibly, the lack of action across all goals could be related to trade-offs existing between the different goals. Such trade-offs could lead governance actors to prioritize their 'own' goals. As actors prioritize their own goals, they also increasingly collaborate with other actors working on the same goal. Global goals may thus serve here as a relational tool, though mainly within the scope of a goal. This results in further siloes around each global goal, which in turn may hamper the interaction of actors across siloes that is needed to navigate trade-offs between the goals. Finally, it is mostly those international organizations that already had their interests aligned with the global goals, for example by being involved in the formulation of the goals, that subsequently also use the goals. For those not involved in their formulation, global goals are much lesser used.

With seven years left to achieve the SDGs, my research provides several steps that policymakers can take to increase the impact of the SDGs at the international level. First, to promote the use of the SDGs across all international organizations, to ensure that the SDGs go 'beyond the UN.' Here, there could be a role for the UN regional commissions. Second, to more strongly emphasize the interconnected nature of the SDGs and to increase collaboration across policy domains. Here, I propose the creation of SDG target co-custodians, small groups of international organizations who jointly are responsible for knowledge development on how to navigate trade-offs within an SDG target. Third, to give 'soft prioritization' to the SDGs that are left behind. Some SDGs are hardly prioritized or integrated with the other goals, especially the environmental goals and the goal on inequality. We should ensure that these goals do not fall further behind, by giving principled priority to those SDGs where targets are falling under a minimum progress threshold.

Finally, while the focus of policymakers should be on reaching the SDGs, it is also important to look ahead at a post-2030 agenda. For a post-2030 agenda, I urge global policymakers and nation states to commit to a more stringent approach towards the assessment of interlinkages between issue areas. While many countries and international organizations recognize the importance of interconnected issue areas, many fail to take action by assessing these links in their policy work. In addition, I encourage bolder choices in terms of prioritization of issues. The SDGs apply to all governance actors equally, leaving too much leeway for 'business as usual' to continue: Economic goals remain prioritized, and environmental goals are falling behind. I propose the setting of 'Global North goals' that are specifically aimed at high-income countries, to facilitate a rebalancing of the economic, social, and environmental dimension of sustainable development.

Samenvatting in het Nederlands

Kunnen doelen de wereld veranderen? In September 2015 werd de Agenda 2030 voor Duurzame Ontwikkeling unaniem vastgesteld door de Verenigde Naties (VN). In deze ambitieuze, internationale agenda zeiden de 193 lidstaten van de VN toe "onze wereld te transformeren" in slechts 15 jaar. Deze transformatie moet bereikt worden door gezamenlijk te streven naar 17 doelen voor de wereld: de Duurzame Ontwikkelingsdoelen (*Sustainable Development Goals,* ofwel SDGs). De SDGs bevatten doelen zoals "een einde aan armoede", "gendergelijkheid" en "duurzame en betaalbare energie voor iedereen". De SDGs vormen op dit moment de meest uitgebreide, meest centrale en meest ambitieuze agenda op mondiaal niveau. Met het vaststellen van de SDGs zijn 'werelddoelen' dus een belangrijke vorm van modern mondiaal bestuur geworden, naast meer traditionele vormen zoals internationale verdragen. In tegenstelling tot verdragen zijn werelddoelen niet juridisch bindend; geen enkel land of organisatie is verplicht om de doelen te bereiken. Desondanks zijn er hoge verwachtingen dat zulke werelddoelen helpen om de wereld duurzamer en eerlijker te maken. Zijn deze verwachtingen terecht? Kunnen vrijblijvende, enorm ambitieuze, en soms vaag geformuleerde werelddoelen ertoe leiden dat actoren in mondiaal bestuur anders gaan werken? Het belang wat wordt gegeven aan werelddoelen staat in schril contrast met onze geringe kennis van hun werking. Er is namelijk nog relatief weinig onderzoek gedaan de werking van doelen als vorm van mondiaal bestuur. In deze thesis draag ik bij aan dit recente onderzoeksveld door te bestuderen hoe internationale organisaties hebben gereageerd op de komst van de SDGs. Internationale organisaties worden hier gedefinieerd als organisaties en instituties op internationaal niveau die zijn opgericht op basis van een multilateraal verdrag, met minimaal drie lidstaten en een zekere mate van autonomie. In mijn thesis onderzoek ik of en hoe de SDGs impact hebben gehad op internationale organisaties met betrekking tot twee centrale concepten in mondiaal bestuur: institutionele integratie en beleidsintegratie.

De afgelopen decennia zijn institutionele integratie en beleidsintegratie beide belangrijke concepten geworden in wetenschappelijk onderzoek en in de beleidswereld. In deze thesis gaat institutionele integratie over interacties tussen internationale organisaties en welke overkoepelende structuur uit die interacties ontstaat. Beleidsintegratie gaat over de integratie van het beleid, de programma's en de activiteiten binnen individuele internationale organisaties. Het sturen op zowel institutionele integratie als beleidsintegratie zijn middelen om toenemende fragmentatie van instituties en beleid tegen te gaan. Deze fragmentatie komt voort uit toenemende uitbreiding en diversificatie van internationale organisaties. Gedurende de afgelopen decennia zijn maatschappelijke problemen in toenemende mate met elkaar verbonden geraakt. Maatschappelijke problemen hebben steeds vaker een invloed op elkaar over geografische afstand, over tijd

en over de grenzen van de traditionele beleidsdomeinen. Een illustratief voorbeeld: droogte in één land kan, twee jaar later, leiden tot een voedseltekort in een ander land duizenden kilometers verderop. Een milieuprobleem (watertekort) wordt zo ook een maatschappelijk probleem (voedseltekort). Op mondiaal niveau zijn er vele van zulke verbindingen tussen milieu, maatschappij en economie. Terwijl zulke mondiale problemen meer en meer verweven zijn geraakt, zijn de internationale organisaties waarvan verwacht wordt dat ze die problemen oplossen juist steeds verder van elkaar verwijderd geraakt. Om de steeds complexere problemen op te lossen, zijn er steeds meer en sterker gespecialiseerde internationale organisaties opgericht. Een neveneffect van die uitbreiding en diversificatie is de fragmentatie van het internationale systeem: internationale organisaties richten zich steeds meer op hun eigen beleidsdomein en verliezen daarbij de interactie met andere organisaties. In het beste geval heeft dit geleid tot het ontstaan van beleid en programma's die elkaar niet versterken, maar ook niet in de weg staan. In het ergste geval heeft dit geresulteerd in contraproductieve inspanningen en ervoor gezorgd dat problemen verschoven worden van het ene beleidsdomein naar het andere. Om fragmentatie te voorkomen hebben vele wetenschappers en beleidsmakers herhaaldelijk oproepen gedaan om de integratie van instituties en beleid op mondiaal niveau te verhogen.

Met het vaststellen van de SDGs is een hernieuwde impuls gegeven aan deze oproepen. De Agenda 2030 onderschrijft de noodzaak van meer samenwerking en coördinatie tussen organisaties, ook op internationaal niveau. Met het vaststellen van de SDGs riepen veel beleidsmakers ook op tot het "afbreken van silo's". Met silo's wordt hier verwezen naar samenwerkingen die vooral binnen het eigen beleidsdomein plaatsvinden, waardoor elk beleidsdomein een 'silo' van samenwerken vormt. Zulke siloisering is op internationaal niveau sterk aanwezig. De SDGs roepen ook expliciet op tot het verhogen van beleidsintegratie, met een subdoel dat hier speciaal over gaat. Bovendien wordt in de Agenda 2030 herhaaldelijk het belang van "geïntegreerde aanpakken" benadrukt. Vanuit politiek oogpunt kunnen de SDGs dus geïnterpreteerd worden als een poging om zowel institutionele integratie als beleidsintegratie te verhogen, ook op internationaal niveau. Maar kunnen de SDGs dat? De wetenschap heeft er gemengde opvattingen over.

Sommige wetenschappers omschrijven de SDGs als "warrig" en "leeg" en verwachten dan ook geen effect van de niet-juridisch bindende doelen. Internationale organisaties in het bijzonder zijn druk bezig met het uitoefenen van hun eigen mandaat en moeten daarbij onderling concurreren om beperkt beschikbare middelen. Internationale organisaties zouden daarom weinig motivatie hebben om ook nog te werken aan de SDGs. Maar er zijn ook positievere verwachtingen vanuit de wetenschap. Zo zouden de SDGs, als ze gebruikt worden door het merendeel van de internationale organisaties, kunnen dienen als een overkoepelend referentiekader en als 'gedeelde taal', waardoor

internationale organisaties gemakkelijker een gezamenlijke grond vinden voor samenwerkingen. Ook de expliciete focus van de SDGs op de onderlinge connecties tussen de 17 doelen zou kunnen helpen met het denken in systemen, wat uiteindelijk tot meer beleidsintegratie zou kunnen leiden. Tenslotte zijn er academici die wel een effect verwachten van de SDGs, maar niet het beoogde integratie effect: de SDGs zouden juist kunnen leiden tot nog sterkere silo's en minder beleidsintegratie. Hoewel de SDGs expliciet connecties tussen de doelen erkennen, is dit vooral op het niveau van de 169 subdoelen die voor de SDGs zijn geformuleerd. De 17 SDGs zelf zijn nog altijd verdeeld op basis van beleidsdomeinen. Bovendien zijn ook de meeste indicatoren voor de SDGs beleidsdomein-specifiek. In het verleden hebben domein-specifieke doelen met nauw gedefinieerde indicatoren tot sterkere silo's geleid en hetzelfde zou kunnen gebeuren met de SDGs.

Met zulke sterk uiteenlopende verwachtingen over de mogelijk impact van de SDGs is er een sterke behoefte aan empirisch onderzoek. Ik onderzoek in mijn thesis de volgende vraagstelling:

In hoeverre, en hoe, beïnvloeden de Duurzame Ontwikkelingsdoelen institutionele integratie en beleidsintegratie op internationaal niveau?

Ik onderzoek deze vraag specifiek voor de integratie van de 17 beleidsdomeinen van de SDGs en van de economische, sociale en milieu aspecten van duurzame ontwikkeling, zowel tussen als binnen internationale organisaties.

Om mijn onderzoeksvraag te beantwoorden haal ik inzichten uit bestaande literatuur en voer ik vier empirische studies uit om internationale organisaties op macro-, meso- en microniveau te bestuderen. Ik gebruik voornamelijk kwantitatieve, maar ook kwalitatieve, methoden. Een groot deel van mijn onderzoek is gebaseerd op de empirische analyse van websites van een grote set internationale organisaties. Ik heb deze websites uit een internetarchief gehaald middels een zelfgebouwde *web crawler* en vervolgens de hyperlinks en teksten van die websites geanalyseerd. Verder heb ik een discoursanalyse op documenten en *Tweets* uitgevoerd en is een groot deel van mijn analyse gebaseerd op handmatig coderen.

De focus van de vier empirische studies is als volgt: als eerste bestudeer ik institutionele integratie op macroniveau, middels een longitudinale netwerkanalyse op 276 internationale organisaties. De netwerken zijn gebaseerd op de hyperlinks tussen de websites van de organisaties, van 2012 tot 2019. Ik meet institutionele integratie met een set van zes verschillende netwerk-indicatoren en ik bekijk hoe deze netwerk-indicatoren zijn veranderd sinds de SDGs vastgesteld zijn in 2015. Als tweede bestudeer ik het

gebruik van de SDGs en beleidsintegratie op mesoniveau, middels een studie van websiteteksten van 159 internationale organisaties. Ik meet beleidsintegratie met twee indicatoren, allebei op basis van geautomatiseerde tekst analyse. De eerste indicator reflecteert hoe vaak de 17 verschillende SDG-onderwerpen worden besproken op webpagina's. De tweede indicator reflecteert hoe vaak beleidsintegratie zelf als concept wordt benoemd op webpagina's. Beide indicatoren reflecteren een algemene tendens van internationale organisaties richting beleidsintegratie. Als derde bestudeer ik, ook op mesoniveau, voor welke specifieke SDG-onderwerpen de meeste en minste beleidsintegratie plaatsvindt, in een set van 154 internationale organisaties. Ik meet opnieuw hoe vaak de 17 verschillende SDG onderwerpen worden besproken op webpagina's, maar dit keer kijk ik ook naar welke van de 17 SDG-onderwerpen, en welke van de 136 combinaties van SDG-onderwerpen, het vaakst worden genoemd op de websites van internationale organisaties. Als laatste bestudeer ik, op microniveau, hoe de SDGs van invloed zijn geweest in de formulering van nieuwe internationale afspraken, met als casus het nieuwe mondiale beleidskader voor biodiversiteit onder het Biodiversiteitsverdrag (*Convention on Biological Diversity,* CBD): de *Kunming-Montreal Biodiversity Framework* (hierna: het mondiale biodiversiteitskader). Ik onderzoek zowel institutionele integratie als beleidsintegratie, dit keer middels een discoursanalyse van discussies rondom de formulering van het mondiale biodiversiteitskader. Ik analyseer de publieke discussie middels Twitter data en de formele discussie middels documenten van de werkgroep die het concept-biodiversiteitskader heeft geformuleerd.

Mijn bevindingen kunnen samengevat worden in vier kernpunten:

(1) **Hoewel veel internationale organisaties de SDGs noemen op hun websites, zijn de SDGs nog geen wereldwijd verspreid referentiekader.** Veel internationale organisaties noemen de SDGs op hun websites. Het gebruik van de SDGs is wijdverspreid en neemt toe over tijd, wat wijst op in ieder geval een discursieve impact van de SDGs op internationale organisaties. Het blijkt dus dat de SDGs ten minste enigszins in gebruik zijn genomen als overkoepelend referentiekader door vele internationale organisaties. Echter, het gebruik van de SDGs is niet gelijk verdeeld. De SDGs worden voornamelijk gebruikt door grotere internationale organisaties en door de verschillende organisaties en programma's onder de VN. Dit is bijvoorbeeld ook het geval bij het Biodiversiteitsverdrag: de SDGs worden vaak genoemd in de formulering van het mondiale biodiversiteitskader. Maar voor kleinere en meer regionale internationale organisaties blijft het gebruik van de SDGs beperkt. De SDGs zijn dus (nog) niet een wereldwijd verspreid referentiekader.

(2) **Beleidsintegratie neemt toe, maar integratie tussen milieu-onderwerpen en meer socio-economische SDG onderwerpen blijft achter.** Beleidsintegratie neemt

toe in de tijdsperiode die ik heb bestudeerd (2013-2019). Internationale organisaties noemen beleidsintegratie steeds vaker op hun websites en noemen ook steeds vaker de 17 verschillende SDG onderwerpen samen op één webpagina, wat duidt op een toenemende herkenning van de verbondenheid van de 17 verschillende SDG beleidsdomeinen. Ook in de formulering van het mondiale biodiversiteitskader wordt de verbondenheid tussen biodiversiteit en andere beleidsdomeinen zoals gezondheid, economische ontwikkeling en gendergelijkheid vaak erkend. Over het algemeen is de erkenning van verbondenheid het sterkst toegenomen voor de beleidsdomeinen "gendergelijkheid" (SDG 5), "verantwoorde consumptie en productie" (SDG 12) en "klimaatactie" (SDG 13). Mijn observaties laten ook zien dat de beleidsdomeinen "schoon water" (SDG 6), "klimaatactie" (SDG 13), "leven in het water" (SDG 14) en "leven op het land" (SDG 15) steeds vaker samen genoemd worden, wat duidt op een toenemende beleidsintegratie van milieu-onderwerpen onderling. Echter, dit gaat vooral op voor de websites van internationale organisaties die voornamelijk werken aan deze verschillende milieuthema's. Bij internationale organisaties die voornamelijk aan economische en sociaal-maatschappelijke ontwikkeling werken blijft de aandacht voor milieu-onderwerpen achter. Hier worden milieu-onderwerpen nauwelijks geïntegreerd met de meer socio-economische SDG-onderwerpen.

(3) **Beleidsintegratie neemt toe, maar de SDGs lijken geen rol te spelen in deze toename.** Internationale organisaties die vaker aan de SDGs refereren, laten vervolgens geen toename in beleidsintegratie zien. Het verband lijkt juist andersom: organisaties die al een relatief grote mate van beleidsintegratie vertoonden, noemen vervolgens ook de SDGs vaker. Ook in de formulering van het mondiale biodiversiteitskader worden de SDGs wel vaak genoemd als hulpmiddel om de integratie van biodiversiteitsbeleid in andere beleidsdomeinen te versterken. Echter, dit is voornamelijk voor beleidsdomeinen waar onder het biodiversiteitsverdrag al eerder met programma's op beleidsintegratie was gestuurd. Dus de SDGs worden wel gebruikt om bestaande initiatieven voor beleidsintegratie te illustreren of in te kaderen, maar zetten zelf niet aan tot beleidsintegratie waar die nog niet eerder plaatsvond. Dit kan ook worden geobserveerd uit de prioritering en integratie van diverse SDG-onderwerpen door de tijd heen. In de geobserveerde tijdsperiode worden sommige SDGs steeds vaker genoemd dan anderen op de websites van internationale organisaties. Ook worden sommige SDGs steeds vaker samen genoemd, zoals in de vorige paragraaf beschreven. Echter, deze veranderingen leiden niet tot een verschuiving in de algehele prioritering van de SDG-onderwerpen. Economische onderwerpen zoals "eerlijk werk en economische groei" (SDG 8), "industrie, innovatie en infrastructuur" (SDG 9) en "verantwoorde consumptie en productie" (SDG 12) en het onderwerp "partnerschap voor de doelen" (SDG 17) worden steevast het meest geprioriteerd. Deze onderwerpen worden ook het vaakst samen genoemd, duidend op beleidsintegratie vooral voor de economische onderwerpen. De

milieuonderwerpen "leven in het water" (SDG 14) en "leven op het land" (SDG 15) en het sociaal-maatschappelijk onderwerp "ongelijkheid verminderen" (SDG 10) worden het minst genoemd en worden ook nauwelijks in verband gebracht met de andere doelen. Ook dit blijft over alle onderzochte jaren het geval.

(4) **De SDGs leiden tot meer institutionele integratie binnen beleidsdomeinen**. Hoewel ik geen substantiële verandering observeer in algehele connectiviteit en cohesie in het netwerk van internationale organisaties, is de institutionele integratie tussen internationale organisaties die werken in verschillende beleidsdomeinen afgenomen sinds de SDGs er zijn. Dus, in tegenstelling tot de intentie om silo's af te breken, lijken de SDGs juist silo's rondom de 17 beleidsdomeinen van de SDGs en rondom economische, sociale en milieuzaken te versterken. Internationale organisaties die voornamelijk aan sociale aspecten werken, opereren het sterkst in een silo, maar ook bij organisaties die voornamelijk aan economische en milieu aspecten werken observeer ik een versterking van het werken in silo's. Ook in de ontwikkeling van het mondiale biodiversiteitskader worden de SDGs veelvuldig genoemd als een handig referentiekader om gemakkelijker met andere actoren samen te werken. Hier gaat het vaak om samenwerking met andere actoren binnen het beleidsdomein van "leven op het land" (SDG 15), wat inderdaad op macroniveau zou leiden tot een sterkere silo rondom dat beleidsdomein. Een uitzondering op het silo-matig werken is het VN-systeem. Voor de organisaties en programma's onder de zijn er wel tekenen dat silo's rondom de 17 beleidsdomeinen van de SDGs afnemen. Hier is dus wel sprake van een toename in institutionele integratie.

Uit de combinatie van resultaten concludeer ik dat de SDGs enigszins succesvol zijn als een gedeelde taal, gezien het feit dat de SDGs in grote mate gebruikt worden door een meerderheid van de internationale organisaties. Tegelijkertijd heeft het gebruiken van deze gedeelde taal niet geleid tot een toename in institutionele integratie of beleidsintegratie waar de SDGs toe oproepen. De SDGs hebben geen of nauwelijks invloed gehad op beleidsintegratie. Hoewel ze mogelijk functioneren als een manier om bestaand werk aan beleidsintegratie te legitimeren, functioneren de SDGs zelf niet als katalysator van beleidsintegratie. Politiek gezien is dit niet per se zorgelijk, gezien beleidsintegratie als geheel wel toeneemt. Wat wel zorgelijk is vanuit politiek oogpunt, is het effect van de SDGs op institutionele integratie. In tegenstelling tot de politieke verwachting, worden silo's in mondiaal bestuur niet afgebroken onder invloed van de SDGs, ze worden er juist door versterkt. door de SDGs.

Werelddoelen zelf lijken dus te functioneren als aanjagers van actie, maar alleen binnen de bandbreedte van afzonderlijke doelen. Hoewel mijn onderzoek niet ingaat op de redenen hiervoor, bied ik enkele mogelijke verklaringen op basis van literatuur. Zo zouden de negatieve wisselwerking tussen sommige doelen kunnen leiden tot actie

binnen afzonderlijke doelen. Soms heeft het bereiken van één werelddoel een negatieve impact op het bereiken van een ander werelddoel. In zo'n geval zouden actoren hun 'eigen' werelddoel prioriteren en de andere werelddoelen negeren. Als actoren 'hun' werelddoel prioriteit geven en daar actie op ondernemen, is het waarschijnlijk dat ze ook meer samenwerken met actoren die aan hetzelfde werelddoel werken. Op die manier functioneren werelddoelen als referentiekader om meer samen te werken, maar alleen binnen de bandbreedte van een enkel doel. Op macroniveau resulteert dit in het versterken van silo's, wat de kans op interactie tussen actoren uit verschillende silo's doet afnemen. Terwijl dit juist de nodige interacties zijn om compromissen te sluiten tussen botsende werelddoelen. Ook lijken werelddoelen wel te functioneren als referentiekader, maar voornamelijk voor actoren voor wie de doelen passen bij hun bestaande werk en belangen. Dit zijn dan voornamelijk actoren die ook een sterke invloed hebben gehad op de formulering van de doelen.

Met nog zeven jaar om de SDGs te bereiken biedt mijn onderzoek drie aanknopingspunten voor beleidsmakers om de impact van de SDGs op internationaal niveau te vergroten. Ten eerste kan het gebruik van de SDGs als referentiekader buiten de grotere en VN organisaties bevorderd worden. De regionale VN-commissies kunnen hier een rol in spelen. Ten tweede moet de onderlinge verbondenheid tussen de 17 SDGs sterker benadrukt worden en moet er meer gestuurd worden op samenwerkingen die beleidsdomeinen overbruggen. Hier stel ik voor om 'SDG subdoel *co-custodians*' in te stellen: kleine groepjes internationale organisaties die gezamenlijk verantwoordelijk zijn voor de ontwikkeling van kennis over hoe compromissen gesloten kunnen worden tussen de verschillende SDGs op subdoel niveau. Ten derde is het belangrijk om de SDGs die achterblijven te prioriteren. Enkele SDG-onderwerpen worden op internationaal niveau nauwelijks geprioriteerd of geïntegreerd met de andere SDG-onderwerpen. Dit zijn voornamelijk de milieu SDGs en de SDG over ongelijkheid. Om te zorgen dat deze onderwerpen niet achterblijven, stel ik voor om drempelwaardes in te stellen voor minimale vooruitgang. Als deze drempelwaarde niet wordt bereikt krijgt actie op de desbetreffende SDG altijd prioriteit tot de drempelwaarde is bereikt.

Hoewel de focus van beleidsmakers moet liggen op het bereiken van de SDGs in 2030 is het ook belangrijk om vooruit te kijken naar een post-2030 agenda. Hiervoor spoor ik internationale beleidsmakers aan om zich op twee vlakken te committeren. Ten eerste is het belangrijk om serieus werk te maken van het analyseren van de wisselwerkingen tussen beleidsdomeinen. Hoewel veel landen en internationale organisaties het belang van de wisselwerkingen tussen beleidsdomeinen erkennen, zijn er maar weinig die systematische analyses uitvoeren van zulke wisselwerkingen ten behoeve van hun eigen beleidsprogramma's. Hier is dus meer actie vereist. Ten tweede is het belangrijk dat er een heldere prioritering komt in werelddoelen. De SDGs zijn universeel van toepassing:

ze gelden voor alle landen en actoren. In de praktijk heeft dit echter teveel speelruimte gegeven om door te gaan op gevestigde koers: de economische doelen krijgen nog altijd prioriteit over het milieu. Hier stel ik voor dat we '*global north* doelen' formuleren die zich specifiek richten op hoge-inkomenslanden, om de balans tussen economische, sociale en milieu aspecten in duurzame ontwikkeling te herstellen.

Part I

Introduction

The integration of global governance and the Sustainable Development Goals

1.1. Introduction

In September 2015, 193 world leaders came together at the United Nations (UN) General Assembly and unanimously adopted the most ambitious and broad global development agenda so far: the 2030 Agenda for Sustainable Development (2030 Agenda). This Agenda aims to do no less than "transform our world" (UN, 2015), by achieving the 17 Sustainable Development Goals (SDGs) that are at the core of the agenda. The SDGs are all highly ambitious, ranging from eradicating hunger and poverty, to achieving gender equality and protecting life on land. The adoption of the 2030 Agenda with its 17 SDGs was heralded as "a defining moment in human history" (Secretary General of the United Nations Ban Ki-Moon, 2015), "an important sign of hope" (Pope Francis, 2015) and "the most important thing the United Nations has done" (Bill Gates in Quartz magazine, 2015).

Yet despite effusive praise at their adoption, it remains unclear whether the SDGs can indeed transform our world. Empirically, we know little about how global goals, such as the SDGs, function. Can global goals be effective as a global governance mechanism? If so, how? What are the intended and unintended effects of goals on governance actors? Such fundamental questions remain unanswered. This lack of answers is surprising, as the SDGs are certainly not the first set of goals that have been established at the global level. The UN has a long history of setting global goals, with the Millennium Development Goals (MDGs) as most recent example (Jolly et al., 2009). The SDGs are, however, more ambitious and have a broader scope than any global goals ever set before (F. Biermann et al., 2017). With the SDGs, governing through goals has thus become a more dominant – or even the most dominant – mechanism of global governance. As the world continues to fall behind on many of the issue areas embedded in the SDGs, including fighting climate change (UNFCCC, 2021), eradicating hunger (WFP et al., 2022), and protecting the environment (IPBES, 2019), it is thus of the utmost importance that we gain a better understanding of whether and how governing through global goals works.

What can we expect from the SDGs? Amongst others, policymakers designed the SDGs to have three specific effects that I investigate in this thesis. First, the SDGs are intended to increase attention for the 17 issues embedded in the goals. The idea is that the SDGs serve as an overarching 'to-do list' for all actors involved in the design and implementation of new policies and programs, at all levels of governance. Second, the SDGs are expected to bring together the many and diverse actors in global sustainable development. With the proliferation and specialization of governance actors over the past decades, it has become increasingly difficult to coordinate action across all these actors, especially so between actors working in different policy domains. This lack

of institutional integration in global governance is a long-lamented concern of both policymakers and academics. The hope was that the SDGs could improve institutional integration by serving as an 'overarching agenda' for all. Third, the SDGs are designed as a set of interrelated goals. The 2030 Agenda emphasizes the interconnected nature of the 17 SDGs and calls upon actors to devise "integrated solutions" (UN, 2015: para. 13), rather than making domain-specific policy. This is more or less a direct response to the increasing calls for policy integration from both policymakers and academics over the past decades.

With this thesis, I make my contribution in unravelling how governance through global goals functions. I take the SDGs as an empirical case and focus on the effects of the SDGs on one of the key actor groups in global governance: international organizations. By effects of the SDGs, I refer here not to whether there is progress on achieving the goals themselves. Rather, I am interested in the political impact of the SDGs on international organizations. Specifically, I investigate whether international organizations have adopted the SDGs; whether the SDGs have so far 'brought together' international organizations; and to what extent the SDGs have led to more integration in the policies and programs of international organizations. Conceptually, my thesis thus revolves around the following key concepts.

First, institutional and policy integration. Institutional integration refers to the overall shape and structure of the increasingly expansive and complex system of global governance, in which inter-organizational interaction has become a major challenge (F. Biermann, Pattberg, et al., 2009). Policy integration revolves around a governance actor integrating aims from one or more other policy domains into its domain-specific policies and is a response to the ongoing challenge of creating policies in different policy domains that do not negate one another (Geerlings & Stead, 2003; Tosun & Lang, 2017). The two concepts are thus different, but they are related. Scholars generally expect an institutionally integrated governance system to produce more integrated policies, and vice-versa (Nilsson et al., 2022; Trein & Maggetti, 2020). Increasing both institutional and policy integration have been key challenges in global governance over the past years (Tosun & Lang, 2017; Zelli & van Asselt, 2013). I further delve into the concepts of institutional and policy integration in section 1.2.

Second, international organizations. As key actors in global governance, the work of international organizations is essential in the global effort towards sustainable development and thus also in achieving the SDGs (Chidozie & Aje, 2017; Cormier, 2018; Sachs, 2012; Stiglitz, 2006). Compared to other levels of governance, institutional and policy integration are especially difficult challenges at the level of international organizations, as there is no overarching authority at the global level to guide the processes of

integration (Beckfield, 2008; Greenhill & Lupu, 2017; Nilsson et al., 2009). At the global level, there is thus much to gain from an 'overarching agenda' such as the SDGs. I further discuss international organizations and their role in sustainable development in section 1.3.

Third, the SDGs. As described, UN member states adopted this set of global goals in 2015 as part of the 2030 Agenda for Sustainable Development (UN, 2015). The SDGs consist of 17 goals, with 169 underlying targets, which outline the direction of global sustainable development until 2030. The SDGs have distinct characteristics that make them a unique, and to some extent novel, governance mechanism. I further outline these characteristics, and how the SDGs may affect institutional and policy integration, in section 1.4. and in chapter 2.

In my research, I bring these concepts together to investigate how institutional and policy integration among and within international organizations has changed since the advent of the SDGs. The concepts and relations I investigate are visualized in figure 1.1.

Figure 1.1. Visualization of thesis research aims

The light grey boxes represent multiple international organizations. The dark grey boxes represent the processes taking place within and between international organizations. SDG use and policy integration take place *within* international organizations, and structural and functional institutional integration take place *between* international organizations. The arrows indicate the possible effects of the SDGs that are theobject of studyin this thesis. While institutional integration and policy integration may also influence each other(see section 1.2), I do not assess that in this thesis.

In the remainder of this chapter, I dive deeper into the concepts of institutional and policy integration (see section 1.2), international organizations (see section 1.3), and the SDGs (see section 1.4), to set out how they may be related. In the final sections of this chapter, I give an overview of the thesis aims and research questions, and how the rest of this thesis is structured.

1.2. The call for integration in global governance

Over the past decades, economic, social, and environmental issues have become increasingly global. For example, increasing international trade and capital flows have affected poverty in local communities (Harrison & McMillan, 2007). To deal with these boundary-crossing issues, states have established a myriad of international organizations and institutions to facilitate international cooperation and decision-making (Eilstrup-Sangiovanni, 2020). Yet issues have not only become boundary-spanning in the geographical sense. They are also spanning the boundaries of traditional policy domains: issues are increasingly interconnected. Pertinent examples include climate change and poverty alleviation (Davidson et al., 2003); food security and biodiversity conservation (Fischer et al., 2017); and water security and energy access (Hamiche et al., 2016). While global issues have become more connected, the institutions and policies established to deal with them have not. On the contrary, specialization and competition for scarce resources has led governance actors to increasingly work on domain-specific activities to serve their domain-specific goals, often without considering the effects their activities may have on other domains (Anthes, 2019; Knill et al., 2020). There is also little interaction between actors working on different issues, and thus little opportunity for inter-organizational information exchange or the coordination of activities (R. Biermann, 2008; Shawoo et al., 2022). This is especially problematic for issues that span multiple policy domains, which – as described – is the case for many global challenges today (Candel & Biesbroek, 2016; Jochim & May, 2010). As a result, activities implemented in one domain may thwart the goals of activities implemented in other domains, resulting in the creation of inefficient or even conflicting laws, norms, policies, and programs (Blattert et al., 2022; Held & Young, 2013; Jabbour et al., 2012; Köhler, 2011). In other words, the proliferation and specialization of governance actors has led to an expansive and diverse, but also 'institutionally fragmented' system of global governance, resulting also in fragmented policies (Abbott et al., 2016; Asselt, 2014; Beckfield, 2010; F. Biermann, Pattberg, et al., 2009; Greenhill & Lupu, 2017; Zelli & van Asselt, 2013). As the problems of fragmented institutions became apparent, both policymakers and academics have called to increase institutional and policy integration. I now delve further into each of these concepts.

1.2.1. Institutional integration

While institutional integration is frequently called for, there is no consensus definition, and conceptualizations differ between literature streams and studies (Stevens, 2017). I consider institutional integration to say something about the overall structure and shape of the system of international organizations and institutions (Beckfield, 2008; R. E. Kim, 2020). Institutional integration refers to how "dense," "cohesive," or "well-connected" a system is (R. E. Kim, 2020; Perez & Stegmann, 2018; Widerberg, 2016), whereby connections are based on some form of institutional interaction (R. Biermann & Koops, 2017; Böhmelt & Spilker, 2016).

Institutional integration is thus a characteristic of governance systems, with three key considerations to its conceptualization. First, institutional integration is in essence about interaction, or a lack thereof, between international institutions in a broader governance system. The core idea here is that governance actors interact with one another and the more they do so, the more they align their activities, resulting in less conflicting policies (R. Biermann & Koops, 2017). Second, institutional integration is a scale. Governance systems can be more or less integrated, and over time integration can increase or decrease. A governance system thus has a certain level of integration, but a completely integrated or completely disintegrated governance system exists only in theory. Following from this is the third point: integration is normatively value-free. While scholars generally consider 'too little' institutional integration to have negative impacts on governance outcomes (F. Biermann et al., 2020), there is no agreement on what 'too little' is. Some scholars have also argued that a certain lack of integration may be beneficial (F. Biermann, Pattberg, et al., 2009). Yet, how to identify exactly which level of integration is beneficial and which level is harmful remains difficult to ascertain (F. Biermann, Pattberg, et al., 2009; R. E. Kim, 2020).

I use the term institutional integration here as the direct opposite of the term institutional *fragmentation*. Institutional fragmentation is also commonly used in literature, and has been defined as "a patchwork of international institutions that are different in their character […], their constituencies […], their spatial scope […], and their subject matter […]" (F. Biermann, Pattberg, et al., 2009), and "the extent to which the world consists of distinct clusters [of intergovernmental organization-based] cooperation." (Greenhill & Lupu, 2017). Both terms are thus about a level of connectedness or cohesiveness in a governance system, and scholars commonly consider integration and fragmentation as each other's opposites (Ansong et al., 2021; Beckfield, 2008; F. Biermann, Pattberg, et al., 2009; R. E. Kim, 2020; Visseren-Hamakers, 2015). When viewing institutional integration as a scale on an overarching system, the difference between the terms thus becomes semantic. A system that is *more* integrated, is *less* fragmented, and vice-versa. The process of becoming more integrated is referred to as integrating, whereas the process

of becoming less integrated – or more fragmented – is then referred to as fragmenting (Beckfield, 2008; F. Biermann, Pattberg, et al., 2009; Eilstrup-Sangiovanni & Westerwinter, 2021; Zürn & Faude, 2013).

I differentiate two forms of institutional integration: structural and functional. *Structural integration* originally concerned the quantity of interactions between international institutions (F. Biermann, Pattberg, et al., 2009). With the advent of more quantitative research methods, it became a broader term that assesses not only the quantity of interactions, but also how these interactions together shape the overall institutional structure of governance (sub)systems, also referred to as governance architectures. For example, a governance system can be densely or sparsely connected; can have a single central institution or multiple equally central institutions; can contain multiple clusters or consist of one single connected cluster (Greenhill & Lupu, 2017; R. E. Kim, 2020). The literature on structural integration relates closely to that on polycentricity and complexity, both of which are also concerned with structural features of governance systems (Duit & Galaz, 2008; Jordan et al., 2015; Ostrom, 2010; Zelli & van Asselt, 2013). If a governance system becomes more integrated, it will have more connections between institutions, less disconnected clusters, and a stronger central actor. A visual representation of institutional integration is given in figure 1.2.

While structural integration says something about the structural features of a governance system as a whole, it does not say anything about which *types* of actors or institutions are connected and disconnected in the system. This is where *functional integration* – sometimes also referred to as *horizontal integration* – comes in (Zelli et al., 2012). Functional integration is considered here the opposite of functional fragmentation, which can be defined as "the segmentation of governance systems along sectoral lines" (Young, 2011b). Institutional integration then, is defined as a system where there is no – or little – segmentation along sectoral lines. Institutional integration is considered here as a specific form of structural integration: if structural integration occurs especially between actors and institutions working on different policy domains, then the system also becomes more functionally *integrated*. Conversely, a system may become more structurally integrated, but if the integration occurs between actors and institutions working on the same domains, this results in a less functionally integrated system, as visualized in figure 1.2 (Zelli et al., 2012; Zürn & Faude, 2013).

In the case of a functionally integrated system, connections occur both *within* and *between* policy domains. If a system is less functionally integrated, connections are focused within policy domains, resulting in the existence of domain-based clusters in the system. In the context of the UN and global politics more broadly, this is commonly

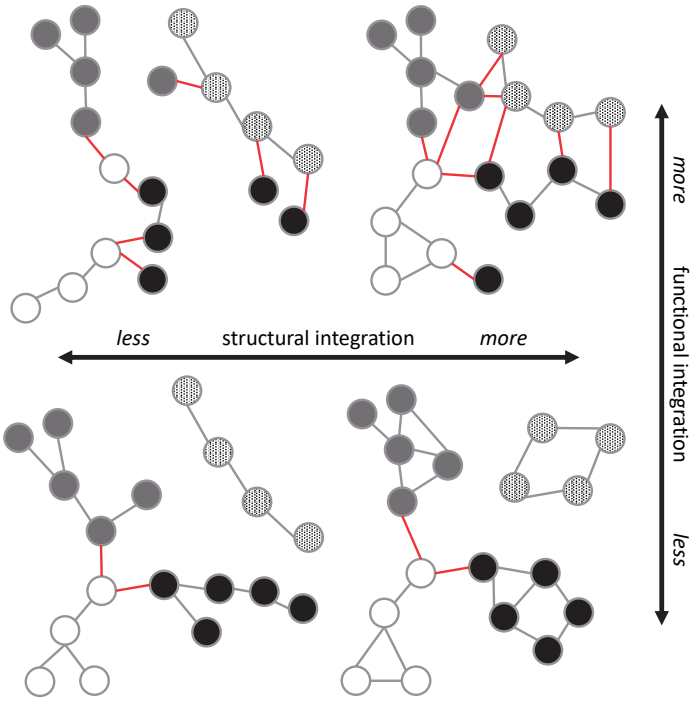


Figure 1.2. Structural and functional fragmentation in governance systems
Visual representation of structural and functional integration in governance systems. The nodes represent international institutions, working on four different policy domains (white, light grey, dark grey, black). Red ties indicate connections between institutions working on different policy domains and grey ties indicate connections between institutions working on the same policy domain. On the left, both the top and bottom systems are relatively equal in structural integration: both have two components and an approximate equal number of ties, and there is no clear central actor. Yet the top system is more functionally integrated, as there are relatively more cross-domain ties. A similar comparison can be made for the systems on the right.

referred to as actors and institutions 'operating in siloes' (Anthes, 2019; B. Mitchell, 2004; Zaccaria, 2021).

1.2.2. Policy integration

Whereas institutional integration focuses on the level of governance systems, *policy integration* focuses on the level of policies. There has been a push for policy integration from the 1990s onwards, including from international organizations, to prevent conflicting policies resulting from increased organizational specialization. Policy integration can be defined as integrating aims or concerns from one policy domain into another within one organization (Geerlings & Stead, 2003; Tosun & Lang, 2017). The core idea is that by taking into account other policy domains, policies can be formulated and implemented in such a way that negative impacts on those other domains are prevented or ameliorated. At the international level, policy integration has mainly been studied

in the context of integrating environmental concerns into non-environmental domains (F. Biermann, Davies, et al., 2009; Jordan & Lenschow, 2010; Karlsson-Vinkhuyzen et al., 2018; Tosun & Peters, 2018).

Within the policy integration literature, scholars often use the concepts of policy integration and policy *coordination* interchangeably. However, here I differentiate the two terms as related but slightly different processes. Whereas policy coordination is about two or more actors interacting in an attempt to align their policies as to prevent conflicts, policy integration is about a single actor taking into account multiple policy domains or concerns in its own policies, programs or activities (Trein et al., 2019; Trein & Maggetti, 2020). This does not imply that the two processes are mutually exclusive. On the contrary, policy integration may lead to policy coordination and vice-versa (Nilsson et al., 2022; Trein & Maggetti, 2020).

Policy coordination is a form of institutional interaction, often taking place across policy domains (R. Biermann, 2008; R. Biermann & Koops, 2017). Conceptually, it is thus similar to functional institutional integration at the system level: both concepts relate to the cross-sectoral dimension of interacting governance actors. However, institutional integration also encompasses other forms of interaction than policy coordination, and policy coordination is commonly studied at the national level, whereas functional institutional integration is commonly studied at the international level (R. E. Kim, 2020; Stevens, 2017; Trein et al., 2019). While there are few empirical studies on this topic, there are also indications that a lack of integration in the overarching governance system hampers efforts towards policy coordination and integration (Nilsson et al., 2022; Scobie, 2016; Shawoo et al., 2022).

Institutional and policy integration are relevant at all levels of governance. Though, given the lack of overarching authority, they are especially relevant at the global level (Beckfield, 2008; Greenhill & Lupu, 2017; Nilsson et al., 2009). In the next section, I discuss the role of international organizations in global sustainable development, and I review literature on institutional and policy integration at the level of international organizations.

1.3. International organizations

International organizations are key actors in global governance and in solving the global issues encompassed in the SDGs (Chidozie & Aje, 2017; Cormier, 2018; Sachs, 2012; Stiglitz, 2006). For example, international organizations have been tasked with promoting economic development, containing violence, defending human rights, and addressing

climate change. More and more international organizations have been established over the past decades to perform a variety of tasks. Their legitimacy, experience and authority has made them operate and act as increasingly autonomous organizations (Abbott et al., 2015; Barnett & Finnemore, 1999). International organizations influence a range of important global governance functions such as inter-state negotiations, global agenda-setting and transnational diffusion of policies (Busch & Jörgens, 2005), knowledge production and dissemination (P. M. Haas & Haas, 1995; Zapp, 2018), negotiation and diffusion of global norms (Checkel, 1999; Finnemore, 1993; Ingram & Torfason, 2010), policy making and implementation (Eckhard & Ege, 2016; Reinalda & Verbeek, 2004), and shaping public opinion on international issues (Greenhill, 2020).

I thus consider international organizations not only as collections of member states, but also as "actors in their own right" (Jinnah, 2014: 21). International organizations are thus defined here in a broad sense: all organizations and institutions operating at the international level that were established by multilateral treaty, have at least three states as members, and that operate with a certain degree of autonomy. The latter means here that they hold meetings at least every four years, have a permanent secretariat and are professionally staffed or have some organizational capacity (Volgy et al., 2008). This definition also includes the institutional arrangements around multilateral agreements, given that such institutions also operate at the international level, and are often comprised of permanent secretariats and hold a regular Conference of the Parties (COP), with extensive decision- and law-making powers (Brunnée, 2002; Churchill & Ulfstein, 2000).

International organizations do not operate in isolation. Much of their political influence is exerted through their relations with other actors, including states, non-governmental organizations, and (sub)national actors (R. Biermann & Koops, 2017; de Wit et al., 2020; Jinnah, 2011; Jorgens et al., 2017; Kolleck et al., 2017). Importantly, international organizations also interact with each other, to exchange information and knowledge, engage in policy coordination or make joint decisions (R. Biermann, 2008; P. M. Haas et al., 2013). Altogether these interactions build up to extensive governance networks of international organizations (R. Biermann, 2017; Eilstrup-Sangiovanni, 2016). These, sometimes informal, network interactions facilitate information sharing, coordination and the convergence of practices throughout the community of international organizations (Lipson, 2017; Sommerer & Tallberg, 2019). Such functions are essential to ensure the implementation of solutions to interconnected global issues, including those embedded in the SDGs (Abbott & Bernstein, 2015; F. Biermann & Kanie, 2017; Donoghue & Khan, 2019; Forestier & Kim, 2020; Gupta & Nilsson, 2017; Stafford-Smith et al., 2017).

The network of international organizations thus fulfils essential functions. Yet it is also hampered by fragmentation. Institutional fragmentation, both structural and functional, is ubiquitous and strong at the international level (Beckfield, 2008; Greenhill & Lupu, 2017; Nilsson et al., 2009). The proliferation and specialization of international organizations has led them to compete for scarce resources, often prioritizing their own mandates (Abbott et al., 2016; Barnett & Finnemore, 1999; Johnson, 2016; Zelli & van Asselt, 2013). This has led to calls for better institutional integration among international organizations (Nilsson, 2004; Nilsson & Nilsson, 2005; Perez, 2005). Here, the SDGs may play a role. The SDGs, too, call for increased collaboration, also at the international level. If international organizations respond to this call, the SDGs may very well affect both structural and functional integration among international organizations. I further expand on how the SDGs may affect institutional integration in sections 1.4.1. and 1.4.2.

As for policy integration, many scholars have argued that policy integration at the international level is essential for global sustainable development (Breuer, Janetschek, et al., 2019; Donoghue & Khan, 2019; Gupta & Nilsson, 2017; Nilsson et al., 2022; Stafford-Smith et al., 2017; Weitz et al., 2018). Indeed, international organizations have long linked the different global issues they deal with, and increasingly account for the integration of different issue areas in their policies and programs (Jinnah, 2011; Orsini, 2013; Orsini et al., 2019; Tosun & Peters, 2018; Venghaus & Hake, 2018). Yet, there is still room for improvement. Especially for international organizations, the call to 'break down the silos' of policy-domain based working has been strong (Niestroy & Meuleman, 2016). Again, the SDGs may play a role here. It is likely that many of the issue areas encompassed in the SDGs were and are being connected by international organizations, also before the advent of the SDGs. Yet, with the SDGs in place, the goals may provide a holistic framework for international organizations to align their policies to, affecting policy integration at the international level. I further expand on how the SDGs may affect policy integration in sections 1.4.1 and 1.4.3.

I now turn my attention towards the SDGs. First, I will dive into the SDGs; what are they and how may they function? Then, I lay out how the SDGs may affect international organizations, and specifically how the SDGs may affect institutional and policy integration at the international level.

1.4. The Sustainable Development Goals

The SDGs are a set of 17 global goals that cover a broad range of global issues, displayed in figure 1.3. and table 1.1. Global goals are goals agreed upon at the international level that are non-legally binding, aspirational in nature, and that rely on weak compliance

Figure 1.3. The Sustainable Development Goals
Formal visualization of the 17 Sustainable Development Goals. Image source: United Nations.

Table 1.1. Overview of the 17 Sustainable Development Goals

SDG	Formal short and long description	In-text reference	Primary dimension of development
SDG 1	**No poverty.** End poverty in all its forms everywhere	Poverty	Society
SDG 2	**Zero hunger.** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	Hunger	Society
SDG 3	**Good health and well-being.** Ensure healthy lives and promote well-being for all at all ages	Health	Society
SDG 4	**Quality education.** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Education	Society
SDG 5	**Gender equality.** Achieve gender equality and empower all women and girls	Gender	Society
SDG 6	**Clean water and sanitation.** Ensure availability and sustainable management of water and sanitation for all	Water	Environment
SDG 7	**Affordable and clean energy.** Ensure access to affordable, reliable, sustainable, and modern energy for all	Energy	Society
SDG 8	**Decent work and economic growth.** Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all	Work	Economy

Table 1.1. Overview of the 17 Sustainable Development Goals *(continued)*

SDG	Formal short and long description	In-text reference	Primary dimension of development
SDG 9	**Industry, innovation, and infrastructure.** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Industry	Economy
SDG 10	**Reduced inequalities.** Reduce inequality within and among countries	Inequality	Economy
SDG 11	**Sustainable cities and communities.** Make cities and human settlements inclusive, safe, resilient, and sustainable	Cities	Society
SDG 12	**Responsible consumption and production.** Ensure sustainable consumption and production patterns	Consumption	Economy
SDG 13	**Climate action.** Take urgent action to combat climate change and its impacts	Climate	Environment
SDG 14	**Life below water.** Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	Oceans	Environment
SDG 15	**Life on land.** Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainable manage forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss	Land	Environment
SDG 16	**Peace, justice, and strong institutions.** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels	Peace	Society
SDG 17	**Partnerships for the goals.** Strengthen the means of implementation and revitalize the global partnership for sustainable development	Partnerships	Society

Columns give for each SDG its number, its short and long description as used in the formal UN communication, a one-word description that is used throughout this thesis to refer to each goal in-text, and the main dimension of sustainable development the goal targets.

and reporting mechanisms (F. Biermann et al., 2017; Finnemore & Jurkovich, 2020; see also chapter 2). Global goals have several characteristics that make them a unique governance mechanism, and this mechanism of global governance has gained much prominence over the past decades. I further expand on the characteristics of global goals in general and how global goals may be effective at multiple levels of governance in chapter 2. In this section, I focus on what makes the SDGs a unique set of global goals, and what the potential effects of the SDGs are on international organizations.

The SDGs are a unique set of global goals in several key ways. First, the SDGs are highly ambitious, aiming to do no less than "transform our world" (UN, 2015: Preamble) by 2030. Second, the SDGs are unprecedented in their scope. The goals apply to all countries, and action is expected from all stakeholders, at all levels of governance. Whereas preceding goals, including the MDGs, were mainly aimed at developing countries, the SDGs are universal, applying equally to countries rich and poor (F. Biermann et al., 2017; Fukuda-Parr, 2016). In addition, the 2030 Agenda calls to action "all stakeholders, acting in collaborative partnership" (UN, 2015: Preamble). A collective and collaborative effort is required to achieve the goals, not only from nation states, but also from civil society organizations, non-governmental organizations, international organizations, and businesses, from local to global, and across all sectors (F. Biermann & Kanie, 2017; Sachs, 2012). Third, the SDGs are the broadest set of global goals so far, uniting a range of development goals into one agenda. With 17 goals, 169 underlying targets, and 231 unique indicators, the SDGs are more expansive than any (set of) global goal(s) ever set before (UN, 2020). Importantly, the SDGs are presented in the 2030 Agenda as 'integrated and indivisible,' where progress on one goal cannot come at the expense of progress on other goals. The 2030 Agenda explicitly aims to balance the economic, social, and environmental dimensions of sustainable development (UN, 2015). The goals thus reflect these three dimensions of development, with four goals covering mainly the protection of the environment, four goals focusing mainly on economic development, and nine goals covering mainly social issues (Stockholm Resilience Centre, 2016), see table 1.1. However, it is hard to make a clear-cut division of the goals across environmental, economic and social issues, as the SDGs were purposefully designed to – wherever possible – contain a mix of economic, social, and environmental targets under each goal (Elder & Olsen, 2019; Kamau et al., 2018). This historic shift towards a single set of goals that integrates the three dimensions of sustainable development thus recognizes the fundamental interdependency of the issues encompassed in the SDGs (Le Blanc, 2015; Stafford-Smith et al., 2017).

Taking the SDGs and 2030 Agenda at face-value, the goals are expected, politically, to steer global sustainable development in several specific ways. First, the goals are intended to be adopted by governance actors working on the broad range of different issues encompassed in the SDGs. In this way, the SDGs provide a framework to work towards across policy domains. Second, the goals are expected to increase collaboration, with even a dedicated goal, SDG 17 to enhance "Partnerships for the goals." The SDGs have also come with a renewed emphasis on the longstanding call to 'break down silos,' referring to the 'siloized' nature of global governance, where clusters of cooperation form around policy domains (Niestroy & Meuleman, 2016). The call for increased cooperation and the breakdown of siloes are in essence calls to increase the integration of governance systems, especially functional integration (Beisheim et al., 2022; Köhler,

2011; Nilsson et al., 2016). Third, and related, the SDGs are expected to increase policy integration. The 2030 Agenda calls upon actors to come up with "integrated solutions" (UN, 2015: para. 13) and SDG target 17.14 is explicitly directed at "enhancing policy coherence," a term often used interchangeably with policy integration (Tosun & Lang, 2017). Bringing together economic, social, and environmental goals in a single framework was also an explicit attempt to increase policy integration (Kamau et al., 2018).

While the political expectations of the SDGs are high, scholars have been more critical. Some scholars have argued that the SDGs are more or less doomed to fail, as the goals arose in a context of weak multilateralism and therefore cannot be expected to adequately address the issues they encompass (Vandemoortele, 2018). Others have gone even further, suggesting for example that the High-level Political Forum on Sustainable Development, tasked with overseeing progress on the SDGs (see section 2.3.2), is merely a talk-shop (Espey et al., 2015) or possibly even an empty institution, deliberately designed not to deliver (Dimitrov, 2019). In addition, some of the SDGs are arguably unachievable. For example, SDGs 1 and 2 on eliminating poverty and hunger are so lofty that few scholars – or politicians – would believe that they can be achieved in a mere 15 years.

Yet most scholars have argued that the SDGs may very well have effects on governance, including at the international level (Abbott & Bernstein, 2015; Beisheim & Fritzsche, 2022; F. Biermann & Kanie, 2017; Young, 2017). In the next sections, I turn to the question of how the SDGs may influence international organizations, looking specifically at institutional and policy integration.

1.4.1. The SDGs and international organizations

Given their importance in navigating the transboundary and interconnected issues encompassed in the SDGs, international organizations are one of the key actor groups that are expected to contribute to achieving the goals (Cormier, 2018; Dellmuth et al., 2020; Harrington, 2020; Sachs, 2012; UN, 2015). Yet, as the SDGs are not legally binding, international organizations are under no obligation to incorporate the SDGs into their work or align their work to the goals (F. Biermann et al., 2017). There is thus no guarantee that international organizations even adopt the SDGs or that the SDGs influence how international organizations conduct their policies, programs, and other activities. Nevertheless, the SDGs come with a strong narrative and to some extent social pressure for all involved actors, including international organizations, to adopt the goals and integrate the SDGs into their policies and programs, and to align their work to the goals (Fukuda-Parr, 2014; Fukuda-Parr & McNeill, 2019; P. M. Haas & Stevens, 2017; Young, 2017). Indeed, the SDGs are expected to change something in the behavior of all governance actors, including international organizations (P. M. Haas & Stevens, 2017).

1.4.2. The SDGs may affect institutional integration

Though there is no academic consensus on whether institutional integration among international organizations *should* be increased, and if so to what extent, calls from global politics to increase institutional integration have been long-standing and strong. Also, many scholars agree that increased cooperation at the global level – or an increase in institutional integration – is needed to better address interconnected global issues (F. Biermann & Kim, 2020; Hanf & Scharpf, 1978). There have been numerous reform proposals to increase institutional integration in global governance. For example, some scholars have argued that interplay management – deliberate efforts to improve interaction between institutions – could improve institutional integration (Brosig, 2011; Oberthür & Stokke, 2011; Stokke, 2020). Others have argued for centralized authorities with strong coordination capabilities to improve integration especially in global environmental governance (F. Biermann, 2000; R. E. Kim et al., 2020). Again others have proposed orchestration through intermediaries as a key strategy for increasing institutional integration (Abbott et al., 2015, 2020).

The SDGs may play a role here. The idea is that the SDGs, or global goals more generally, create an overarching agenda to work towards. While the SDGs are not legally binding, there is broad stakeholder support for the SDGs, as they were created with extensive stakeholder consultations (Kamau et al., 2018). In addition, there is a strong narrative and to some extent social pressure for governance actors to adopt and align their work to the goals (Fukuda-Parr, 2014; Fukuda-Parr & McNeill, 2019; P. M. Haas & Stevens, 2017). By offering a consensus framework on shared goals, supported by many actors, the SDGs may incentivize more interaction among actors (Lubell et al., 2017; Provan & Kenis, 2008), thus providing a unifying force in global governance (P. M. Haas & Stevens, 2017).

In addition, global goals can play a significant role in providing overarching and crosscutting norms (F. Biermann et al., 2017), serving as a key soft law instrument to orchestrate international organizations (Bridgewater et al., 2014; R. E. Kim & Bosselmann, 2013). In the case of the SDGs, the goals might spur clustering of the agreements within their own area and serve as an overarching set of principles, eventually modifying the application of other norms (R. E. Kim, 2016). Indeed, the SDGs are already influencing international and national law, for example by being mainstreamed into the European Commission's priorities for trade and investment law (Huck & Kurkin, 2018).

The recognition of shared goals is then a crucial first step to increase interaction between two or more governance actors, which may then lead to increased policy coordination, joint program implementation and/or more extensive partnerships (R. Biermann & Koops, 2017; Biscop et al., 2005; Gest & Grigorescu, 2010). For example,

shared goals were a key driver of increased cooperation across a range of issues areas between the UN and the European Union in the 1990s (Biscop et al., 2005). Similarly, the long-standing collective goal of reducing world hunger has been instrumental in increasing inter-organizational relations across many governance actors in food security (Margulis, 2017). Also in global energy governance, agreed upon goals – including SDG 7 (energy) and SDG 12 (consumption) – have led to increased coordination efforts among international organizations (Downie, 2020a, 2021).

Thus, if international organizations see the SDGs as a shared framework to work towards, the goals may facilitate more interaction overall. This, over time, would lead to a denser network of international organizations, which may result in an increase in *structural* institutional integration at the system level. Moreover, if international organizations see the SDGs as a holistic set of goals that span policy domains, these increased interactions may also reach across sectors, resulting in an increase in *functional* institutional fragmentation as well.

However, the SDGs may also decrease, rather than increase, institutional integration. For example, while the Millennium Development Goals (MDGs) were successful in mobilizing political attention and effort, the goals also led to more 'siloed' – or functionally fragmented – implementation approaches due to their sectoral nature (Fukuda-Parr, 2014; Fukuda-Parr et al., 2014). Like the MDGs, the SDGs are still separate, sectoral goals, which could lead to similar siloization effects as observed for the MDGs.

Moreover, 17 goals, with a plethora of underlying targets, is considered by some scholars as too many (Bernstein, 2017). Setting goals that are as numerous and broad as the SDGs is bound to lead to competition for priority (Young, 2017). While the SDGs are presented as integrated by the UN, and they do refer to one another, these references are not systematic and many goals remain weakly connected (Boas et al., 2016; Le Blanc, 2015). Tension between the goals exists in the form of trade-offs (Bernstein, 2017; Langford, 2010), and a common global vision on the integration of the goals is lacking (Yamada, 2017). Several authors have therefore highlighted the importance of systems to manage priorities (International Council for Science, 2017) and called for prioritization of goals (Spangenberg, 2017).

Some scholars also see the SDGs as an outcome of competing interests, with some goals having stronger support than others (Kamau et al., 2018). So, even with unanimously agreed global goals, normative ambiguity remains. The SDGs have been criticized for not providing a clear vision on sustainability (Bernstein, 2017). The consequence could be that while the SDGs do mobilize some actors and steer their focus towards the SDGs (Finnemore & Jurkovich, 2020; Young, 2017), this is towards one or more specific SDGs

that are close to the pre-existing activities of organizations. Thus, rather than viewing the SDGs as a holistic set of goals, international organizations may see the SDGs more as 17 separate goals. In that case, rather than taking all goals into account as an overarching framework, international organizations may engage in 'cherry-picking' of goals, focusing their organizational interactions on those actors who work on the same goal. At the system level, this would result in a realignment of governance systems around the 17 separate goals, ultimately resulting in less *functional* institutional integration (Bernstein, 2017; R. E. Kim, 2016). If this realignment also leads to lesser interactions overall, *structural* institutional integration may also decrease, though this does not necessarily have to be the case (see section 1.2.1).

Finally, the SDGs may very well have no effect on international organizations way of cooperating. International organizations could prefer to focus on their own goals and targets, and simply ignore the SDGs or pay only lip service to the goals (Bernstein, 2017). International organizations may have long-standing structures and procedures for interacting with others, and they may have preferred partners that they choose to interact with (Bernstein, 2017; F. Biermann & Siebenhüner, 2009; Underdal & Kim, 2017). If the SDGs indeed do not change international organizations' choices of partners to interact with, we will not observe any change in structural or functional fragmentation among international organizations after the adoption of the SDGs in 2015.

1.4.3. The SDGs may affect policy integration

Compared to previous global goals and agendas, the SDGs are more comprehensive and more focused on interconnections (Chasek et al., 2016). The collection of a broad range of issues into one more or less coherent agenda provides both a way to raise the salience of a range of issues and "a great opportunity to think along interlinkages" (Dahl, 2012; Janoušková et al., 2018; Niestroy & Meuleman, 2016). As described, the 17 SDGs each contain targets focusing on the economic, social, and environmental dimension of sustainable development wherever possible (Kamau et al., 2018). Thus, even if international organizations only focus on one SDG that is close to their core activities, that one goal still refers to economic, social and environmental development. In addition, several targets explicitly refer to targets under other goals (Le Blanc, 2015). The SDGs may thus provide a holistic framework for international organizations to align their policies to. For example, with the adoption of the SDGs, the UN and other actors have made resources available to support integrated assessments of policies and programs (Allen et al., 2018; International Council for Science, 2017). Also, the specific SDG target for policy integration, SDG 17.14 to "enhance policy coherence for sustainable development," may raise the attention for policy integration among international organizations. Overall, the SDGs may thus foster a context more conducive for policy integration than

existed before (Le Blanc, 2015; Nilsson & Persson, 2017; Stevens, 2017), leading also to more policy integration in international organizations.

Conversely, it is also possible that the SDGs decrease policy integration. In particular, the use of the SDG indicators has been criticized in this regard. To reduce the burden of data collection and monitoring, the UN member states decided at the adoption of the 2030 Agenda to keep the number of SDG indicators at a minimum (UN, 2017). As a result, SDG targets – sometimes containing multiple complex concepts – are measured by only one or two indicators. For example, SDG Target 2.3 reads "By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment." This target has only two indicators, one on the volume of production per labor unit and the other on the average income of small-scale food producers (UNSD, 2023). Some scholars have argued that the current set of SDG indicators is reductionist, reducing complex and sometimes fuzzy targets to simple, easily measurable targets (Fukuda-Parr, 2014; Fukuda-Parr & McNeill, 2019; MacFeely, 2018). The subsequent risk is that the indicators start to guide development in simplistic ways, resulting in "treasuring what we measure" (Fukuda-Parr & McNeill, 2019: 13). Governance by indicators may thus lead to conceptually narrow policies and programs, that focus on performance on one or two indicators without considering possible side-effects on other issue areas (Fukuda-Parr, 2014; Fukuda-Parr et al., 2014). International organizations especially, are well-known to both produce indicators and monitor the data on global development indicators (Bradley, 2015; Urueña, 2015). Several international organizations also serve as indicator custodians for the SDGs (UN, 2019b). Given international organizations' high reliance on indicators, and the possible effects of indicators on policy integration, the SDGs may thus decrease policy integration among international organizations.

Finally, the SDGs may have no effect on policy integration in international organizations. As argued in the previous section, international organizations could prefer to focus on their own goals and targets (Bernstein, 2017). The SDGs may not be relevant as a guiding framework, given that there are pre-existing mandates and long(er)-standing policy topics that international organizations engage with (Bernstein, 2017; F. Biermann & Siebenhüner, 2009; Underdal & Kim, 2017). In such a case, we would not observe any changes in policy integration since the goals were adopted in 2015.

1.5. Thesis aims and research questions

Bringing together the concepts of international organizations, institutional and policy integration, and the SDGs, I aim to investigate in this thesis how the system of international organizations has responded to the SDGs. The overall guiding research question is:

To what extent, and how, are the SDGs affecting institutional and policy integration at the international level?

I investigate this specifically across the 17 SDG issue areas and between the economic, social, and environmental dimension of sustainable development, among and within international organizations. To answer the main research question, I have formulated four sub questions.

Sub question 1 builds on section 1.4.1. Currently, it is not clear whether the (majority) of international organizations has even adopted the SDGs. To make any inferences on the effects of the SDGs, it is thus of first interest to see whether the SDGs are used by international organizations. Hence, the first sub question is:

1. *Are international organizations adopting the SDGs as a framework?*

Sub question 2 builds on section 1.3., specifically the paragraphs on the linking of global issues by international organizations. As described, international organizations were already integrating – at least to some extent – their policies in different policy domains. Yet, how this policy integration of different policy domains takes place remains unclear. Sub question 2 thus sets out to investigate to what extent international organizations integrate their policies for the 17 policy domains as embedded in the SDGs, and whether some SDG policy domains are more integrated with one another than others. Hence, the second sub question is:

2. *Which of the 17 SDG policy domains are most and least integrated by international organizations?*

Sub questions 3 and 4 build on sections 1.4.2. and 1.4.3., respectively. With these sub questions, I investigate whether the advent of the SDGs as set of goals affects institutional and policy integration among international organizations. For sub question 3, I investigate whether there is structural and functional integration across the 17 issue areas of the SDGs and across the economic, social, and environmental dimension of sustainability, and how this has changed since the SDGs were adopted. For sub question 4, I investigate how the SDGs are affecting policy integration within international organizations. The answers to sub questions 1 and 2 also serve as support to identify

whether any changes observed in institutional and policy integration can be attributed to the SDGs. Hence, the third and fourth sub questions are:

3. *How do the SDGs affect institutional integration among international organizations?*
4. *How do the SDGs affect policy integration within international organizations?*

The methods used in this thesis are both quantitative and qualitative, though with a focus on the former. An additional goal of this thesis is to reflect on the usability, advantages, and disadvantages of different quantitative, novel methods in global sustainability governance research. The quantitative approach is driven by my research focus, namely the system of international organizations. This research focus does not allow for detailed investigation of the internal structure and processes of international organizations. Rather, I treat international organizations as somewhat of a black box and look for any changes in system-level trends since the advent of the SDGs, though still accounting for some organizational characteristics. Due to this research focus, I also take a broad and pragmatic approach on how to define and select international organizations (see sections 1.3. and 4.5.1).

1.6. Overview of chapters

This thesis is structured as follows. Within the remainder of **Part I**, **Chapter 2** provides a literature overview of governance through global goals. It conceptualizes global goals as a global governance mechanism and provides a review of four key characteristics of governance through goals and how these four characteristics relate to the effects and effectiveness of global governance through goals.

Part II discusses how to analyze the steering effects of the SDGs. **Chapter 3** gives a non-systematic literature review of methods to research the steering effects of the SDGs, and global goals more broadly. While the chapter also discusses the methods used in this thesis, it goes beyond that to provide an overview of quantitative and qualitative methods, data sources and availability, current challenges, and future opportunities in assessing the steering effects of and progress on the SDGs. **Chapter 4** then specifically describes the methods and data sources applied in this thesis, including how key concepts under investigation are operationalized.

Part III contains the empirical studies realized in this thesis. The four chapters in this part each answer multiple of the research sub questions as posed in section 1.5. Table 1.2. gives an overview of how the chapters relate to answering the sub questions. The order of the chapters is determined by their analytical scope, moving from the macro-level to the micro-level. Starting at the macro-level, **chapter 5** focuses on the system of

Table 1.2. Overview of research questions and thesis chapters

Research sub questions	Chapter 5	Chapter 6	Chapter 7	Chapter 8
1. Are international organizations adopting the SDGs as a framework?		X		X
2. Which of the 17 SDG policy domains are most and least integrated by international organizations?		X	X	
3. How do the SDGs affect institutional integration among international organizations?	X			X
4. How do the SDGs affect policy integration within international organizations?		X		X

Columns indicate how the empirical chapters relate to each research sub question.

international organizations as a whole. Using network analysis, I investigate how institutional integration, both structural and functional, in a network of 276 international organizations has changed since the advent of the SDGs. At the meso-level, **chapter 6** looks at policy integration in a set of 159 international organizations. Using text analysis and regression, I investigate how the use of SDG keywords and other factors influence policy integration in international organizations. Also at the meso-level, **chapter 7** looks at the integration of the 17 issue areas encompassed in the SDGs. Using data from 154 international organizations, I investigate which SDG policy domains are frequently linked, and how this differs across subsets of international organizations. Finally, at the micro-level, **chapter 8** provides a case study of the negotiation of the Kunming-Montreal global biodiversity framework at the Convention on Biological Diversity. I investigate how the SDGs have played a role in that process, also looking at institutional and policy integration.

Part IV brings the research findings together. In the conclusion in **chapter 9**, I answer the research sub questions and main question, and discuss the implications of my research findings for goal-based global governance in general, and for the SDGs specifically. In addition, I discuss what my findings mean for policy, and I reflect on the advantages and disadvantages of the novel methods used in this thesis. Finally, I propose avenues for further research.

All supporting material is provided at the end of the thesis**.** This includes supplementary tables and figures, references, acknowledgements, and my curriculum vitae.

Governance through global goals

This chapter is based on:

Vijge, M., Biermann, F., Kim, R., **Bogers, M.**, Driel, M., Montesano, F. S., Yunita, A., Kanie, N., 2020. Governance through global goals. In F. Biermann & R. Kim (Eds.), *Architectures of earth system governance: Institutional complexity and structural transformation* (pp. 254-274). Cambridge: Cambridge University Press.

Vijge, Biermann and Kim were lead authors in the writing of this chapter, all other authors contributed equally.

2.1. Introduction

This chapter reviews recent literature on four key characteristics of governance through global goals. We first conceptualize governance through goals as a mechanism of global governance. We then delve into key literature around the four main characteristics of governance through goals, with a view to understanding how these characteristics relate to effectiveness of governing through goals, at all levels of governance.

In recent years, a relatively new mechanism of global governance has gained prominence: the use of broad global policy goals to orchestrate the activities of governments, international organizations, civil society, the private sector, and eventually all citizens of the world. Global governance through goal setting works through the joint commitment of all governments to collective policy ambitions. These ambitions are then enshrined in the form of multilaterally agreed goals that are not legally binding but come with more specific targets, indicators, and time frames, all of which are expected to steer public and private actors collectively into desired trajectories (Kanie & Biermann, 2017). While governance through global goal setting has featured in global governance since the second half of the twentieth century, its role has become much stronger in the last two decades (Fukuda-Parr, 2014). The Millennium Development Goals, agreed by the United Nations (UN) in 2000, were a first attempt at comprehensive global steering through goals. But global goal setting has gained much more importance when the UN General Assembly agreed, in 2015, on 17 SDGs to be implemented by 2030.

Like other attempts at global governance through goal setting, the SDGs share four key characteristics (F. Biermann et al., 2017). First, they are not legally binding and cannot be enforced as law within national or international adjudication. Second, they are marked by weak institutional arrangements that are not supported by international treaty organizations, formal monitoring agencies, strong dispute settlement bodies and the like. Third, they are meant to be highly inclusive, covering all countries and sectors of society. Fourth, they are broadly framed and hence leave much leeway to national implementation and interpretation. While none of these characteristics is specific to this type of governance, the combination of these four characteristics amounts to a unique approach to global governance.

2.2. Conceptualization of global goals

We define global goals as internationally agreed non-legally binding policy objectives that are time-bound, measurable and aspirational in nature. Notably, in this definition, we exclude legally binding international legal rules and norms such as those often

established through multilateral agreements. We also leave out widely proclaimed aspirations of global civil society and other non-state actors, such as those reflected in transnational private regulations. These goals from non-governmental bodies do not enjoy the formal support of governments and intergovernmental organizations; they are rather part of the realm of non-state, transnational governance (Kalfagianni et al., 2020). Furthermore, while we acknowledge that goals have been a feature of global governance since the first UN Development Decade in the 1960s, we focus on the more recent, and much more ambitious, global goals.

The concrete mechanisms through which global goals function are yet to be examined in detail. There is consensus, however, that a key defining feature of governance through goals is that it does not seek to directly change the existing institutional structure of governance systems, also referred to as governance architecture. Governance through goals does not seek to directly affect institutional integration, as it does not seek to regulate existing institutions or actors by demanding or enforcing behavioral change (see Kanie and Biermann 2017). Rather, governance through goals relies on non-legally binding global public policy goals, generally negotiated under the purview of intergovernmental institutions and organizations, most notably the UN. Such goals are hence largely aspirational, but they are typically endorsed by governments and non-state actors around the world, which could enable them to guide actions and policies at global, national, and subnational levels.

Although it is unknown to what extent governance through global goals can really lead to immediate and radical governance transformations, many commentators and supporters expect them to have some impacts, for example by triggering incremental but widespread changes when goals are taken up in national and international policies and programs. Governance through goals can thus have some influence by setting priorities that shape the international and national allocation of scarce resources, as well as by galvanizing action through specific and time-bound targets with which actors track their progress towards goal achievement (R. E. Kim et al., 2020; Young, 2017). As such, governance through goals can trigger and orchestrate, rather than enforce, some of the policy responses to institutional fragmentation and complexity, such as policy integration (Runhaar et al., 2020), interplay management (Oberthür & Stokke, 2011; Stokke, 2020), orchestration (Abbott et al., 2015, 2020) and hierarchization (R. E. Kim et al., 2020). This may also lead to changes in institutional integration as also described for international organizations (see section 1.4.2).

The effects and effectiveness of governance through goals remain contested, however (see discussion in Kanie et al. 2017). While some observers argue that global goals can have significant impacts (Hajer et al., 2015; Stevens & Kanie, 2016), others criticize this

governance mechanism for its lack of enforcement and compliance mechanisms. Will the goals be effective in the end? In this chapter, we review the body of social science literature that deals with this question. We are less interested in whether goals are actually implemented but rather in the prior, first step: whether goals have any effects on governance systems and processes, and here in particular on whether goals have the potential to affect entire governance architectures, for example by advancing institutional integration between decision-making systems or reducing norm conflicts. While some observers are optimistic that the SDGs of 2015 will help foster institutional integration at the international level (Le Blanc, 2015), others doubt such claims, arguing that the goals themselves simply reflect the fragmented structure of global governance (R. E. Kim, 2016). So far, however, there has been little, if any, empirically grounded research on the effects of governance through goals on governance architectures. Therefore, our review attempts here to lay the foundation for new inquiries into this research domain.

2.3. Key characteristics of governance through goals

We now review recent research findings and conceptual contestations on the four key characteristics of governance through goals mentioned above, namely their non-legally binding nature; the underlying weak institutional arrangements; the inclusiveness of the goal-setting process; and the national leeway in the implementation of the goals.

2.3.1. Non-legally binding nature

A first key characteristic of governance through goals is that they are not legally binding (F. Biermann et al., 2017). Both the Millennium Development Goals of 2000 and the SDGs of 2015 were formally established by a non-binding UN General Assembly Resolution as part of a broader development agenda. Although some scholars claim that the UN General Assembly has quasi-legal competences (Falk, 1966), the UN Charter clearly deems its resolutions as being only recommendations, as they are not formally signed and ratified by states. These sets of global goals are hence not part of international law but are essentially political agreements (R. E. Kim, 2016).

Some scholars have argued, therefore, that goal setting through non-binding agreements is merely a suboptimal, ineffective or even counterproductive strategy. Some even see it as contributing to increasing institutional complexity and fragmentation, with the potential to complicate international cooperation (Elliott, 2017). For those global goals that are grounded in international agreements – as is the case with some targets under the SDGs – legal scholars have emphasized the need to create additional mechanisms to ensure that these goals are not just a reflection of, but reach further than

the existing fragmented and compartmentalized system of international law (R. E. Kim, 2016; R. E. Kim & Bosselmann, 2015; Underdal & Kim, 2017).

Others have questioned the ability of non-binding goal setting to influence a wider political arena and to mobilize societal forces in modern systems of multilevel governance (Bodansky, 2016; Young, 2017). A non-binding status could potentially limit the compliance-pull and legitimacy of globally agreed goals at the national level, because acceptance can be limited to mere executive approval, without the need for governments to seek domestic legislative approval and formal adoption (Bodansky, 2016). For example, domestic courts are not obliged to use the SDGs as a judicial source when resolving disputes.

Furthermore, the non-binding status of global goals might limit the sense of urgency, commitment, and acceptance, especially among government officials who are expected to assume key roles in realizing the goals (Bodansky, 2016; Franck, 1990; Raustiala, 2005; Young, 2017). That governments generally attribute some value to the legal status of agreements is emphasized by the strong disappointment expressed by many governments when the outcome of the 2009 Copenhagen conference of the parties under the climate convention proved to be 'only' a political agreement. Another example are the continued discussions over the legal status of the subsequent 2015 Paris Agreement (Bodansky, 2010, 2016).

In addition, given the lack of legal standing, internationally it could be unclear how new global goals, such as the SDGs, relate to all the earlier agendas, agreements, and plans. In the case of the Millennium Development Goals, for example, it has been argued that they disrupted ongoing processes for the implementation of the 1990s conference agendas through cherry-picking of issues, the modification of previously agreed targets and the disruption of nascent initiatives (Fukuda-Parr et al., 2014; Langford & Winkler, 2014; van der Hoeven, 2014).

Yet, while it does seem that lack of legal force limits the effectiveness of global goals, the opposite argument is also found in the literature. Serious questions have been raised, for instance, about the effectiveness of international environmental law (R. E. Kim & Bosselmann, 2013) and the extent to which it affects state behavior (Goldsmith & Posner, 2005). Bodansky (2016) even argued that some merely political agreements – including the 2009 Copenhagen Accord – have had a greater influence on state behavior than legal agreements. Proponents of goal setting add here that its underlying premises differ substantially from those of rulemaking (Young, 2017: 34). Whereas rulemaking creates indefinite behavioral prescriptions formulated as requirements and prohibitions for specified actors, goal setting articulates time-bound aspirations, procedures

and targets that need to rely on enthusiastic support among a wide range of actors to induce self-governance (Young, 2017). The expectation of behavioral constraints that legally binding documents potentially create can even lead to pick-and-choose strategies among countries, resulting in many narrow agreements with only few parties that leave out important countries. The more flexible instrument of goal setting, however – especially when it provides possibilities for the adaptation to national and local realities – might motivate all governments to make at least some contributions on sensitive topics (Zelli et al., 2010). For example, although the reduction of inequality between and within states was a bone of contention during the negotiations of the SDGs, all countries have in the end agreed to SDG 10 on inequality, including many highly hesitant parties such as the United States (Kamau et al., 2018). This would not have been possible if that goal had been legally binding.

Another dimension of 'bindingness' is the precision with which goals are formulated. Although the Paris Agreement included non-legally binding Nationally Determined Contributions, its provisions are formulated in terms that do not create clear individual obligations (Bodansky, 2016). Also, its provisions on adaptation and means of implementation lack the precision to create enforceable legal obligations (Bodansky, 2016). An increasing number of legal norms and provisions can result in the progressive proliferation of normative ambiguity with little effect, whereas non-legally binding commitments might in some cases be more precise and effective (Victor et al., 1998). This is what some argue could be the case with the non-binding but sometimes very precise indicators for the SDGs.

Whether global goals as legally non-binding political agreements can have some effect will, hence, depend more on the detail and on additional elements that add alternative dimensions to bindingness that could enhance compliance (Bodansky, 2016). An important example is the extent to which accountability mechanisms are in place to support global goals, for instance through systems of transparency and review. In the case of the SDGs, the Voluntary National Reviews provide such a system. Although it will still take more time for all governments to bring forward their Voluntary National Reviews, in the end these reports may have the potential to serve as a detection mechanism for poor performance. This again could raise the reputational cost of non-compliance. In addition, Voluntary National Reviews could help mobilize and empower domestic supporters and increase a sense of urgency among participants. In sum, with these mechanisms in place, the SDGs could have important effects despite their lack of legal standing.

2.3.2. Weak institutional arrangements

A second characteristic of governance through global goal setting is that it needs to rely on weak institutional arrangements at the international level. By 'weak' arrangements, we mean that global goals do not rely on legal authority or on a formal status within the UN hierarchy. This also implies that they lack significant resources to execute their mandate and the capacity to create norms, resolve disputes and enforce compliance with further rules and regulations. Generally, weak institutional arrangements are often associated with claims about the ineffectiveness of global governance that comes from inefficiency, the lack of an overall vision, duplication and conflicts between the mandates and activities of organizations, lack of implementation and enforcement and lack of adequate and predictable funding (F. Biermann, 2014; Elliott, 2005; Lodefalk & Whalley, 2002). Such criticisms often coincide with negative views on institutional fragmentation (F. Biermann et al., 2020). Many of the discussions regarding the institutional reform of the global architecture for earth system governance, for instance, revolve around an upgrade in authority of existing organizations or the establishment of an authoritative international organization dealing with the environment (R. E. Kim et al., 2020).

Several authors, however, have framed weak institutional arrangements also as a possible way to deal with governance fragmentation. One such way is known as orchestration, a strategy closely linked to governance through goals. Orchestration relies not on legal authority and enforcement but rather on "soft modes of influence" (Abbott et al., 2015: 223). Orchestrators gain influence through intermediary organizations and can steer actors in desired directions, typically through "bottom-up, non-confrontational, country-driven and stakeholder-oriented" strategies (F. Biermann et al., 2017: 27). Despite a lack of formal authority, orchestrators are believed to be able to exercise leadership, provided that they are considered as legitimate by intermediary and target organizations and that they are the key focal point and expert within their areas, which grants them political weight (Abbott et al., 2020).

A prime example of orchestration is the High-level Political Forum on Sustainable Development (HLPF), which is responsible for the institutional oversight in formulating and implementing the SDGs (Persson et al., 2016). The HLPF was established during the 2012 UN Conference on Sustainable Development, replacing the UN Commission on Sustainable Development that was often seen as a mere 'talk shop' with no authority to make or facilitate formal decisions (Ivanova, 2013: 219; see also Bernstein, 2017). The HLPF did not gain much formal authority or resources compared to its predecessor (Abbott & Bernstein, 2015).

Yet, despite these shortcomings, some scholars perceive the HLPF as rather influential. The Forum has been granted legitimacy through a formal resolution on its establish-

ment; it has universal membership, high-level representation, and participation of not only UN member states but also international organizations and non-state actors. The HLPF is hence regarded by some as a focal point for implementing the SDGs at the global level. It is a forum within the UN General Assembly, which may provide it with some political weight (Abbott & Bernstein, 2015; Bernstein, 2017). Though this points to a potential for success, the HLPF is bound to face challenges in exercising leadership within an architecture that is still characterized by institutional fragmentation and partial competition among a plethora of international organizations that all work in the field of sustainable development (see also section 1.2.1).

In short, the jury is still out on whether weak institutional arrangements harm or help with the effectiveness of governance. While some see little promise in organizations with weak arrangements, others are more optimistic, provided that the right policy measures – such as purposeful orchestration strategies – are in place.

2.3.3. Inclusiveness

A third characteristic of governance though goals is the inclusion of a plurality of state and non-state actors in both goal formation and goal implementation. We distinguish here between procedural inclusiveness – that is, the openness of the process to a wide range of state and non-state actors – and substantial inclusiveness, which relates to the broad range of targets of a given policy. Both dimensions of inclusiveness are related: procedural inclusiveness can shape substantial inclusiveness, because including a wider range of actors in the setting of goals can favor the establishment of goals with broader objectives.

In global goal setting, the attention to inclusiveness is linked to the search for greater (input) legitimacy in global governance. This, again, relates to the concern of addressing democratic deficits in global governance that result from insufficient participation and accountability (Bäckstrand, 2006b; F. Biermann & Gupta, 2011; Gellers, 2016; Keohane, 2011). Some even see goal-based governance as a way to pursue what they call stakeholder democracy – a type of hybrid governance that responds to the argument that more deliberative input legitimacy results in greater output legitimacy and hence better governance results (Bäckstrand, 2006a). Inclusiveness is generally viewed by proponents as a crucial step to more 'reflexive' forms of governance. Reflexivity is seen as a form of resilience and deliberation that embodies the institutional ability to be something else (as opposed to do something else) to effectively deal with changing circumstances (Dryzek, 2014; Feindt & Weiland, 2018; Voß & Kemp, 2006). Also empirically, we observe since the 1990s a participatory turn in global governance that started with the Agenda 21 of 1992 and later evolved into the 2002 World Summit on Sustainable Development, which led to a shift from 'mere' participation to multi-stakeholdership. New forms of

hybrid governance emerged, including dialogues and public–private partnerships. These play important roles in the governance of sustainability issues (Bitzer et al., 2008; Glasbergen et al., 2007), regimes (Gupta & Vegelin, 2016), and interactions between regimes (Visseren-Hamakers et al., 2011; Visseren-Hamakers & Verkooijen, 2012), even though concerns about their actual effectiveness and equity effects remain.

These mechanisms have been criticized, for example, for lack of participation from marginalized groups, insufficient monitoring and reporting and the biased funding that is generated through strong private sector involvement (Bäckstrand, 2006b; Bäckstrand & Kylsäter, 2014; F. Biermann et al., 2012). Studies on the failure of some partnerships suggest, for example, the importance of clear links with intergovernmental organizations, as well as the existence of measurable targets, effective leadership and systematic reviews for the reporting and monitoring of targets (Bäckstrand, 2006b; Bäckstrand & Kylsäter, 2014; Pattberg & Widerberg, 2016).

This importance of effectiveness and measurability has informed the adoption of the Millennium Development Goals in 2000: a very concise set of development goals, praised for their clarity and simplicity and hailed as a historic example of global mobilization to achieve important priorities (Sachs, 2012; Solberg, 2015). And yet, the Millennium Development Goals have also faced sharp criticism with regard to their inclusiveness.

First, the Millennium Development Goals were aimed only at developing countries, with industrialized countries envisaged almost as tutors, reflecting a unidirectional and not very inclusive understanding of development (Deacon, 2016). Procedurally, the earlier stages did reflect some inclusiveness, with the UN inviting input from non-state actors and eventually publishing "We the Peoples: The Role of the UN in the 21st Century", which included a list of global values and priorities. However, the actual Millennium Declaration, and the extraction of the Millennium Development Goals from it, were largely based on input from the OECD's Development Assistance Committee, thereby attesting to the scarce inclusiveness of a supposedly global goal-setting process (Chasek et al., 2016; Honniball & Spijkers, 2014). In addition, there has also been criticism about the strong emphasis of the Millennium Development Goals on measurability, which has caused a certain reductionism and may have led to the exclusion or marginalization of crucial qualitative elements of comprehensive development (Fukuda-Parr et al., 2014). At the same time, the partnerships that were established around the Millennium Development Goals were criticized for their weak review mechanisms and performance measurements (Bäckstrand et al., 2012; Bernstein, 2017).

Considering these deficits of the Millennium Development Goals, some have described the strong focus of the SDGs on inclusiveness as a transformative moment in develop-

ment policy (Stevens & Kanie, 2016). Unlike other UN goals, the SDGs emerged from a 'mold-breaking' negotiation process that involved the establishment of an Open Working Group, which, in line with the official aim to conduct an "inclusive and transparent intergovernmental process on SDGs that is open to all stakeholders" (UN, 2012: 63), strived to be as open and inclusive as possible. Unlike most UN General Assembly working groups, whose meetings are generally closed to observers and lack official and publicly available records, the Open Working Group pursued the full involvement of stakeholders and the gathering of expertise from civil society, the scientific community and the UN system. It actively reduced delegation rigidity and set up a stocktaking process – including meetings with civil society – aimed at providing all negotiators with the same terms of reference and at fostering a high level of cohesion and a common sense of purpose (Chasek & Wagner, 2016). In this light, also noting the role played by UN agencies in the UN task force and by the wide consultations with civil society, some scholars have referred to this goal setting as "global social governance" (Deacon, 2016: 118). Instrumental in the procedural success of the "largest development dialogue ever held" (Solberg, 2015: 61) has also been the experimental use of new technologies – such as the creation of a global questionnaire – in the consultation phase (Gellers, 2016; Sachs, 2012), with some scholars arguing that the very future of global participation lies in the application of information technologies (Honniball & Spijkers, 2014).

Against this rather optimistic backdrop, however, more critical voices have pointed at some weaknesses in the inclusiveness in global goal setting, even with the SDGs. First, there is a difference between inclusive invitation and inclusive participation (that is, actual influence on the final outcomes), with the process leading to the SDGs faring better in the former than in the latter (Deacon, 2016; Gellers, 2016). Second, the combined emphasis on growth (Gupta & Vegelin, 2016) and on nationally determined commitments presents the risk of stifling inclusiveness at the later stages of goal implementation, in that it might incentivize a 'sovereigntist' policymaking reversal away from the concern to improve global governance along 'social' lines (Deacon, 2016: 129). Third, from a discursive standpoint, it has been pointed out that the SDGs do not constitute a major revolution vis-à-vis the overwhelmingly neoliberal narrative of the Millennium Development Goals. While the SDGs do include more references to Keynesian, feminist and 'world society' sustainability elements, they still retain an emphasis on neoliberal tenets such as economic growth. And they do not, as pointed out by critics, include any strong criticism of the existing global trade and financial architecture (Carant, 2017).

2.3.4. National leeway

A fourth characteristic of governance through goal setting is that it grants much leeway for national choices and preferences. While global goals provide a roadmap of what

ought to be done, they remain subject to contestation, negotiation, and translation at the national level (Fukuda-Parr, 2014).

To start with, this again brings in concerns about the legitimacy, fairness, and accountability of national goal implementation. For example, the inclusiveness with which the SDGs have been crafted at the global level would imply that such inclusiveness is also important for the implementation of the goals at national and subnational levels, but this is not always the case. So, the national leeway left in the implementation of the SDGs might result in less inclusiveness in some countries than was originally envisaged.

Second, should global goals be nationally implemented without adaptation to national circumstances, the results could be unfair outcomes (Easterly, 2009; Fukuda-Parr, 2014) and the omission of important priorities for inclusive and equitable development (Kabeer, 2010). If countries with different levels of development are held up to the same measures of performance – as was implicitly the case with the Millennium Development Goals – then the special conditions in the least developed countries would make it very difficult for them to meet the goals (Easterly, 2009; Hailu & Tsukada, 2011). African countries, for instance, have performed poorly in implementing the Millennium Development Goals despite having made significant progress in that period (Easterly, 2009). Furthermore, the translation of the Millennium Declaration into an agenda for action has created a dissonance between the Goals' original intent and their implementation (Fukuda-Parr, 2010). The Millennium Development Goals distilled complex development challenges into merely 21 quantitative targets, which affected how development was understood and how decisions were made (Fukuda-Parr, 2014). Poverty, for example, was narrowly framed as material deprivation with little attention paid to inequality, and it therefore overlooked the multidimensional, intersectional causes of poverty such as race, gender, and ethnicity (Kabeer, 2010). Even though the Millennium Development Goals had established a clear and communicable focus, the subsequent measures of progress did not account for whether such progress was equitable or sustainable (Hill et al., 2010; Hulme, 2010; Kabeer, 2010).

Third, however, nationally owned strategies for implementing the SDGs might also foster greater accountability at national and other levels, through the development of appropriate monitoring and evaluation mechanisms. Such mechanisms, including the national SDGs reports and the Voluntary National Reviews, provide important means through which states could reflect, confront, and fill institutional gaps towards goal attainment. As a key feature of governance through global goal setting, national leeway encourages self-regulation or self-steering (Fukuda-Parr, 2014), the translation and adoption of goals into national policies and institutions (Galli et al., 2018) and more integrated institutional arrangements fit to address cross-sectoral issues and challenges. All

of this can affect governance architectures discursively and materially. However, while the SDGs somewhat remedy the shortcomings of the Millennium Development Goals, potential pitfalls remain. As Oran Young aptly states, "[i]t is relatively easy to establish a causal connection between the articulation of goals and the establishment of organizational arrangements to promote their attainment. It is another matter to demonstrate such a connection between goal-setting and actual progress toward fulfilling the relevant goals" (Young, 2017: 37). Given the politics that animate development policy and practices across scales, there are risks of simplification and selectivity of goals through national implementation (Fukuda-Parr, 2016). A recent analysis of Voluntary National Reviews indicates that various efforts are underway to incorporate the SDGs across all levels of governance, from setting up new institutions and engaging with local governments to realigning national plans with the SDGs (Sarwar & Nicolai, 2018). Yet very few governments clearly articulate how to execute their respective agendas or how to monitor and evaluate their progress (Sarwar & Nicolai, 2018). This may result in "slippage in ambition and vision" in the processes of moving from goals to targets to indicators, all of which guide the orientation of policies and institutions (Fukuda-Parr & McNeill, 2019: 12; see also Merry, 2019). A study on SDG 12 (consumption) discusses the divergent framings of what sustainable production and consumption means and how to get there, arguing that quantitative indicators are vital to ensure accountability and avoid the continuation of 'green growth' trajectories that overlook planetary boundaries (Gasper et al., 2019). At the same time, quantification may lead to misleading or distorted information with significant policy implications (Merry, 2019), leaving the Inter-agency and Expert Group on Sustainable Development Goal Indicators to adopt a pragmatic approach of "measuring what we know how to measure," while addressing remaining challenges (Elder & Olsen, 2019: 80).

Fourth, the national leeway might foster important learning processes within countries. Institutional integration requires much re-learning and must transpire through a multi-actor, multi-sector, and multilevel process, providing new possibilities to engage with different types of knowledge (Meuleman & Niestroy, 2015). For instance, the tendency to simplify global goals may be because of genuine operational challenges in formulating and implementing policies, which can reflect the multiplicity of linkages and foster integration among goals (Elder & Olsen, 2019). Some indicators for the SDGs are still not based on established methodologies and standards, and some lack the required data for measurement (MacFeely, 2019). Additionally, moving from sectoral to integrated approaches to goal implementation and measurement at the national level is challenging, given that many institutional structures are still arranged in silos (Elder & Olsen, 2019). In sum, all these processes at the national level can facilitate social learning both within and across institutions, all in order to create policies that respond to local, national and global aspirations (Patel et al., 2017).

2.4. Conclusion

Global governance through goal setting, as an increasingly influential mechanism of global governance, poses important questions for academic research and policy analysis. For example, we need to better understand how, to what extent and with what effects global goals and their norms are embedded and integrated in existing governance arrangements at global, national, and local levels. Also, what further governance reforms are needed to implement and reach the goals at various levels? The concept of orchestration in global governance constitutes an important new research area as well, focusing for example on the extent to which 'powerless' steering may have powerful effects on actors' behavior (see for example Abbott et al., 2015).

Another important research question is to what extent and how the rhetoric of institutional integration and policy integration between the SDGs takes shape in governance arrangements at global, national, and subnational levels. While the SDGs are meant to be indivisible and implemented coherently, unavoidable trade-offs and prioritization between goals need to be dealt with. The question is then how the often-siloed governance arrangements give shape to the SDGs, the international level of which is the further focus of this thesis.

As a form of governance through goals, the SDGs show a level of ambition and comprehensiveness that surpasses all other forms of governance through goals. This makes them "one of the most intriguing new global initiatives in sustainable development and environmental policy" (Biermann, Kanie & Kim, 2017: 29). Governance through goals as a mechanism of global governance is not likely to disappear, nor is it likely to become less dominant with the termination of the SDGs by 2030. It will therefore remain of utmost importance, both for the attainment of the SDGs and for any future effort of global goal setting, to continue critical examination of the various effects of global goals at the global, national and subnational levels.

Part II

How to analyze the steering effects of the SDGs

Review of methods for analyzing steering effects of global goals

This chapter is based on:

Pradhan, P., van Vuuren, D., Wicke, B., **Bogers, M.**, Hickmann, T., Kalfagianni, A., Leininger, J., di Lucia, L., van Soest, H., Warchold, A. and Zimm, C. (2022). Methods for analyzing steering effects of global goals. In Biermann, F., Hickmann, T., & Sénit, C. A. (Eds.). *The political impact of the Sustainable Development Goals: Transforming governance through global goals?* (pp. 172 – 203). Cambridge University Press.

Pradhan, van Vuuren and Wicke were lead authors in the writing of this chapter, all other authors contributed equally.

3.1. Introduction

This chapter presents an overview of the large diversity of research methods to understand and explain the steering effects of the Sustainable Development Goals (SDGs), or global goals more generally. Given the aim of this thesis to also reflect on the usability of different quantitative methods, this chapter provides a starting point for such reflection. The specific research design, methods and data used to conduct the empirical work in this thesis are discussed in chapter 4.

The term 'steering effects' is meant here to refer to the influence of the global goals on behavioral change of political, economic, and societal actors. We need to know how the goals influence political discourse, institutional change, and decision-making from local to global scales. Therefore, we need to include methods that aim to capture these aspects. Ultimately, however, the SDGs must also be evaluated in broader terms of the actual progress towards their achievement. This can be done either for the current situation and recent past or through projecting possible future impacts of current trends. We have chosen to use a broad definition of steering effect to capture both elements: the political and societal responses to the SDGs and the degree to which the SDGs are achieved. These elements can be compared to two methods to evaluate the steering of a car: The steering effect can be measured by either changes in the steering wheel's position or in the car's direction. One needs both types of information: Looking at the direction of the car alone does not inform on whether it is the steering wheel that causes changes, while monitoring the steering wheel alone does not inform on whether changes are sufficient and in the right direction. Here, the steering wheel stands for the impact on institutional change, decision-making and the political discourse, and the direction of the car the overall achievement of the goals.

This chapter presents a review of the multi-faceted landscape of methods used to study the steering effects of the SDGs, by providing an overview of the methods that are used to understand the steering effects of the goals, based on a literature review. This chapter provides a meta-level and interdisciplinary perspective on these methods. Our analysis covers methods, which we define as approaches to answer questions about the steering effects of the SDGs. We distinguish these approaches from tools, which build on such methods and help to bridge research, policymaking and the wider public debate. Tools often give access to data and make research on the goals more accessible. Although our analysis focuses on methods, we include tools where relevant. We include quantitative and qualitative methods and illustrate their diversity. However, we do not aim for complete coverage of all methods; we focus on those that are most widely applied.

In the next section, we first discuss the political use of science and the complex relations between science and politics. We then lay out and apply our framework for discussing the methods, organized around four dimensions relevant for understanding the methods' contribution to studying the SDGs: the temporal perspective, geographical scale, topical coverage, and interactions and interlinkages. Based on this, we discuss the main purposes of the methods and their strengths and limitations. We also identify knowledge gaps and suggest potential steps forward. Finally, we summarize and compare the methods before listing some observations for further research on the steering effects of the SDGs.

3.2. The political use of scientific evidence

Emphasizing the need for evidence-based policymaking is constitutive for the 2030 Agenda for Sustainable Development (2030 Agenda) and its implementation. The Millennium Development Goals were often criticized for being unmeasurable and that it was hard to know what was achieved (Feeny, 2020). When the SDGs were developed, more attention was devoted to elaborating a system of goals, targets and indicators to measure implementation, progress and achievements. United Nations (UN) bodies such as the Open Working Group, the Inter-agency and Expert Group on SDG Indicators, and science at large contributed to this process. As such, the SDGs can be seen as part of a global effort to move to transparent, evidence-based policymaking.

Although considered decisive for the steering effects of the SDGs, the evidence-based policy-making approach has also been challenged. First, already during the negotiations leading to the adoption of the 2030 Agenda, tensions arose around whether targets were to be derived directly from science, which was perceived as more neutral, or whether they should be more norm-based. In this context, trends towards further polarization in some societies have also led to questions about the empirical evidence for sustainable development (Gottenhuber & Mulholland, 2020).

Despite these challenges, the use of scientific data and evidence can serve important purposes for politics and society, such as agenda-setting, accountability, informing decision-making, and monitoring and evaluation. First, data and evidence are critical for political agenda-setting (Chimhowu et al., 2019). For instance, the Fridays For Future movement uses scientific evidence for pressuring governments to change their policies towards more sustainability. Second, holding governments and other actors accountable requires data on policy processes and outcomes. For instance, governments need to be transparent and inform citizens about progress in the implementation of the SDGs (Breuer & Leininger, 2021; Laberge & Touihri, 2019). Third, data and evidence are needed

for informing public policymaking. Evidence can feed into theories of change of policy programs. For example, designing social cash transfers (SDG 1) to improve food security (SDG 2) requires knowledge about the mechanisms that link such social protection measures with sustainable food provision (Burchi et al., 2018). Fourth, monitoring and evaluation are needed to measure progress of implementing the goals (monitoring) and to gain knowledge on the effectiveness of their implementation (evaluation) (Bowen et al., 2017).

Various methods have been applied for these types of political use of scientific evidence in the context of implementation of the global goals. On the one hand, studies that use prospective methods can bring out new issues on political agendas and inform policy-making. For instance, modelling future scenarios as reported by the Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services has had a decisive impact on shaping environmental agendas of governments and international bodies (Beck & Mahony, 2018). On the other hand, all types of political use of data and evidence require a retrospective use. For instance, societies can hold their governments accountable, and specific programs can monitor progress by applying a set of predefined and adaptable indicators.

Although various methods are available and used to study the SDGs, some aspects of the 2030 Agenda require new thinking and further methodological developments. This relates to the development of a network of measurable targets and addressing the interlinkages between goals with implications for the use of specific methods. Five implications can be highlighted:

First, a lack of data to measure all 17 SDGs is still a challenge (Fukuda-Parr & McNeill, 2019). Some of the 169 targets and the 231 unique indicators lack a reliable data basis. This is in part owing to governments agreeing on these targets and indicators even though some were not measurable in the beginning. Second, the SDGs are a system of interacting components rather than just a collection of goals, targets and indictors (Pradhan, 2019), aiming to leave sectoral silos behind (Breuer, Leininger, et al., 2019). Science needs to use and develop methods, which allow them to capture and assess integrated policymaking. Third, there is a tension between the innovative character of the 2030 Agenda and the state of the science. Science cannot provide all information and evidence that is necessary for goal implementation (D. J. Lang et al., 2012). More transdisciplinary research, theory-building, integration of methods and generalizable evidence are needed to inform implementation of the SDGs. Fourth, science–policy interfaces need to be aligned to the 2030 Agenda (Roehrl et al., 2014). For instance, despite broad acknowledgement of the need for evidence-based policymaking, science representatives are hardly present in national implementation (TWI2050, 2020).

This is important as only an informed society plays a significant role in holding governments accountable and setting public agendas (J. A. Fox, 2015). Fifth, evidence and data are not sufficient if they are not 'translated' for policymakers. Methods, including those described in this chapter, are often complex and make results less accessible for policymakers. Policymakers mostly care little about the methods used as long as results are reliable and robust (di Lucia et al., 2020). This is where tools can come in to bridge between scientific methods and policymakers.

In discussing the methods used in the literature, we will thus consider these functions of data and evidence as well as these five implications of the particularities of the SDGs.

3.3. Most common methods

Various methods have been applied to assess the steering effects of the SDGs. They differ in the two fundamental aspects of the steering effects that we explained above: they assess either the impact of goals on decision-making and politics or the progress towards achieving the goals. Four dimensions are especially relevant for better understanding the main methods.

First, methods differ as to their temporal perspective. They can be useful to either examine the current situation and historical progress (that is, in a retrospective or ex-post evaluation) or to develop scenarios and project trends that help understand whether the goals can be met by 2030 (that is, a prospective or ex-ante evaluation). Second, methods can be used at different scales (global, regional, national, or local), often linking local developments with national or global effects. Data availability on the SDGs, however, differs strongly across these scales. Third, methods can vary in topical coverage. Some assess only a single goal. Others can address multiple goals and topics and even their interrelations. Fourth, the 17 goals and their 169 targets are a set of integrated objectives that interact across scales and sustainability dimensions. A robust understanding of such interactions within and across the goals is vital for shaping policies towards achieving the goals.

We now use these four dimensions to characterize and assess five widely used methods to study the SDGs. These methods are monitoring approaches, model-based scenario approaches, qualitative case studies, network analysis, and discourse and interpretative approaches. Regarding the two fundamental elements of steering effects, the first two approaches aim at measuring progress towards the goals, while the other three aim at studying the goals' impact on decision-making and political discourses. In the following,

we discuss the main purposes, strengths, and limitations of the methods, also in the light of the five specific challenges that we introduced above.

3.3.1. Monitoring approaches

We define monitoring approaches as methods that use data on historical and current trends to study the steering effects of the SDGs in terms of progress towards goal achievement. These approaches use indicators and indices to measure, monitor and rank progress in attaining some or all SDGs. Indicator frameworks are also used as management tools for developing implementation strategies and resource allocations for achieving the goals (Schmidt-Traub et al., 2015). Additionally, indicators can be combined to form indices or be used as a set to understand interlinkages among SDGs.

To monitor progress, various indicator frameworks are used on scales from global to local. Specifically, there are three indicator frameworks or databases that policy-makers, practitioners and researchers widely use, see table 3.1.

The first is the Official Global Indicator Framework for SDGs of the UN, which defines 231 indicators that cover the multidimensional aspects of the 17 SDGs and their 169 targets (UN, 2019a). Based on this indicator framework, the UN offers historical and current data on the SDGs, mostly based on reports from countries or international organizations (UN, 2020). It also provides disaggregated data, for example on gender, age group, rural–urban, cities, sectors, or products, to monitor the key principle of the 2030 Agenda to 'leave no one behind'.

Table 3.1. Indicator frameworks to monitor progress on the Sustainable Development Goals

Parameters and databases	UN (2020)	World Bank (2020)	Bertelsmann Stiftung & Sustainable Development Solutions Network (Sachs et al., 2020)
Countries and areas	258	215	193
Time period	1967-2019	1990-2019	2000-2020
Unique indicators	192	-	114***
Unique series codes*	432	367	-
Disaggregation level**	29	9	-
Covered targets	136	75	-

* Series code is a technical abbreviation for indicators for the SDGs, further fragmented into individual indicators without duplications across targets. ** Disaggregation level refers to country-disaggregated data in terms of demographic factors (such as gender, age, urban and rural population), which is required to monitor the pledge of the 2030 Agenda to 'leave no one behind', and in terms of non-demographic factors (such as cities, type of product, or type of sector). *** 85 global indicators and 29 OECD-only indicators.

For the second set, the World Bank has extracted indicators from the World Development Indicators and reorganized them according to the SDGs and targets (World Bank, 2020). These indicators help monitor the goals; however, they do not always match the UN' official indicators (UN, 2020; World Bank, 2020).

A third data set is provided by the Bertelsmann Stiftung and Sustainable Development Solutions Network, which has defined a set of indicators to measure and monitor the SDGs (Sachs et al., 2020). These indicators are mapped to the SDGs but not to their respective targets.

In addition to the global perspective, indicators are also developed to monitor and assess progress on the goals on the regional, national, and local level. Government agencies have proposed indicators to monitor progress on the SDGs at national and local levels based on the Global Indicator Framework. For instance, in support of Germany's Sustainable Development Strategy, Germany's statistical authority has launched a national open online reporting platform that presents time series and metadata in an edited, interactive, and downloadable way (Destatis, 2020). As another case, Nepal has integrated the SDGs into national development frameworks (National Planning Commission, 2017). Besides Voluntary National Reviews and roadmap reports, Nepal provides a platform for the SDGs with data and indicator projections until 2030 (Nepal in Data, 2020). Both local and national governments are committed to reporting their progress towards the SDGs either locally through Voluntary Local Reviews or nationally through Voluntary National Reviews (NGO Federation of Nepal, 2020). These reviews are bottom-up processes based on the participation of stakeholder groups, providing insights into policy developments to achieve the goals. Thus, Voluntary National Reviews are a vehicle to understand the steering effects of the SDGs. Also, some civil society organizations use indicators to hold governments accountable for their goal implementation. The community of civil society 'watchdogs' that use these indicators has been growing slowly. One example is the 2030Watch project, which focuses on high-income countries (Hege & Demailly, 2018). At the local level, the Sustainable Development Solutions Network offers municipal indicators covering, for instance, cities in Bolivia (Andersen et al., 2020), Europe (Lafortune et al., 2019), and the United States (Lynch et al., 2019). These few examples show the diversity of indicator datasets for the SDGs and data development and adaption of the Global Indicator Framework at various levels.

Some stakeholders and scholars creating future scenarios have begun to develop methodologies for summarizing the complex data sets of SDG indicators, for example, by condensing the Global Indicator Framework into fewer numbers (Bidarbakhtnia, 2020) or by creating an SDGs index. Several studies have also tried to understand the interactions among goals and targets at global, regional, and national scales based on such

indicators and indices. These studies used statistical techniques to quantify correlations between two or more variables (Pradhan et al., 2017), to reduce complexity through factor analysis constructing composite indices of the SDGs (Shaker, 2018), to identify inconsistencies and measure progress through Confirmatory and Explanatory Factor Analyses (Spaiser et al., 2017) or to understand relationships between goals through Granger causality, that is, a prediction-based statistical causality concept (Apergis et al., 2018; Dörgő et al., 2018). However, the availability of data, the assumption of linearity in many techniques, and confounding variables in the bivariate analysis limit this type of analyses (Kroll et al., 2019; Pradhan et al., 2017; Putra et al., 2020; Spaiser et al., 2017). Finally, many examples in this section have also created tools to access information to strengthen the interface to decision-makers.

While the implementation of the SDGs started in 2015, data availability and quality of indicators at global, regional, national, and local scales are still limited. First, we lack data for several of the 169 targets, see table 3.1. Data coverage varies across countries and domains. Second, not all global indicators can be applied to all countries. Third, there is sometimes a mismatch between data types and scales for the same indicator (Kraak et al., 2018). Fourth, disaggregated data often still lack consistency.

Importantly, the COVID-19 pandemic has radically altered the economic, social, and environmental realities. The pandemic has negatively affected many SDGs, even though it might have also given a narrow window of opportunity for sustainable transformation (Pradhan et al., 2021). As a result, the basis on which the indicators for the SDGs were built in 2015 has shifted (Naidoo & Fisher, 2020; Nature Editorial, 2020). A Nature Editorial (2020) thus called for a revision of the Global Indicator Framework. In such a revision, the limits of the indicator framework should also be addressed, with a priority for transformative recovery after the pandemic.

3.3.2. Model-based scenario approaches

Model-based scenario approaches are another method to study the steering effects in terms of progress towards the goals. Model-based approaches can describe the relations between societal trends and the SDGs. They can help understand trends retrospectively but also be used for future projections. Such projections can look at current trends and policies or what policies and measures would be needed to achieve the SDGs. Models may have different purposes, such as exploring different futures, supporting decision-making under uncertainty, social learning, and developing system understanding and experimentation (Kelly et al., 2013). Different types of models have been applied studying the SDGs, from economic models such as general equilibrium models and (macro-) econometric models to multi-regional input–output models, system dynamics models, agent-based models and integrated assessment models (Allen et al., 2016; Bennich et

al., 2020). Many of these models can help investigate the multiple dimensions of the SDGs, assess the strategies to achieve multiple goals simultaneously (van Soest et al., 2019), and to explore potential future changes.

Several studies have used models to investigate sets of SDGs, for instance the impact of climate, biodiversity and land-use policies and their interrelations (Collste et al., 2017; Humpenöder et al., 2018; Obersteiner et al., 2016; Popp et al., 2011; van Vuuren et al., 2015). One example is the Roads from Rio+20 study, which looked at a subset of the SDGs (PBL, 2012). The study presented three pathways for achieving development and environmental goals. More recently, *The World in 2050* reports (TWI2050, 2018, 2019, 2020) have used multiple models to identify ambitious scenarios and their characteristics. Another approach is to translate the SDGs to a target space to test how a normative multidimensional objective can be met through different pathways, for example in van Vuuren and others (van Vuuren et al., 2022), who use a limited set of indicators representative of the SDGs to make the targets more concrete and manageable.

Models can also be used for assessing how a specific policy goal may affect different SDGs. For example, several studies examined the impacts of increased use of biomass for modern energy and material purposes on the SDGs (Cavalett & Cherubini, 2018; Humpenöder et al., 2018; Wicke et al., 2022). They show how synergies and trade-offs can occur and how socio-economic factors or policy measures can help minimize trade-offs and boost synergies. These studies focus more on the environmental dimension than on other sustainability dimensions. This gap is a general challenge for integrated assessment models, when economic and social dimensions are less well covered (Allen et al., 2016; van Soest et al., 2019; Zimm et al., 2018). Figure 3.1 compares the importance of linkages between goals according to experts and the degree to which they are covered in models; it shows the strong coverage of models of economic growth, climate change, energy, and consumption and productions, but less so on education, gender equality, health, peace and justice and governance. Still, there is some progress on covering inequality, poverty and living standards (Kikstra et al., 2021; Rao et al., 2019).

The strengths of integrated assessment models and their scenarios are their projection ability, offering a consistent set of information between now and 2030 that allows to assess interactions between goals. However, the models themselves are complex and require many assumptions.

Many gaps also need to be closed by better covering the different dimensions of the goals in such models, such as human development and governance (O'Neill et al., 2020; van Soest et al., 2019; Zimm et al., 2018). Integrating approaches from the social sciences and scenario modelling is necessary to better model the SDGs. Also, the level of

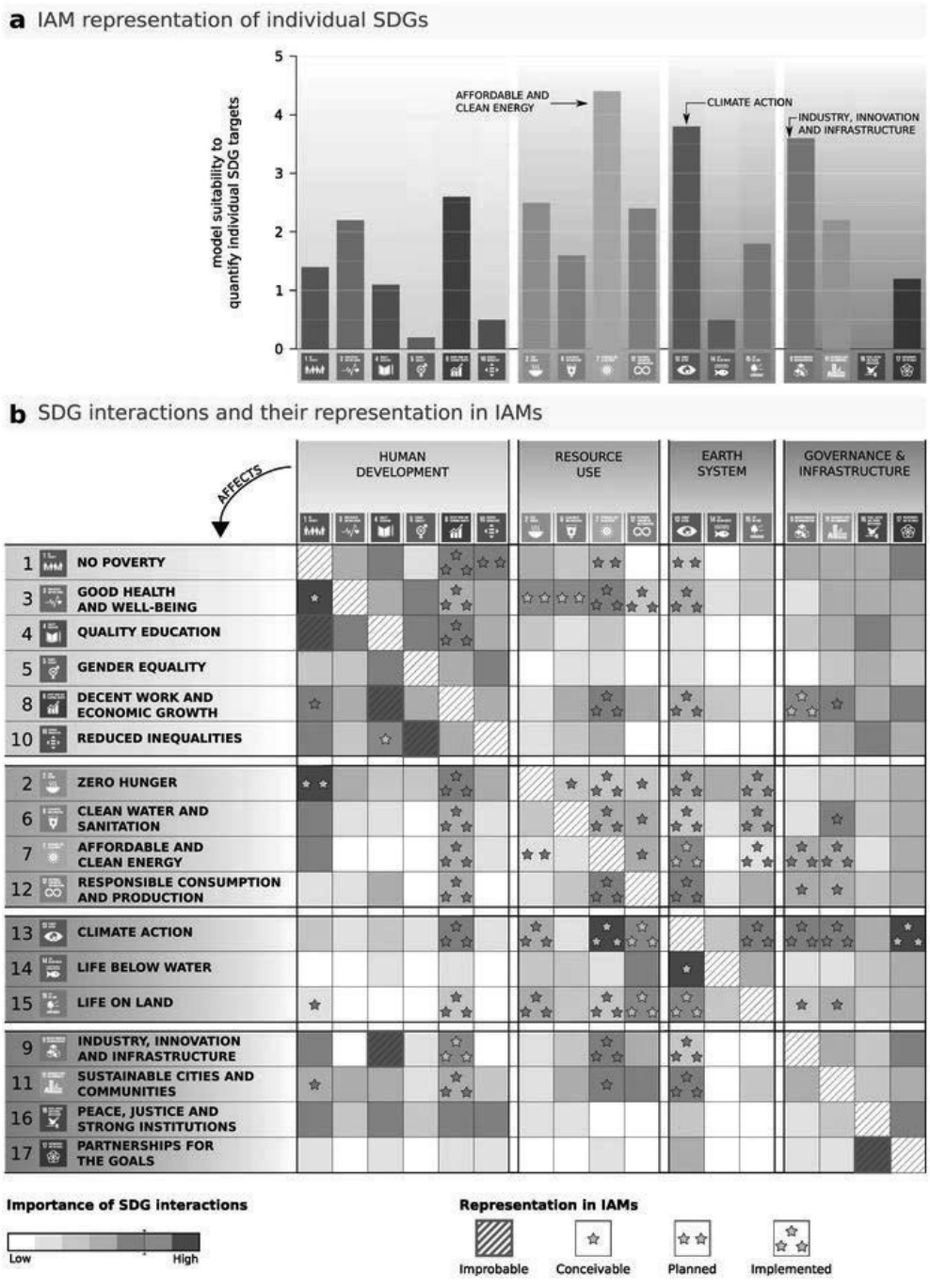


Figure 3.1. Sustainable Development Goals in integrated assessment models
The representation of the SDGs as (a) stand-alone goals; and (b) as interacting goals by integrated assessment models. Image source: van Soest et al. 2019.

granularity in terms of space and time and socio-economic heterogeneity of population groups is often insufficient to meet real-world challenges, and models struggle with potential disruptions and non-linear changes.

Full coverage of all interactions is impossible also owing to a lack of quantitative data. Sometimes, scenario narratives can help to provide consistency between model assumptions. Researchers have tried to make their models more accessible, transparent, and replicable to facilitate uptake of the scenarios runs by different disciplines, for example in the Integrated Assessment Modelling Consortium initiative IAMC 1.5^{0}C Scenario Explorer (Huppmann et al., 2018).

Promising areas for future development are the better representation of indicators to track progress and of interactions between goals to assess trickle-down effects of policies. For the latter, closer collaboration between scientists who work with other methods would be necessary. Such collaboration would also help in assessing scenario feasibility and developing scenarios that achieve multiple goals simultaneously.

3.3.3. Qualitative case studies

Qualitative case studies assess the steering effects in terms of the goals' influence on decision-making and political discourses. This approach is widely used across the social sciences. A qualitative case study has been defined as "the intensive study of a particular case where the purpose of that study is – at least in part – to shed light on a larger class of cases" (Gerring, 2007: 20). Qualitative case studies on the steering effects of the SDGs look in detail at governance structures and policy processes to trace political changes in a specific jurisdiction and a particular period. In other words, with qualitative case studies, we can focus on the in-depth investigation of the implications of the adoption of the goals for an actor or institution, such as a country, city, business, or civil society organization. In particular, qualitative case studies may also be used to study institutional and policy integration (see sections 4.2.1. and 4.3).

Numerous qualitative case studies are available on steering effects of the goals on political processes at global, national, and local levels. Some case studies examine the implementation of one or several goals in a country or region. Others take a broader perspective and explore the influence of several or all 17 goals on the behavior of actors. Typical examples of qualitative case studies include empirical investigations of how the SDGs lead to changes in the institutional settings and policy landscape in countries (Breuer & Spring, 2020; Forestier & Kim, 2020; Horn & Grugel, 2018; Tosun & Leininger, 2017); assessments of how the goals are locally implemented (Hickmann, 2021; Krellenberg et al., 2019) or evaluations of the emergence of public and private alliances and collaborations to attain the goals (Florini & Pauli, 2018).

The main purpose of these case studies is to offer a detailed description and find crucial patterns of the case, using a particular analytical lens and theoretical concept. Scholars building on the qualitative case study method usually conduct content analyses of primary and secondary sources, undertake interviews or surveys, and sometimes engage in participatory observation such as at negotiations or in government agencies. By comparing cases, scholars zoom in on possible explanatory variables for implementing the SDGs, such as political leadership, congruence of stakeholder interests or pressure from civil society. In this way, scholars try to draw broader conclusions beyond the cases to find general enabling and constraining conditions for implementing the goals.

The case study method has several strengths. First, it is a good method to critically reflect and evaluate conceptual approaches (Van Evera, 1997: 55-67), which contributes to the broader theoretical debate on the effectiveness of global goal setting (Kanie & Biermann, 2017). Second, the case study method allows researchers to emphasize "substantively important cases" (Mahoney & Goertz, 2006: 242). While in quantitative studies, each case is equally important, researchers who use a case study approach often compare cases with diverse performance towards the SDGs. In this way, scholars can carve out key factors for the success or failure of governance interventions. Such selection strategies are based on prior knowledge about the relevant actors and institutions that deal with the SDGs. Third, a qualitative case study can also address broad research questions (Creswell, 2009: 141). Compared to other methods that concentrate on specific issues and questions, qualitative case studies often start with broad questions about the wider impact of the goals. In addition, qualitative case studies look at the interlinkages of the goals and targets. A growing literature on nexus governance explores the overlap of institutions in interrelated policy domains. Scholars in this case use the SDGs as a point of reference and evaluate to what extent the integration of institutional responses leads to goal achievement (Hülsmann & Ardakanian, 2018; Schwindenhammer & Gonglach, 2021; van Zanten & van Tulder, 2021).

However, the case study method also has limitations. One problem is internal validity. Case study researchers exploring the steering effects of the SDGs cannot easily control the effect of alternative factors. For example, if a country has made progress on sustainability, this progress can either be owing to the adoption of the SDGs or to other developments, such as economic growth or broadening of social welfare. Scholars building on the case study method must try to control other factors and conditions to counter critiques that their findings are indeterminate (Collier et al., 2010: 47). A second problem of the case study method is external validity. Qualitative scholars analyze either a single or a few cases of the steering effects of the SDGs. Hence, to arrive at general claims that can be applied to other countries, cities or the corporate sector and civil society, qualitative case study researchers must generalize to a larger group of cases, which brings the

danger that findings from one case do not apply to others (Lieberson, 1991; Munck, 2005).

Many scholars use the case study method to analyze the steering effects of SDGs. Qualitative case studies allow for an in-depth examination of the changes generated by the goals on specific institutions, policies, political programs, or implementation processes. The strength of the case study method is that it helps to evaluate theoretical approaches, focus on detailed empirical phenomena, and address broader research questions. However, internal and external validity are two shortcomings of this method. Researchers must thus apply the case study method with great care to minimize these limitations and maximize the strengths of this research. When acknowledging such limitations and strengths, qualitative case studies can produce in-depth empirical knowledge on the steering effects of goals on local or global policymaking, helping to identify enabling and constraining factors for the implementation of the goals.

3.3.4. Network analysis

Network analysis is a method to assess the steering effects in terms of the goals' influence on decision-making and political courses. Network analysis studies relations between entities. These entities are conceptualized as nodes of a network, and the relationships between them as 'ties' or 'edges.' The relational pattern arising from these nodes and ties then forms the network. In principle, nodes and ties can be anything: the researcher defines what is of interest and, by extension, what the network is (Borgatti & Halgin, 2011).

The main purpose of network analysis is to characterize networks as a whole or show the position of specific nodes in a network. Such analysis is valuable on its own and can be useful to find the most central actors in a field, for example in the international health aid community (Coscia et al., 2018). In addition, these characteristics of networks and nodes may serve as independent or dependent variables for further analysis (Borgatti & Halgin, 2011). For example, one can study whether human rights organizations that take up a central position in their network have a higher advocacy output (Murdie, 2014); or how different network structures relate to coordination in agricultural development policy networks (Rudnick et al., 2019).

Network analysis is applied in research on SDGs in two main ways.

First, it is used to assess interactions among goals and targets, which is essential for goal achievement but does not measure it directly. Instead, it can itself be seen as a steering effect of the goals that can be assessed by identifying interactions in different periods. For example, Kroll, Warchold and Pradhan (2019) highlighted successful transformations

of trade-offs into synergies for some SDGs, which occurred between 2010 and 2016. Network analysis provides here insights into how goals and targets relate to each other and how interventions on one target can positively (synergies) or negatively (trade-offs) impact other targets. This analysis helps to find targets that are leverage points to intervene or hurdles in achieving the goals. Interactions between goals and targets have been conceptualized in different ways, including textual references (Le Blanc, 2015), expert rating (Allen et al., 2019; Lusseau & Mancini, 2019; Nilsson et al., 2016; Putra et al., 2020; Weitz et al., 2018), indicator data combined with literature reviews (Zhou & Moinuddin, 2017) and expert knowledge (Anderson et al., 2022), or bibliometric data of academic publications (Ramirez et al., 2019). I further discuss such studies in chapter 7.

A second application of network analysis is to study the social networks of actors involved in the governance of the goals. To achieve the SDGs, a collective effort of a vast number of actors is required, including states and local governments, international organizations, non-governmental organizations, civil society, and business (Kanie & Biermann, 2017; UN, 2015). All these actors must coordinate and collaborate, and these interactions build up extensive global governance networks in which decision-making takes place (Eilstrup-Sangiovanni, 2016). Network analysis allows the analysis of these governance networks. For example, one can ask which actors take up the central coordinating positions in water governance networks (Angst et al., 2018); how civil society networks engage with the Southern African Development Community in regional governance (Hulse et al., 2018); whether reciprocity is an influencer of networking patterns among international development organizations (Atouba & Shumate, 2010); or which international public administration has most online authority in global climate policy (Goritz et al., 2020). This application of network analysis is also applicable to study institutional integration (see section 4.2.2). I apply this specific method in the empirical work of chapter 5.

The main strength of network analysis is its focus on relations. The method builds on the assumption that the nodes in a network are not independent. Instead, nodes influence and are influenced by each other, not only as defined by their direct ties but also by nodes with which they connect through other nodes (Wasserman & Faust, 1994). Thus, a network can constrain or enable each node. Studying the nodes as separate units will thus neither lead to a complete understanding of their functioning, behavior, or state nor an understanding of the entire network. In a world where global challenges and the actors dealing with them are increasingly interconnected, network analysis thus provides a valuable method to conceptualize, visualize and analyze those connected challenges and actors.

There are also difficulties. First, relational data is usually not readily available; obtaining it is often laborious, especially if one wants to assess changing networks over time (see also section 4.2.2). Moreover, network analysis is sensitive to missing data. If one of the critical nodes is missing, this may affect the entire network structure. Moreover, while network analysis can provide insights on the 'bigger picture' of relations in a system, it often falls short in providing details on the quality or strength of those relations.

Future network analysis applications for the study of the SDGs will most certainly involve more studies on goal interlinkages. Here, research on interlinkages at the local level will be significant, as relations between targets may differ based on localized context (Breuer, Janetschek, et al., 2019) . In addition, the study of the structure, effects, and effectiveness of (global) governance networks will remain important as institutions and actors are connected across the world. An understudied area here is how the SDGs themselves affect these networks. Given the emphasis of the goals on collaborative efforts and increased vertical and horizontal coordination ('breaking down silos'), an important question is whether the SDGs are indeed changing governance or collaboration networks in any way (see section 1.4.2). Chapter 5 of this thesis provides an empirical study on this question. As other examples, one could ask whether there is increased collaboration between public and private actors, organizations working in different areas, national and local government, or cities globally. Answering such questions is critical to determine whether and to what extent the SDGs change actor relations and drive new partnerships for joint goal implementation.

3.3.5. Discourse analysis and interpretative approaches

Discourse analysis and interpretative approaches address the steering effects in terms of the goals' influence on decision-making and political courses. Discourse analysis is a method to study written, spoken or sign language to understand and unravel how ideas, concepts, opinions, and norms become plausible social contexts (Cummings et al., 2018; Wodak & Meyer, 2001). Discourse is understood as the "shared meaning of a phenomenon" (Adger et al., 2001: 683) that results from using a collection of ideas, concepts, and categories (Hajer & Versteeg: 175). Discourse analysis may also be used to study institutional and policy integration (see section 4.2.1. and 4.3). In chapter 8, discourse analysis is applied to an empirical case.

The literature sometimes differentiates between 'noncritical' and 'critical' discourse analysis (Wodak & Meyer, 2001). While noncritical discourse analysis describes the formal characteristics of a text, critical discourse analysis seeks to analyze the 'opaque as well as transparent structural relations of dominance, discrimination, power and control as manifested in language' (Gee, 2011; van Dijk, 2001; Wodak & Meyer, 2001: 2). To achieve that, critical discourse analysis looks at the 'words-in-use' and the 'words-in-context' in

their broader socio-cultural practice, in addition to the discourse practice (I. Fairclough & Fairclough, 2013; N. Fairclough, 1995). In the following discussion, we draw specifically on critical discourse analysis, as it is the type of discourse analysis that best allows understanding progress in implementing the SDGs and what may be halting it.

Research employing critical discourse analysis in the context of the SDGs highlights that the goals are not necessarily transformative. Carant (2017), for instance, analyzes the dominant and peripheral feminist discourses within the SDGs. She finds that some criticisms of liberal feminists (that is, feminists generally agreeing with the assumptions and solutions of liberal economic theories) concerning sexual and reproductive rights, human trafficking and a focus on women were incorporated in the SDGs. However, more transformative discourses of the 'reinvention of democracy' – that is, new ways of decision-making not limited to, or imposed by, the interests of powerful economic, patriarchal, and political figures and nations – are seen as still lacking.

Similarly, Cummings and others (2018) examine the discourses of knowledge of the main policy document of the negotiations of the 2030 Agenda. They conclude that a techno–scientific–economic discourse is dominant at the level of goal implementation, thus excluding more transformational discourses. Cummings, Seferiadis and de Haan (2019) take a genealogical approach to examine the presence of four discourses about the corporate sector in key texts of the Millennium Development Goals and the SDGs. They find that a pro-business discourse with unconditional support for the corporate sector is dominant within both sets of goals, but especially in the SDGs, reflecting the role of the corporate sector in their formulation. Ala-Uddin (2019) shows that although the 2030 Agenda employs the language of global equality, justice and peace, the means of implementation and the proposed structure of global partnerships contradicts these principles. Similar observations have been made by Biermann and Kalfagianni (2020), who show that despite an overall cosmopolitan vision of justice in the 2030 Agenda, the concrete means of implementation stated there are market-liberal, thus contradicting the aspirations of 'leaving no one behind.'

Critical discourse analysis is a method particularly useful to study processes of inclusion and exclusion, dominance, and marginalization, as these are expressed through language. In the context of the SDGs, this type of analysis allows identifying progress in including aspects previously excluded from global development agendas, such as in the Millennium Development Goals, but also to reveal that this progress remains superficial, as the dominant neoliberal logics prevail in the means of implementation of the SDGs.

There are also limitations regarding the application of this methodology, including the hermeneutic approach to text analysis, which may enter the subjectivities of the

researcher into the analysis, the difficulties involved in distinguishing a discourse from what is not a discourse, as well as difficulties in showing the impact of a discourse on the objects of this discourse. For these reasons, critical discourse analysts argue that this research should be "intelligible in its interpretations and explanations" (Titscher et al., 2000: 164), that the process of collecting, analyzing, and explaining data should be recognizable, and that findings should be accessible and readable for the social groups under investigation (vanDijk, 2006). Triangulation techniques are sometimes used here to enrich trustworthiness in the intersubjective validity of data. This means to make transparent and cross-check the openness and interchange between diverse types of data, interventions by participants and researcher interventions, interpretations, and explanations (N. Fairclough, 1995; vanDijk, 2006; Wodak, 2007).

Future applications of critical discourse analysis for examining the steering effects of the SDGs are likely to expand beyond single goals and focus on their interlinkages. In addition, conflicting discourses and the actors, interests, and power behind them need more attention to better understand the politics and diffusion mechanisms of the goals. Further, research that links discourse with practice is necessary to shed light on how the norms and ideas behind the goals are translated into their implementation.

3.4. Other methods and tools

There are many other methods in addition to the ones that we have just described; we now discuss some of these, without being able to be comprehensive.

Participatory research seeks to co-create knowledge with research participants by sharing the design of the research agenda, process, and actions. Participatory research entails action in that the participants are not only engaged in the scientific inquiry but also in thinking of and implementing solutions for the problem at hand. In research on the SDGs, examples of the application of this method include the co-creation of pathways and knowledge for goal implementation at the local level (Lepore et al., 2021; Szetey et al., 2021), as well as the development of participatory methods to study the SDGs in academic curricula (Trott et al., 2018).

Besides the modelling approaches for projecting future developments addressed earlier, other quantitative and qualitative forecasting and foresight methods are used. Trend analysis is one of the quantitative forecasting methods used to assess whether progress in achieving the goals is enough to meet the 2030 Agenda. Various tools such as the SDG Atlas (https://datatopics.worldbank.org/sdgatlas/) and SDG Dashboard (https://dashboards.sdgindex.org/) include results from trend analysis, highlighting

that many countries are not on track in attaining the SDGs (Sachs et al., 2020; UN, 2020). Qualitative foresight methods aim to anticipate multiple possible futures, to develop desired visions for sustainable futures or to define concrete steps for achieving a specific, selected envisioned future; this is often done in a participatory manner, engaging different stakeholders and working with different levels of participation (van den Ende et al., 2021).

Another example is computational text analysis or quantitative content analysis to identify how written or spoken text relates to the SDGs. Analysis methods include dictionary methods (keyword searches) and machine learning algorithms to classify large sets of texts to the SDGs. In some cases, researchers are interested in whether the goals and their targets are mentioned in the text, such as investigating cherry-picking of the SDGs (Forestier & Kim, 2020). It is often of interest whether and to what extent the topics embedded in the SDGs are addressed in large bodies of text. Recent work in this area includes classifying publications of the UN Department of Economic and Social Affairs to the SDGs (LaFleur, 2019), mapping the EU Recovery Plan to the SDGs (Borchardt et al., 2020), identifying whether start-ups contribute to the SDGs (Horne et al., 2020) and assessing how the UN General Assembly resolutions mention the SDGs (N. Kim & LaFleur, 2020). Text analysis is further discussed in sections 4.3.1. and 4.5.5., and is empirically applied in chapters 6 and 7.

Besides these methods for scientific research, online tools have been developed to make the study of and support of decision-making on the SDGs more accessible to non-scientific audiences. For example, tools such as the SDG Tracker (https://sdg-tracker.org), the World Bank SDG dashboard (https://datatopics.worldbank.org/sdgs), and the SDG dashboards of the Sustainable Development Solutions Network (https://dashboards.sdgindex.org) present available data on indicators in an interactive manner so that process made on achieving the goals can be tracked openly. Additional to tracking the process, there are tools to understand goal interactions and interlinkages. For example, the SDG Synergies tool (https://www.sdgsynergies.org) focuses on interactions and interlinkages based on expert opinions and network analysis (Nilsson et al., 2016; Weitz et al., 2018); the SDG Impact Assessment Tool (https://sdgimpactassessmenttool.org) elicits the knowledge of users to qualify impacts and interactions (Johnsson et al., 2020; Olfe-Kräutlein, 2020). Increasingly, commercial tools have also been developed for corporations to align their activities to achieving the SDGs. For example, the SDG Compass (https://sdgcompass.org) aims at instructing companies on, among other things, how to monitor and manage working towards achieving the SDGs. The Sustain2030 tool (https://icondu.de/sustain2030/en/) helps the private sector to make sustainable decisions in line with the SDGs, accounting for interlinkages and interactions. The SDG

Monitor (https://www.sdgmonitor.co/) supports private sector activities to be paired with the SDGs by assessing their impact based on a sustainability index.

3.5. Conclusions and future directions

The steering effects of the SDGs can be assessed in terms of their influence on political decision-making and discourse, on the one hand, and on the progress towards achieving the goals on the other. The usefulness of methods to study these aspects depends on the question at hand. The strength of each method varies across different dimensions, including the main focus, the temporal perspective (retrospective or prospective); geographical scale (from local to global); the coverage of topics and areas (focus on single goals or many); and interactions and interlinkages.

We summarize the main discussion and some of the main characteristics in table 3.2. Interactions and interlinkages have been studied with different methods by different disciplines and scientific communities, which indicates the diversity of perspectives that can be taken and the importance of interactions and interlinkages for achieving the SDGs.

As for the temporal perspective, most methods focus on retrospective analysis, with scenario-based modelling being the only method that allows assessing future scenarios and policy options and their implications for reaching the SDGs. While most methods could be applied from local to global scale, they are typically used on only one or two scales. For example, integrated assessment models are mainly used at the global level, and monitoring approaches at national and local levels.

Regarding coverage, some methods address all goals (for example, the SDG Index and the Global Indicator Framework for SDGs), while others are mainly used for specific groups of goals, for example in some integrated assessment models (Allen et al., 2016; van Soest et al., 2019), or for only one goal (Akuraju et al., 2020). Such cherry-picking of goals, however, cannot reflect the holistic and integrative nature of the 2030 Agenda. The SDGs are a system of interacting components, not a collection of goals, targets and indicators (Pradhan, 2019). Covering more goals is therefore important in future research.

The implementation of the SDGs can bring synergies as well as trade-offs. Sufficient understanding of how interactions within and across the goals unfold is crucial for achieving the goals, because synergies can leverage the achievement of the 2030 Agenda while trade-offs can make it impossible. Such trade-offs hence need to be tackled and

Table 3.2. Overview of methods to analyze the steering effects of global goals

Method	Monitoring approaches	Model-based scenario approaches	Qualitative case studies	Identification of interactions	Governance networks	Discourse analysis and interpretative approaches
Elements of effect*	Monitor progress	Monitor progress	Impact on discourse & decision-making	Not applicable****	Impact on discourse & decision-making	Impact on discourse & decision-making
Purpose method	Monitor progress towards goal achievement over time or compare countries	Assess implications of policies; Explore possible futures & their progress; Identify preconditions for maximizing benefits and minimizing burdens	Investigate steering effects on political processes, including institutional settings, policy-making and implementation; Primarily looking at how goals affect actors and institutions	Assess interactions between goals and targets	Assess social networks of actors involved in governance of sustainable development	Assess progress and barriers to implementation of the SDGs
Temporal scale	Retrospective	Mainly prospective	Retrospective	Retrospective	Retrospective	Retrospective
Geographical scale**	Local to national resolution; comparison across countries globally	Local to global; spatially specific or administrative units such as country or world regions	Local to global	Most often, global or national	Most often, global or regional	Local to global
Coverage***	Comprehensive	Multiple goals	Single goal to comprehensive	Two or more targets or goals	Single to multiple goals	Single to comprehensive

Table 3.2. Overview of methods to analyze the steering effects of global goals *(continued)*

Method	Monitoring approaches	Model-based scenario approaches	Qualitative case studies	Identification of interactions	Governance networks	Discourse analysis and interpretative approaches
Interlinkages	Broad understanding of how interactions unfolded in the past	Knowledge of the impacts of future interventions across several goals	Some case studies look at interlinkages of goals and targets	Understanding of how targets or goals relate to each other and what is key for intervention	Not addressed	Not addressed in the examined literature; a potential topic of future research
Illustrative example	UN (2020), World Bank (2020), Pradhan et al. (2017)	Allen et al. (2019), van Soest et al. (2019), Collste, Pedercini and Cornell (2017)	Horn and Grugel (2018), Breuer and Oswald Spring (2020)	Lusseau and Mancini (2019), Weitz et al. (2018)	Goritz et al. (2020), Hulse et al. (2018)	Carant (2017), Cummings et al. (2019), Ala-Uddin (2019)

* We define two elements of steering effects in this chapter: first, methods that assess how the SDGs affect policy-making and political discourse at local to global scales, including examining the development of policy tools or assessing the degree to which people have internalized SDGs in their decision-making (abbreviated here as 'impact on discourse & decision-making'), and second, progress towards the actual achievement of the SDGs, or the lack thereof (abbreviated here as 'monitor progress'). ** Local includes not only municipality level but also companies. *** Coverage of topics and issues is classified as focus on single goals or sustainability topic being investigated; multiple goals or topics; comprehensive goal coverage or sustainability topics. **** Understanding interactions is essential for goal achievement but does not measure it directly. Instead, it can itself be considered a steering effect (see also section 3.3.4).

made at least non-obstructive, so that progress on one goal or target does not hinder progress on another. Both quantitative and qualitative methods are therefore needed to understand synergies and trade-offs among goals. When empirical data are available, quantitative methods can generate evidence and understanding of goal interactions. In case of data limitation, qualitative methods can complement this.

Methods are often used in combination with others. For example, expert interviews, participatory research or surveys could offer insights into interlinkages between goals and targets, and these data could then be analyzed through network analysis or applied to specify interlinkages in models. Indicators can assess progress but also to understand how interlinkages, discourse analysis and interviews can feed into qualitative case studies, and so on. This building on to each other of different methods makes the distinction between approaches sometimes hard and even arbitrary. Nevertheless, it is important to look at both elements of steering effects of the SDGs simultaneously.

Looking at the full set of the methods that we assessed, five overarching observations are evident that also point to directions for future research.

Firstly, only studies that combine methods to look at the impact on decision-making and discourse and goal achievement can provide a complete picture. Looking particularly at the two elements of steering effects identified in this chapter, various methods address only one element. However, we need a better understanding of how the influence of goals and targets on political decisions and discourses interacts with progress towards achieving the SDGs. For a comprehensive overview we need to bring together the results of different methods and study the steering effects of global goals in an interdisciplinary manner. Closer cooperation within and between research communities can help close the remaining gaps. For example, while model studies can identify how much air pollutant emissions need to be reduced to meet the air quality guidelines of the World Health Organization, such studies can tell little about how these reductions can be achieved, that is, which actors need to be involved and what legislation is needed. Nor can they identify the role of the SDGs. In other words, interdisciplinary cooperation and mixed methods approaches are needed. Interdisciplinary research brings together different theoretical perspectives in one study and can foster methodological innovation.

Some examples already exist that employ mixed methods to understand the steering effects of the SDGs. For example, network analysis is often employed alongside other methods to quantify relationships between sets of indicators, including statistical techniques (Mainali et al., 2018), expert opinion (Weitz et al., 2018) or text analysis (Le Blanc, 2015). Also, statistical techniques have been integrated with literature reviews and network analysis (Somanje et al., 2020) or in combination with dynamical system

modelling (Spaiser et al., 2017). Finally, also integrated models have been applied in combination with different methods. Collste, Pedercini and Cornell (2017) employed qualitative causal loop diagrams as the basis for developing a systems dynamics model.

Second, a lack of quantitative and qualitative data complicates research on the SDGs, especially with regard to data at local levels, data of low-income countries and data collected and reported in other languages than English. This is not surprising, as data collection is difficult and expensive even for countries with advanced statistical systems (MacFeely, 2018). Notably, data are not systematically collected on policy changes related to the SDGs. Such data are collected only on a case-by-case basis and often in qualitative research. Such research thus remains restricted to the documents studied and to information from people that the research team had access to, which results in biases towards texts in the English language and generally the Global North. While this is problematic in any field, it is more so when researching goals that are be implemented globally.

Third, methods vary in the degree to which they cover the SDGs. Although many methods can address multiple goals, only few can comprehensively address all 17 goals. Given the interconnected nature of goals and targets, increased goal coverage is needed to study the interactions. Qualitative methods such as case studies and discourse analysis can comprehensively address the goals. Of the quantitative methods, only studies using indicators and indices can address all goals, but they are constrained by data availability, as discussed. Other modelling approaches are suited to address multiple goals or targets but cannot cover them comprehensively. These models selectively study specific goals and targets but miss key synergies or trade-offs. However, at the same time, adding the possibility to study more goals in modelling approaches may also not necessarily be suitable or even possible owing to increased complexity or numerical limitations.

Fourth, a critical aspect of the SDGs is their interactions. Accounting for the interactions allows identifying synergy and trade-offs. Some have tried to capture the interlinkages – for instance, in the use of models, but also monitoring approaches or more social science-based methods. However, as shown by van Soest and colleagues (van Soest et al., 2019), the coverage of linkages is still limited and primarily for specific clusters only. In addition, there are interactions across scale: Advancing towards achievement of the SDGs in one locality affects the ability of impact-receiving places to meet their goals (Engström et al., 2021). Addressing spillovers when designing sustainable development actions is imperative to connect the 'global indivisibility' of the agenda with local and national implementation of the SDGs. Recent initiatives to account for spillovers have focused on national indexes, see SDG Index and Dashboards (Sachs et al., 2020). However, indexes and indicators do not provide guidance on the impacts of new actions.

While models describe some of the relationships, model complexity, data demands and computational time, these models may not be suitable for application at the local level (Engström et al., 2019). Another challenge is to analyze which type of institutions and governance mechanisms facilitate the design and implementation of integrated goal achievement. If interlinkages between goals and targets cannot be 'translated' into a tangible policy process, integrated implementation will not be successful.

Fifth, a critical reflection is also needed on how the SDGs are developed and negotiated. Compared to the Millennium Development Goals, more attention was paid to represent perspectives of stakeholders, including scientists, while setting up the SDGs. The set of goals, targets and indicators were negotiated in the UN system through an iterative process considering political preferences, science arguments and data availability. The question arises to what level these SDGs in the end are science-based, or whether they are purely policy targets. Global goals have the potential to steer social, environmental, and economic systems towards desirable directions. Therefore, it is crucial to base these goals on science and evidence. A methodological challenge is then to develop global goals based on science-based targets that also account for sustainable governance of global and local commons to ensure societal well-being and public and planetary health.

In conclusion, no single method can comprehensively study the steering effects of global goals. All methods have strengths and weaknesses and contribute their part to the overall assessment whether we are on track with implementing the SDGs. Only together can the methods yield a clearer picture of reality. To adequately assess and communicate to users whether we are on track in attaining the global goals, we need to further develop our methods but also to better promote the use of this information in the science–policy interface.

Research design, methods, and data

4.1. Introduction

In this chapter, I set out the methods and data used for the four empirical studies conducted in this thesis. As described in section 1.5, one of the aims of this thesis is to explore the usability and (dis)advantages of quantitative methods that are novel to the field. So far, research on the political impact of global goals, and on institutional and policy integration, has relied heavily on qualitative methods. Notwithstanding the importance of qualitative studies, the field stands to benefit from expanding to new methods and data sources, see also chapter 3. Yet, one of the key issues in research on institutional and policy integration a lack of available data. In this thesis, I use the vast amount of online communication data as an opportunity for exploring novel data sources and methods to investigate the effects of the SDGs on international organizations. Over the past years, online communication has vastly increased, also by international organizations and on the SDGs (Ecker-Ehrhardt, 2018a, 2021). I rely on two online communication forms as data sources: websites and Twitter. I combine this with data sources and methods more conventional to the field, including manual data collection and coding, document analysis, and regression analysis.

In the rest of this chapter, I first describe how the concepts of institutional and policy integration can be operationalized and measured, and how I do so in this thesis. Then, I describe which different data sources I have used, providing a brief overview of key considerations for each source. Finally, I describe the data collection and pre-processing steps that I conducted.

4.2. Measuring institutional integration

There is no agreed upon way to conceptualize or measure institutional integration. Different studies have used different operationalizations. Some studies focus on the quantity of relationships between actors, others on specific qualities of relationships, and again others on a combination (F. Biermann et al., 2020; Steinwand, 2015; Zelli & van Asselt, 2013; Zürn & Faude, 2013). In empirical studies, scholars have had different foci in terms of geographical area, policy domain, and type of actors assessed, and have used a range of quantitative and qualitative methods (Heidingsfelder & Beckmann, 2020; Pattberg, 2013). Qualitative case studies are a common approach to research institutional integration, allowing for in-depth understanding of the quality of interinstitutional relations (see also section 3.3.3). Such studies often rely on qualitative content analysis of policy and organization documents to investigate the inter-institutional relations (see next section). In qualitative studies, scholars have used different conceptualizations and operationalizations of institutional integration (F. Biermann et al., 2020). While these dif-

ferent conceptualizations and operationalizations used are not necessarily at odds with each other, the varied and dispersed literature makes it difficult to compare across studies. Yet, as fragmentation is inherently a relative concept, it is exactly the comparison of fragmentation – across governance systems, policy domains, time, or geographical areas – that is necessary to gain a better empirical and theoretical understanding of the concept (R. E. Kim, 2020). Here, network analysis provides an opportunity.

4.2.1. Qualitative content analysis as method

Qualitative content analysis is a method to identify concepts of research interest from, among others, written text (Ercan & Marsh, 2016; see also section 3.3.3). For studies on institutional integration, this method can be used to identify actors and institutions in a specific field, and to infer relationships between different actors and institutions. These relations can be based on textual references to any form of interaction between the actors, institutions, or a mix thereof. This has been done for example in the areas of global energy governance (van de Graaf, 2013), global forest governance (Fernández-Blanco et al., 2019), and climate adaptation governance (Brown et al., 2010). In chapter 8, I use qualitative content analysis to investigate the integration of the SDGs into the novel global biodiversity framework, and how this relates to institutional integration.

4.2.2. Network analysis as method

Recently, network science has gained traction as an approach to allow for the comparable characterization of – amongst others – fragmentation in governance systems (Hafner-Burton et al., 2009; R. E. Kim, 2020; see also section 3.3.4). While network science can serve as a framework to look at governance systems both conceptually (network theory) and methodologically (network analysis), I focus here on the latter. In the context of studying governance at the international level, the nodes of the network can be nation states (Beckfield, 2010; Pauls & Cranmer, 2017; Sopranzetti, 2018), multilateral or bilateral treaties (R. E. Kim, 2013; Pauwelyn, 2014; Saban et al., 2010), international development and aid organizations (Atouba & Shumate, 2010, 2015; Coscia et al., 2013), a mix of actors (Angst, 2018; Rudnick et al., 2019; Stein et al., 2011), and more. Also, international organizations have been the nodes in the analysis of governance networks (Beckfield, 2008; Gest & Grigorescu, 2010; Greenhill & Lupu, 2017). The ties in governance networks can constructed by co-membership in treaties and organizations (Beckfield, 2008; Greenhill & Lupu, 2017; Sopranzetti, 2018), self-reported relationships (Gest & Grigorescu, 2010; Rudnick et al., 2019; Wilson et al., 2016), co-mentions in text (Coscia et al., 2018), citations (R. E. Kim, 2013), hyperlinks (Shumate, 2012; Shumate & Lipp, 2008), and more.

A range of network analysis measures exist to characterize the overall structure of networks. Many of these measures are well-established in the social sciences and can

be adequately used to characterize governance networks as well. This provides opportunities for the comparable assessment of institutional integration. Several network measures can and have been used to assess integration in governance networks. Kim (2020) proposed the combination of five network measures to assess integration: density, centralization, average path length, the fraction of the giant component and modularity. Complementing these five measures, I add here the fraction of isolates. What each of these measures reflect is shortly explained in table 4.1.

As described in section 3.3.4., one of the main hurdles to network analysis in investigating governance networks for the SDGs is a lack of data to construct the networks with. Data is scarce, especially over time and across issue areas (R. E. Kim, 2020). Some of the current datasets focus on specific issue areas such as the environment (R. B. Mitchell et al., 2020) or trade (Milewicz et al., 2018), and rely on labor-intensive data collection efforts. Others are extensive and provide rich data, yet do not provide insights into how the data was collected or transformed, and are only available at significant cost (UIA, 2023).

Networks based on website data, or hyperlink networks, are one alternative that overcome some of these hurdles (R. E. Kim, 2020; Shumate & De Witt, 2008; Shumate & Lipp, 2008). Websites are available for a range of organizations and institutions, across sectors and across countries. The hyperlink networks that can be constructed from website data can be used a proxy to study governance networks. Like document citations, hyperlinks are created consciously and selectively (De Mayer, 2013; Pilny & Shumate, 2012). Hyperlinks establish a connection between one website and another, and – by extension – are a form of interaction between one organization and another. This interaction can be a mere referral to information by citing a source, or it can be indicative of an extensive partnership. Thus, while the nature and strength of a connection between two governance actors is not revealed by a hyperlink, hyperlinks do signify one actor or institution giving visibility and relevance to another, thereby reflecting trust, authority, or legitimacy (De Mayer, 2013; Häussler et al., 2017; Nam et al., 2014; Park, 2003; Pilny & Shumate, 2012). Previous studies have shown high similarity between hyperlink networks and networks based on registered partnerships, research-collaborations, media-mentions, and self-reported relations (Hayes & Scott, 2018; Maggioni & Uberti, 2009; Yi & Scholz, 2016). As such, hyperlink networks have been established as a proxy for observing the underlying relations between organizations (Hayes & Scott, 2018; Nam et al., 2014; Park, 2003; Yi & Scholz, 2016). Also, in the field of global governance, websites and hyperlinks have been used to map international institutions in the areas of health, energy and water (Atouba & Shumate, 2010; P. B. Lang et al., 2013; McNutt & Pal, 2011; Shumate, 2012; Widerberg, 2016). In chapter 5, I use hyperlink network analysis to analyze institutional integration in the network of international organizations.

Table 4.1. Overview of network measures to measure institutional integration

Network measure	Description	Value in integrated system
Density	Density measures the number of ties in a network, as proportion of the possible number of ties that could theoretically exist in the network if all nodes were connected. It thus says something about the overall connectivity in a network, and the overall propensity of actors to collaborate.	High
Centralization	Centralization reflects the extent to which the network has one key nodes to which most other nodes connect. If centralization is high, this is indicative of a central authority existing in the network. Conversely, if centralization is low, there is a lack of a central authority. In this case, there are multiple nodes that form 'local' authorities in the network.	High
Average path length	The average path length measures how many 'steps' between connected nodes must be taken to get from any one node to any other node in the network. It reflects the relative ease with which nodes can reach nodes with whom they do not have a direct tie. In a network with a low average path length, nodes are close to one another on average, benefiting overall connectivity.	Low
Modularity	Modularity reflects the existence of highly connected clusters *within* the network as a whole. Such clusters consist of nodes that have more ties with one another than with nodes outside their cluster. The existence of such subclusters is indicative of lower integration.	Low
Fraction of giant component	A component is a group of nodes that are connected to one another through direct or indirect ties. The fraction of the giant component reflects how many nodes, as proportion of all nodes in the network, are part of the largest – the giant – component. In a network that is fully connected, all nodes are part of the giant component and thus the fraction is high. Conversely, in a sparsely connected network, the giant component is smaller.	High
Fraction of isolates	The fraction of isolates reflects the proportion of nodes that is not connected to any other node, referred to as isolates. If few isolates exist, this is indicative of more connectivity in the network and thus of higher integration.	Low

Six network measures are used to operationalize institutional, more specifically structural institutional integration, in network analysis.

4.3. Measuring policy integration

Like institutional integration, policy integration has been studied from different literature streams, often using different terms and different operationalizations. In the context of national governments, policy integration relates closely to the concepts of joined-up government (Bogdanor, 2005) and whole-of-government (Christensen & Lægreid, 2007) approaches. In the context of development aid, the term policy coherence is common (OECD, 2009), which is also the term included in the 2030 Agenda for Sustainable Development (2030 Agenda). At the international level, and especially with a focus on environmental issues, policy integration (Jordan & Lenschow, 2010) and policy mainstreaming (Nunan et al., 2012) are the conventional terms. While these terms may differ slightly in their conceptualization, they all address the same overarching concept: the cross-domain nature of policies. In this thesis I use the term policy integration. To recall, I define policy integration as integrating aims or concerns from one policy domain into another within one organization (see section 1.2.2). One important challenge in research on policy integration is the difficulty of measuring the concept. Empirical studies have mostly relied on qualitative assessments of single policies or countries (Trein et al., 2019; see also section 3.3.3). Generally, the assessment of policy integration relies on texts, which are analyzed by means of qualitative content analysis (Ercan & Marsh, 2016). For example, policy integration has been assessed by qualitatively coding texts for a normative commitment to integration (Schmidt & Fleig, 2018; Tosun & Peters, 2018), or the observation of policy reforms towards integration in policy documents (Trein & Maggetti, 2020).

4.3.1. Quantitative content analysis as method

To date, there have been few large-N studies on policy integration that would allow comparisons across domains, countries, or time. The use of quantitative content analysis – also referred to as automated or quantitative text analysis – seems a promising avenue in this regard (Trein et al., 2020; see also section 3.4). Quantitative content analysis is gaining traction as a novel method to assess policy integration (Azizi et al., 2019; Biesbroek et al., 2020; Duraiappah & Bhardwaj, 2007; Gregorio et al., 2017; Smith et al., 2021; W. Yang et al., 2018). This follows a broader recent trend of quantitative text assessment in political science (Bell & Scott, 2020; Lam et al., 2019; Linder et al., 2020; Wilkerson & Casas, 2017).

Generally, quantitative text analysis studies focus on the co-occurrence of certain topics in texts to infer a relationship between those topics. In the case of policy integration, these topics would be different policy domains or issues, and the texts could come from a variety of sources, including press releases, and policy reports (Borchardt et al., 2020; Tremblay et al., 2021), United Nations (UN) resolutions and reports (N. Kim & LaFleur,

2020; LaFleur, 2019), multilateral agreements (Azizi et al., 2019), or communications (Borchardt et al., 2020; Horne et al., 2020). From these texts, policy domains can be inferred in several ways. There has been considerable progress in topic modelling – the use of algorithms to identify topics from text (Gurciullo & Mikhaylov, 2017; Isoaho et al., 2021). However, for the policy domains as embedded in the SDGs the use of topic modelling has proven difficult due to the overlapping nature of those domains (LaFleur, 2019; Orazbek et al., 2021). Moreover, topic modelling requires high computing power for large datasets. A simpler alternative is the use of dictionary-based approaches, where a dictionary – a list of keywords associated to policy domains – is used to assess which policy domains occur in texts.

4.4. Overview of data sources

I used multiple data sources for this thesis. In the next sections, I give a brief description of each dataset. Thereafter, in section 4.5., I describe the data collection and transformation processes for each of the sources. Table 4.2. gives an overview of how the different data sources and methods relate to the empirical chapters.

Table 4.2. Overview of different data sources and methods

Data source	Chapter 5	Chapter 6	Chapter 7	Chapter 8
Correlates of War dataset	X	X	X	
Yearbook of International Organizations	X	X	X	
Current websites international organizations	X	X	X	X
The Internet Archive – Website hyperlinks	X			
The Internet Archive – Website texts		X	X	
SDG Dictionary		X	X	
CBD documents				X
Twitter				X

Method	Chapter 5	Chapter 6	Chapter 7	Chapter 8
Manual data collection	X	X	X	X
Network analysis	X			
Text analysis		X	X	
Regression analysis		X		
Statistical testing			X	
Discourse analysis – inductive coding				X

For each of the data sources (top part) and methods (bottom part) used in this thesis, it is indicated in which empirical chapter these data sources and methods are used.

4.4.1. Correlates of War

The Correlates of War International Governmental Organizations dataset (version 3) (Pevehouse et al., 2020; Wallace & Singer, 1970) contains an overview of intergovernmental organizations from 1815-2014. The dataset includes only intergovernmental organizations with at least three nation states as members, and that have a permanent secretariat and hold a meeting at least once every four years (Volgy et al., 2008). The dataset provides the full name of intergovernmental organizations and each of their member states. The Correlates of War dataset has been of key importance for large-N studies on international organizations, including on the topic of institutional integration (Beckfield, 2010; Sommerer & Tallberg, 2019; Torfason & Ingram, 2010).

From this dataset, I identified international organizations to include in the set, and collected their membership count, and the members' geographical distribution.

4.4.2. The Internet Archive

Digital media, especially websites, have become a vital form of communication in the 21st century, also in global governance (Adesina, 2017; Ecker-Ehrhardt, 2018a). To promote their activities and mandates more effectively, international organizations too have increased their digital communication efforts (F. Biermann & Siebenhüner, 2009; Ecker-Ehrhardt, 2018b). The content of a website is curated, part of extensive communication strategies, and their creation and management are often overseen by dedicated departments (Ecker-Ehrhardt, 2018a). Websites are reflections of the organizational context in which they are created, providing vital and up-to-date information about an organization's activities (Riffe et al., 2019). Websites are thus a unique source in global governance research and are commonly used as a data source in qualitative research (Georgi & Schatral, 2012; Widerberg & Pattberg, 2015). Websites are a useful source for large-N research, as they are machine-readable and systematically available for a large set of organizations across policy domains and countries. Yet, the systematic assessment of websites has received little attention in global governance research so far. One pitfall of working with website data is that its content is volatile: at any moment in time, an organization can take a web page offline or change it. Websites are thus only available from the live web as they are in the here and now, providing no opportunity for assessment *a posteriori*.

Web archives provide a solution here. To keep a 'library of the internet as it was,' web archives are created using web crawlers that continuously download and save web pages, as they exist in the moment. To briefly explain, a web page is a subunit of a website. For example, www.wassenaar.org is a website, which contains many web pages such as an 'About us' page and a 'Best practices' page. Pages are demarcated as subunits of a website as they have a direct web address, in these examples *www.wassenaar.org/*

about-us and *www.wassenaar.org/best-practices*, respectively. All webpages under the same domain-name, *wassenaar.org/*, together form a website.

The Internet Archive, hosted by a Washington-based non-profit, has been archiving the internet since 1996. It is currently the most comprehensive web archive available with over 700 billion webpages stored and all archived pages are available open access (The Internet Archive, 2023). The Internet Archive provides a unique data source but has so far mainly been used for qualitative studies. Only recently, it has become more accessible for large-N data retrieval (Ben-David, 2016; Ben-David & Huurdeman, 2014).

In using data from the Internet Archive – or any web archive – for research, it must be considered that the number of archived web pages available per organization may differ tremendously, for two reasons. First, there are differences in size between organizations' original websites. For example, the UN' website likely was and is much larger – that is, it has more web pages – than the website of the Afro-Asian Rural Reconstruction Organization, simply because there is more information provided by the UN. Second, there are differences in whether those web pages that existed in the past have been stored in the particular archive. Like a book library not storing all books ever written, the Internet Archive also does not store all web pages that ever existed. Rather, the archiving organization selects which webpages should be archived, often based on a ranking algorithm. The web pages with high visitor numbers, regularly updated content, and many incoming hyperlinks are selected to be archived. Conversely, web pages with few incoming links and few visitors may not be stored at all. There is thus a data availability bias towards more 'popular' websites (Nanni, 2019). Estimates as to what proportion of web pages is stored in the Internet Archive vary from 35 to 90 % (Ainsworth et al., 2011; Russell & Kane, 2008; Thelwall & Vaughan, 2004). For any given set of collected webpages, including those used in this thesis, it is impossible to determine wat proportion of original web pages was saved, as the original websites are simply not available anymore to compare (Brügger, 2013).

From the Internet Archive, I obtained archived webpages of international organizations. From these webpages, I extract hyperlinks, allowing for the *a posteriori* reconstruction of hyperlink networks over time (Brügger, 2013; Stevenson & Ben-David, 2019). With the availability of website data from consecutive years, I use the induced hyperlink networks to assess the evolution of the network of international organizations over time, and to assess any changes in structural and functional integration. This informs the empirical work in chapter 5.

In addition, I extracted the text content of the webpages. I used the website texts and a keyword-based approach, which I describe in section 4.5.5, to assess policy integration

between the 17 issue areas of the SDGs. This informs the empirical work of chapters 6 and 7.

4.4.3. Twitter

The online social networking platform Twitter has rapidly become one of the most popular social media platforms globally. By 2021, over 200 million users were active on the platform daily (Twitter, 2021). Actors in global governance are increasingly active on Twitter too, including heads of state and international organizations (BCW Global, 2020) and Twitter has become a key platform for international political debate (Cooper, 2020; Jungherr, 2014). Consequently, Twitter is an increasingly relevant data source for academics. In global governance, Twitter data has been used to assess the influence of political and governance actors in climate and environment (Baya-Laffite & Pearce, 2016; Goritz et al., 2020, 2021; Kolleck et al., 2017; Reyes-Menendez et al., 2018), education (Schuster et al., 2019), gender equality (Harvey, 2020), and sustainable development more broadly (Grover et al., 2021; Pilař et al., 2019; Roldán-álvarez et al., 2021).

Twitter data thus forms another useful source of public communication by international organizations and other global governance actors that can be used for research. It should be noted that since Twitter is often used for advocacy and marketing purposes, sensitive information may not be disclosed. Sensitive topics may thus remain undetected when relying solely on Twitter data (Ecker-Ehrhardt, 2021; Goritz et al., 2020). In addition, Twitter is a fast-paced and fleeting communication platform, meaning that any information available on the platform may be skewed by 'trending' topics.

Nevertheless, there are some significant advantages of working with Twitter data. First, Twitter provides a space for discussion that is accessible for a range of actor types with differing views (Bruns & Burgess, 2011; Ecker-Ehrhardt, 2018a, 2021; Goritz et al., 2020; Kolleck et al., 2017). Any individual or organization with internet access can create a Twitter account and partake in the online discussions, and they can make their contributions part of larger discussions by using hashtags (#). This makes Twitter a unique data source in global governance research. Conventional data sources, such as formal meetings, documents, surveys, interviews, are often restricted – either by rules or in practice – to a select group of actors. Second, users of Twitter can interact by replying to, mentioning, or retweeting each other. Thus, Twitter provides relational data, and provide insights as to which users are considered important or relevant by the larger community (Goritz et al., 2020). Third, Twitter data is well-structured and easily accessible for large-N extraction (Twitter, 2023a).

I collected and used Twitter data for the empirical work of chapter 8. I describe the process of collecting the tweets in section 4.5.6.

4.4.4. Other data sources

I used the **Yearbook of International Organizations** (Yearbook) to obtain information about an international organizations' aim and vision, and for information about member states. The Union of International Associations publishes the Yearbook annually (UIA, 2023). This dataset is arguably the most comprehensive structured dataset on international organizations available, containing information on approximately 75,000 international actors. While the dataset is proprietary and costly to access, some information is available open access. To check the information from the Yearbook, or if information was missing in the Yearbook, I consulted the **current websites** of international organizations to obtain further details on international organizations' aim, vision, and member states. I used this information to identify the main dimension of sustainability (economic, social, environmental) and main SDG issue area the organization works on, and to identify the number of member states. I describe this process of coding international organizations in section 4.5.1.

I used an **SDG keyword dictionary** to map the text content of webpages to the 17 policy domains of the SDGs. The dictionary was developed Ramirez et al. and Romero-Goyeneche et al. (Ramirez et al., 2019; Romero-Goyeneche et al., 2021, 2022) and contains 2,155 keywords or keyword combinations that can be coupled to the 17 issue areas represented by the SDGs. For example, the keyword combination "Income" and "Poverty" is related to the issue area 'poverty' (SDG 1). The dictionary was developed specifically to couple SDGs to texts and was created using the 17 SDGs as guide. Previous research shows that the dictionary matches texts relatively evenly across all SDGs (Romero-Goyeneche et al., 2021). Moreover, the creators of the dictionary optimized it to identify multiple SDG issue areas in a single text to assess connectedness between the SDGs, making it especially useful for the purpose of our study (Romero-Goyeneche et al., 2022). I use the SDG dictionary to map website texts to the SDGs. I describe this process in section 4.5.5. These mappings of texts to SDGs inform the empirical work of chapters 6 and 7.

I retrieved **documents from the Convention on Biological Diversity** (CBD) related to the development of the Montreal-Kunming Global Biodiversity Framework from the website of the CBD, www.cbd.int. I used these for the empirical work of chapter 8. For a full list of the collected documents, see supporting material, table S8.1.

To identify international organizations, I combined the Correlates of War dataset with data from the UN **System chart** of July 2019 (UNDGC, 2019), and the **list of SDG Indicator custodians** of December 2019 (UN, 2019). I further describe the identification of international organizations to analyze in section 4.5.1.

4.5. Data collection and processing

The data collection process consists of seven steps, some sequential and others parallel. Figure 4.1. gives an overview of these seven steps. Unless otherwise specified, I collected and processed data using R through the interface RStudio (R Core Team, 2022; RStudio Team, 2020). I used the following R packages, listed in alphabetical order: dplyr (Wickham, François, et al., 2023); readxl (Wickham & Bryan, 2023); reshape (Wickham, 2007); rtweet (Kearney, 2019); R.utils (Bengtsson, 2003); stringr (Wickham, 2022); tidyr (Wickham, Vaughan, et al., 2023); and, tm (Feinerer et al., 2008; Feinerer & Hornik, 2023).

4.5.1. Identifying and coding international organizations

Following my broad definition, the number of international organizations that I could study is high. To recall, I have defined international organizations in this thesis as *all organizations and institutions operating at the international level that were established by multilateral treaty, have at least three states as members, and that operate with a certain degree of autonomy, meaning they hold meetings at least every four years, have a permanent secretariat and are professionally staffed or have some organizational capacity* (see section 1.3). It was outside the scope of this project to manually identify all international organizations that meet these criteria. Therefore, I relied on existing collections of international organizations. Specifically, I combined and selected from three sets of international organizations (see also sections 4.4.1. and 4.4.4).

First, I started with formal intergovernmental organizations from the Correlates of War dataset (Pevehouse et al., 2020; Wallace & Singer, 1970). I excluded organizations from the set who did not have member states from 2009 onwards, thereby filtering out those organizations that have been dissolved or became inactive. Second, since the UN is the largest international organization, I opted to include its sub-units. Specifically, I selected UN sub-units that operate with high autonomy, often with their own financial resources and leadership. This includes all entities, that is specialized agencies, funds and programs, research and training programs and regional commissions, which operate directly under the General Assembly (UNGA) and the Economic and Social Council (ECOSOC). Selection was based on the UN System chart of 2019 (UNDGC, 2019). Lastly, I included all organizations that the UN has appointed as 'SDG indicator custodians' (UN, 2019b). These organizations serve as focal points for collecting data on specific targets of the SDGs. In addition, their role is to disseminate knowledge and coordinate with regards to these targets. Since the three sets share overlaps, I removed any duplicate organizations. Then, since I am focusing on digital communication, I manually collected website addresses for each organization. Any organization without its own domain name ("example.org") was discarded from the set. For example, the European Commission for the Control of Foot-and-Mouth Disease can be found online at *fao.org/eufmd/*.

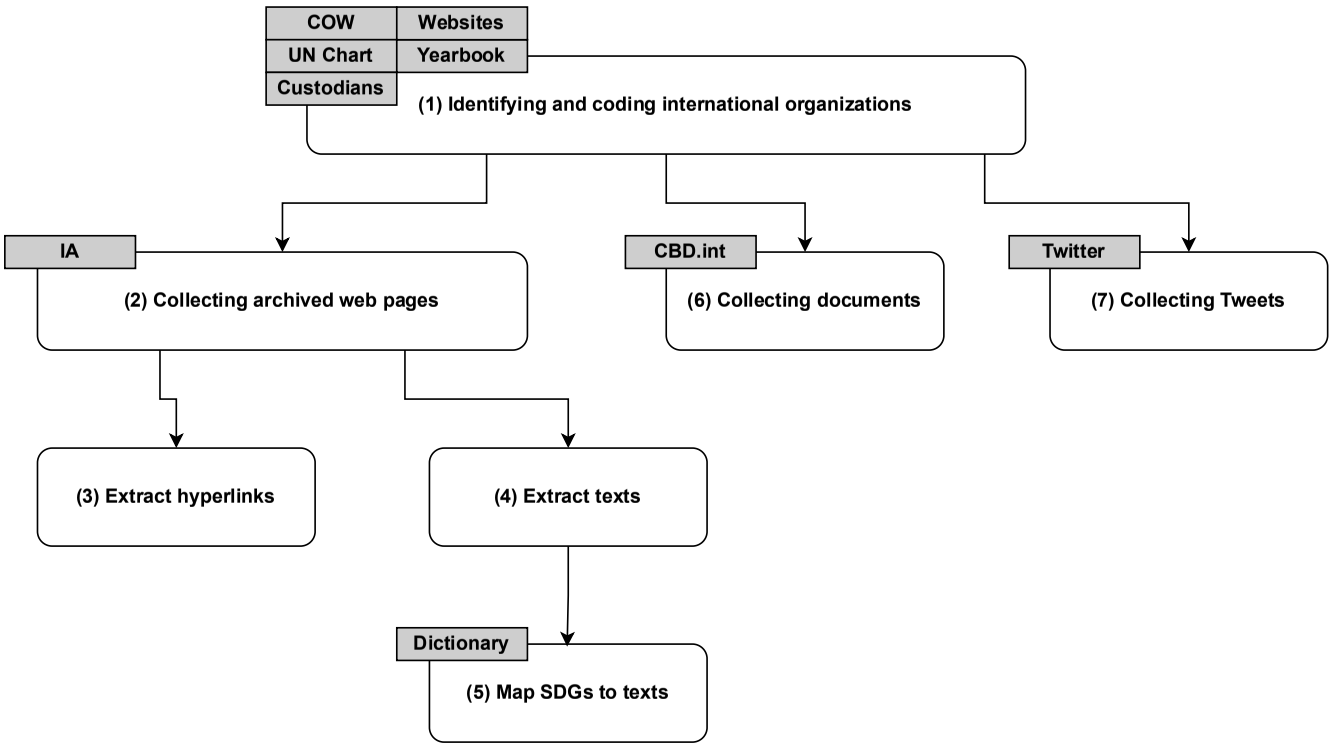


Figure 4.1. Overview of data collection process and data sources

Data collection consists of seven steps (white blocks) in which I used nine data sources (grey blocks). COW = Correlates of War; IA = Internet Archive; CBD.int = CBD website.

However, this is not a separate website, but rather a web page of the website of the Food and Agriculture Organization (*fao.org*). Thus, the European Commission for the Control of Foot-and-Mouth Disease is removed from the set.

I manually collected and coded a total of five variables for the set of collected international organizations. First, I coded whether organizations were part of the UN system or not. Second, I coded whether organizations were global or regional in scope in terms of their member states' geographical distribution. I consider an organization to have a global scope if it has at least three member states in at least four continents each. If this criterion was not met, I consider the organization to be regional in scope. I obtained membership data from the Correlates of War dataset and supplemented with manually collected data from current websites of international organizations and/or the Yearbook of International Organizations. Third, I recorded the number of member states of each international organization. Fourth, I coded for each international organizations their sustainability domain: whether they focus primarily on economic, social, or environmental issues, or a combination thereof. Fifth, I categorized each international organization to their primary issue area. Issue areas were demarcated by the 17 SDGs, and I assessed which of each of the 17 SDGs each international organization primarily works on. Given my research interest in the SDGs, I excluded international organizations that do not work on any SDG from the set. Since organizations can work on multiple SDGs, each organization was assigned one to seventeen SDGs. Coding of sustainability domains and SDG issue areas was done separately by me and one other researcher, based on organizations' self-reported mission or vision statement. The latter we obtained from the websites of organizations and/or from the Yearbook of International Organizations. Any incongruencies in coding of issue area and sustainability domain were resolved by discussion.

In total, I identified a set of 323 international organizations using the above-mentioned criteria.

4.5.2. Collecting archived web pages 2012-2019

The Internet Archive offers an application programming interface (API), the Wayback CDX Server, to bulk download archived web pages.

For each of the 323 international organizations in the set, I retrieved all unique archived web pages in each year from 2012 to 2019. Unique means here that if multiple copies of the same webpage were stored in the archive multiple times in a year, only the first copy of each year was retrieved. I chose the timeframe of 2012 to 2019 to enable analysis four years before, and four years after, the SDGs were adopted in 2015.

I collected the archived pages as HTML (HyperText Markup Language) files, the standard format for web pages. For five international organizations in the set, no archived pages were available in any of the chosen years. For the remaining 318 international organizations, a total of 3,061,919 unique web pages across 2012 to 2019 were available. Multiple servers on the public cloud – through Amazon web services – were used to download this number of pages quickly. Source code and a more detailed explanation of the procedure for accessing the Wayback CDX Server using Amazon Web Services are available open access on GitHub via the Global Goals repository (de Vos & Treep, 2022).

This set of 318 international organizations for which data is available in the Internet Archive forms the basis of empirical chapters 5, 6, and 7 in this thesis. However, the number of archived web pages per year differs. Depending on the years under investigation in each chapter, I conducted different data selection and processing steps.

4.5.3. Extracting hyperlinks every year

To enable analysis of the hyperlink network in consecutive years from 2012 to 2019, for the empirical analysis of chapter 5, I require data in each year. As there were no pages for some international organizations in some years, I relied on data imputation. In cases where there were less than three webpages available for an international organization in a year, I imputed web pages from either the previous or next year wherever possible. Hereby I thus assume that an international organizations' website has not changed compared to the previous or next year, respectively. If three consecutive years were missing or more than three out of the total eight years were missing, I deleted the organization from the set.

This selection resulted in the list-wise deletion of 42 international organizations, leaving the set of international organizations for the empirical analysis of chapter 5 at 276. Table S4.1 in the supporting material gives a list of the included international organizations. After imputation as described, I thus collected at least three web pages in each year from 2012-2019 for 276 international organizations. In total, I collected 3,040,491 web pages for the 276 international organizations.

From these downloaded webpages, hyperlinks were extracted using common text scraping methods using the Lynx text-based web browser (Dickey, 2018) and regular expressions implementations in Python. Again, the processes were run on the public cloud through Amazon Web Services. Source code is available open access on GitHub (de Vos & Treep, 2022). From the extracted hyperlinks, I selected only hyperlinks that were *between* the 276 international organizations in the set. For example, if an international organization's website refers to *www.twitter.com*, that hyperlink is removed as it goes to a domain outside the set of 276 organizations.

From the webpages, a total of 1,576,620 hyperlinks were extracted across eight years. Then, for every pair of international organizations, I counted the number of hyperlinks that goes from the organization creating the hyperlink, IO_i, to the organization receiving the hyperlink, IO_j, in each year t. To account for the differences in number of web pages available per international organization, I divided the count of hyperlinks by the total number of pages collected for the organization sending the link, IO_i, in year t. This results in a relative hyperlink strength between each pair of IO_i -> IO_j in each year. Given the requirement of unweighted networks for many of the network measures to assess institutional integration (see section 4.2.2), the relative hyperlink strength must be reduced to a binary value, to indicate an existent or non-existent tie. Given that there is no standard as to what constitutes a meaningful connection in terms of relative hyperlink strength, I set a threshold to exclude any connections with a value less than 0.001. In practice, this means that if there is less than 1 hyperlink from IO_i to IO_j per 1,000 webpages from the website of IO_i, I consider this connection meaningless and thus a non-existent connection. I considered all connections with a relative hyperlink strength over the threshold value meaningful, and thus existent connections. I also evaluated thresholds of 0.002 and 0.0005 – so 1 hyperlink per 500 pages or 1 hyperlink per 2,000 pages, which gave overall the same results as the threshold of 0.001.

4.5.4. Extracting texts every other year

To enable the text-based analysis for empirical chapters 6 and 7, I require the plain text from the websites. As the extraction of plain text from HTMLs is computationally intensive, and to simplify the analyses, I opted to use only the HTMLs from the years 2013, 2015, 2017 and 2019 to extract texts.

From the downloaded HTMLs, I extracted the text of the webpages using BeautifulSoup (Richardson, 2023) implemented in Python 2.7 (Python Software Foundation, 2023). For each HTML page, I extracted the body text by selecting only specific elements of the HTML, to be specific the header (<h1> to <h6>) and paragraph (<p>) elements. While each website can be constructed differently, these elements generally contain the titles, subtitles, and the paragraphs of text. By extracting only these elements I thus excluded as much as possible any website text from headers, footers, and menus, which is not relevant with regards to the policies, programs, or activities of an international organization.

After extracting the header and paragraph elements of the text, I assessed whether the remaining text meets two criteria. First, the text must be English to enable keyword analysis. Second, each webpage text must be at least 1,000 characters long, so that there is some content to analyze. This process resulted in the conversion of 640,656 webpages into plain text for 2013, 2015, 2017 and 2019.

To inform the empirical work of chapter 6, I require only data for 2015, 2017 and 2019. For these years, I selected only those international organizations for which at least 20 plain text pages are available in *each* year, to enable regression analysis with a lagged variable. In total, 159 international organizations meet this criterium. Table S4.1 in the supporting material gives a list of the included international organizations. For these 159 organizations, I thus collected at least 20 plain text webpages in the years 2015, 2017 and 2019. In total, I collected 521,872 plain text webpages.

To inform the empirical of chapter 7, I require data for 2013, 2015, 2017 and 2019 for comparing international organizations over time, and only data for 2019 is required for comparing between subgroups of international organizations. Since the goal of this analysis is to identify which SDG topics are frequently discussed together, here I selected only those website texts that discuss at least one SDG topic. An SDG topic is meant here to indicate that a text refers to the issue area that an SDG is concerned with, for example poverty for SDG 1, rather than that the text refers specifically to the SDGs. I describe how I mapped the SDG topics to texts in the next section, 4.5.5. After I mapped the SDG topics to the website texts, I discarded all pages that do not cover at least one SDG topic. For further analysis, I selected only those international organizations for which at least 20 pages – that thus cover at least 1 SDG topic – are available. For comparison over time, 20 pages are required in *each* year, which is the case for 114 international organizations. For this set, I collected a total of 347,026 SDG topical pages across 2013, 2015, 2017 and 2019. For comparison between subgroups, 20 pages are required only in 2019, which is the case for 144 international organizations. For this set, I collected a total of 71,748 SDG topical pages from 2019. Table S4.1 in the supporting material gives a list of the included international organizations in the analysis over time and the analysis of 2019.

4.5.5. Mapping texts to SDG topics

I mapped the SDG topics to the plain English text content of web pages to inform the empirical work of chapters 6 and 7. To map SDG topics to text, I used a dictionary developed by Ramirez et al. and Romero-Goyeneche et al. (Ramirez et al., 2019; Romero-Goyeneche et al., 2021, 2022; see also section 4.4.4). For each of the 17 issue areas as embedded in the SDGs, between 115 and 143 keywords or keyword combinations are available in the SDG dictionary. Each page was scanned for these keywords. If a page contains three or more keywords related to one of the 17 SDG issue areas, I consider it to 'cover' that SDG issue area. A text page can thus cover between 0 and 17 SDG issue areas.

4.5.6. Collecting Tweets

I collected Tweets from 9 October until 17 October 2021, covering the first part of the 15th conference of the parties (COP) to the Convention on Biological Diversity itself and

2 days before and after. I approached Twitter's application programming interface (API) using the package 'rtweet' (Kearney, 2019), and collected all tweets that had specific keywords related to biodiversity and the conference of the parties, such as "COP15" and "Post2020". For a list of keywords, see the supporting material, table S8.2. In total, I collected 108,959 Tweets from 54,036 unique accounts.

4.6. Data analysis and inference

In this thesis, I analyzed data in qualitative and quantitative ways. For the empirical work of chapter 5, I used network analysis as main method (Hafner-Burton et al., 2009). The network measures that I used in the analysis are described in section 4.2.2. For the empirical work of chapter 6, I use regression analysis as main method, where text analysis is employed to create some of the variables used in the regression. For chapter 7, I again constructed variables using text analysis, and I assess group differences for the variables using the non-parametric Wilcoxon signed-rank test and the Wilcoxon rank sum test, also known as the Mann Whitney U test (Rey & Neuhäuser, 2014; Wilcoxon, 1945). For chapter 8, I employ discourse analysis (I. Fairclough & Fairclough, 2013).

I used R through the interface RStudio for all quantitative data analysis (R Core Team, 2022; RStudio Team, 2020). I used the following R packages, listed in alphabetical order, for data analysis: car (J. Fox & Weisberg, 2019); dplyr (Wickham, François, et al., 2023); frm (J. J. S. Ramalho, 2016); lmtest (Zeileis & Hothorn, 2002); and igraph (Csardi & Nepusz, 2006).

In this thesis I rely mostly on descriptive inference to investigate the relationship between the SDGs, international organizations and institutional and policy integration (G. King et al., 1994). This research thus has a heuristic function to some extent, pointing to observable changes over time and between different sets of international organizations that indicate certain steering effects of the SDGs. Yet, causality with regards to the research question is hard to establish. There is no real counterfactual as there is no set of international organizations that has not been 'exposed' to the SDGs. A counterfactual is approximated here by looking at difference before and after the advent of the SDGs in chapters 5 and 7, and by comparing those international organizations that use the SDGs to those that do not in chapter 6. However, when comparing over time, it is difficult – if not impossible – to discern effects from the SDGs themselves from any path-dependency. The SDGs build on previous efforts in global governance, and many international organizations played an active role in the formulation of the (Kamau et al., 2018). As such, there is likely a bidirectional influence between international organizations and the SDGs (Montesano et al., 2023). Changes observed in international organizations

after the advent of the SDGs are thus likely a mix of the effects of the goals themselves and pre-existing paths. Nevertheless, descriptive analysis can provide avenue for inferences, when conducted systematically (G. King et al., 1994). However, the work in this thesis would benefit from additional research with complementary methods to further investigate cause-and-effect within the relationships identified. I discuss this further in sections 9.3.5. and 9.4.

4.7. Data visualization

I made data visualizations in R and the interface RStudio (R Core Team, 2022; RStudio Team, 2020), using the r-package ggplot2 (Wickham, 2016). For network visualizations, I used Gephi 0.9.7.

Part III

Empirical studies

The impact of the Sustainable Development Goals on institutional integration in a network of 276 international organizations

This chapter is based on:

Bogers, M., Biermann, F., Kalfagianni, A., Kim, R. E., Treep, J., & de Vos, M. G. (2022). The impact of the Sustainable Development Goals on a network of 276 international organizations. *Global Environmental Change, 76, 102567*. https://doi.org/10.1016/j.gloenvcha.2022.102567

Abstract

Global sustainability governance is marked by a highly fragmented system of distinct clusters of international organizations, along with state and other actors. Enhancing inter-organizational coordination and cooperation is thus often recognized as an important reform challenge in global sustainability governance. The 17 Sustainable Development Goals, agreed by the United Nations in 2015, thus explicitly aim at advancing policy coherence and institutional integration among the myriad international institutions. Yet, have these goals been effective in this regard? We assess here the impact of the Sustainable Development Goals on a network structure of 276 international organizations in the period 2012-2019, that is, four years before and four years after the launch of the Sustainable Development Goals. The net-work structure was approximated by analyzing data from the websites of these 276 international organizations that were joined by more than 1.5 million hyperlinks, which we collected using a custom-made web crawler. Our findings are contrary to what is widely expected from the Sustainable Development Goals: we find that fragmentation has in fact increased after the Sustainable Development Goals came into effect. In addition, silos are increasing around the 17 SDGs as well as around the social, economic, and environmental dimensions of sustainable development.

5.1. Introduction

This chapter focuses on institutional integration at the macro-level. We study whether and how the 17 SDGs had any impact on the degree and pattern of institutional integration at the global level. In this chapter, we commonly use the term fragmentation alongside the term integration, as fragmentation is the more common term in the literature (Beckfield, 2008, 2010; Greenhill & Lupu, 2017; R. E. Kim, 2013). To recall, institutional fragmentation is conceptually and empirically the opposite of institutional integration, as both terms describe opposite ends of the same characteristic of a governance system (see section 1.2.1).

As described in section 1.1, the need for better policy coherence in global sustainability governance is undisputed. Hundreds of international organizations active in global governance are only sparsely connected (Beckfield, 2010; Greenhill & Lupu, 2017) and often compete for scarce resources while prioritizing their own mandates (Abbott et al., 2016; F. Biermann, Pattberg, et al., 2009; Zelli & van Asselt, 2013). Global sustainability governance as a system of international institutions and organizations remains institutionally fragmented (F. Biermann, Pattberg, et al., 2009; F. Biermann & Kim, 2020; Najam et al., 2004; Young, 2011a; Zelli & van Asselt, 2013). Most scholars thus agree on the need for enhanced international cooperation to better address the interconnected global governance challenges such as health, trade, and the environment (F. Biermann & Kim, 2020; Hanf & Scharpf, 1978). There is also no lack of policy proposals and reform ideas, for instance for clustering institutions (Moltke, 2005), managing regime interplay (Oberthür & Stokke, 2011; Stokke, 2020), embracing complexity (Duit et al., 2010), or centralizing global governance through strong coordinating authorities (F. Biermann, 2000; R. E. Kim et al., 2020).

The agreement in 2015 of 17 widely accepted Sustainable Development Goals (SDGs) is part of this reform discourse to foster institutional integration (see section 1.4). The conceptual idea is that a defined set of overarching global goals will provide a unifying force in global sustainability governance (F. Biermann et al., 2017; F. Biermann & Kanie, 2017; Kanie et al., 2019; R. E. Kim, 2016; Underdal & Kim, 2017; Young et al., 2017). Global goals such as the SDGs are believed to create a common vision and incentive for more cooperation among international organizations and institutions and hence improve policy coherence (P. M. Haas & Stevens, 2017). More detailed debates focus on specific design features and enabling conditions of goals, asking among others whether there should be one overarching goal steering all others; how different goals are best organized in a broader framework; and what the optimal number of global goals is (Nilsson & Costanza, 2015). In short, numerous theorists and practitioners expect the SDGs to have a measurable impact on reducing the degree of institutional fragmentation and

breaking down deeply entrenched policy silos (P. M. Haas & Stevens, 2017; see also section 1.4.2).

We take the network of international organizations as the unit of analysis and assess whether and how this network has converged or diverged since the SDGs came into effect on January 1, 2016. Several earlier studies have used network analysis to study whether international organizations self-organize into networks and how network structures change over time (Atouba & Shumate, 2010; Beckfield, 2008, 2010; Gomez & Parigi, 2015; Greenhill & Lupu, 2017; K. Kim & Barnett, 2000), some with a focus on the changing degree of institutional fragmentation (Beckfield, 2008, 2010; Greenhill & Lupu, 2017; R. E. Kim, 2013). We differ from these earlier studies in both theory and method.

Regarding our theoretical contribution, this chapter is novel by focusing on the specific steering effects of the SDGs on the system of international organizations. We show how the SDGs have failed to reduce institutional fragmentation so far, but rather have increased functional siloes among international organizations. Global goals thus appear to steer the cooperation behavior of international organizations towards more policy domain-specific cooperation, though this effect differs across groups of international organizations.

Methodologically, we introduce a novel dynamic network model that we detail further below. We retrieved and analyzed archival data of over 3,000,000 website pages of 276 international organizations that were joined by over 1,500,000 hyperlinks. The archival internet data covered a period of eight years between 2012 and 2019, that is, four years before and four years after the SDGs came into effect. We retrieved these data from the Internet Archive, an open-access data source, using a web crawler that we custom-built. We made three assessments of this network model on three levels: we studied whether fragmentation has increased or de-creased over time, first, in the entire network of international organizations (macrolevel); second, among international organizations that work on the three different social, economic and environmental dimensions of sustainable development (mesolevel); and third, among international organizations that focus their work on the 17 different policy areas represented by the SDGs (microlevel). We completed our assessment by analyzing which types of international organizations give rise to the changes in the fragmentation patterns we observe. We discern between international organizations that belong to the UN system against those that do not; those with a regional scope against those with a global geographical scope; and between those working on the economic, social, or environmental dimension of sustainable development.

We proceed as follows. Drawing on the literature on goal setting, orchestration, and polycentricity in global governance, we first formulate three propositions that could explain how the SDGs might affect the degree and pattern of governance fragmentation. We then describe how we built our novel network model consisting of international organizations using the archival websites and hyperlinks that we extracted, and how we operationalized fragmentation in network terms. We then report two central findings, exploring also possible explanations for the observed changes in the degree and pattern of fragmentation of the international organizations network after the adoption of the SDGs.

5.2. The SDGs and institutional integration: three propositions

While there is no consensus on a definition, governance fragmentation as a concept revolves around whether and how international institutions, including international organizations, interact or cooperate (see section 1.2.1). Depending on the cooperation, a system can be more or less fragmented (F. Biermann et al., 2020). While there is no ideal type or level of fragmentation, most scholars agree that the system of international organizations remains too fragmented, and that better cooperation is needed (F. Biermann, Pattberg, et al., 2009; F. Biermann & Kim, 2020; Hanf & Scharpf, 1978; Najam et al., 2004; Young, 2011a; Zelli & van Asselt, 2013). Yet how better cooperation can be achieved, and how to assess any changes in fragmentation, are both long-standing points of debate (Visseren-Hamakers, 2015).

An emerging body of literature argues that global goals such as the SDGs may help align the activities of international organizations towards more sustainable development (Bernstein, 2017; F. Biermann et al., 2017; F. Biermann & Kanie, 2017; Underdal & Kim, 2017; Young et al., 2017). Global goals are internationally agreed non-legally binding policy objectives that are time-bound, measurable and aspirational (R. E. Kim et al., 2020; see also chapter 2). These goals can offer focal points for international organizations, which are often divided along issue areas or geographical lines (Greenhill & Lupu, 2017; Nilsson et al., 2009). Global goals are commonly contrasted against international rules (Kanie et al., 2019; Young, 2017), which are generally seen as being more precise and enforceable. Despite the non-legally binding nature of global goals, they are often expected to significantly influence governance at all levels of social organization (P. M. Haas & Stevens, 2017). In short, global goals may also bring international organizations together by reducing fragmentation between them.

One mechanism by which global goals could have such an impact is by functioning as 'orchestrators' in dense networks of actors and institutions that help increase the coherence and consistency of fragmented global governance systems (Bernstein, 2017; F. Biermann et al., 2017; F. Biermann & Kanie, 2017; Kanie et al., 2019; R. E. Kim, 2016; Underdal & Kim, 2017; Young et al., 2017). This conceptualization builds on the recent body of literature that views international organizations as orchestrators that enlist intermediaries to influence the behavior of target actors such as states (Abbott et al., 2015). In this case, shared goals are a key necessity for orchestration to take place (Abbott et al., 2012). Drawing on this idea of orchestration, recent work applied the notion of orchestration to global goals, conceptualizing global goals themselves as orchestrators. Some authors evoke here the metaphor of a musical orchestra in which international organizations are lead players while global goals are the sheet of music or the common script shared by all players (Underdal & Kim, 2017). This common script functions as a shared purpose for international organizations and may encourage decision-makers to mutually adjust their activities to achieve the collective goals. Global goals would therefore help 'orchestrate' the myriad activities of international organizations in the sustainability domain.

The effectiveness of global goals then critically depends on the extent to which international organizations accept them as steering mechanisms above their own objectives. International organizations would need to subscribe to the SDGs as universally agreed global aspirations and accept to be subject to the steering effects of the SDGs, and alter their behavior.

But do international organizations respond to the signals of the SDGs? We consider three ways in which international organizations are likely to accept the SDGs as guidance, informing our three following propositions.

5.2.1. Proposition 1: Overall integration

International organizations may consider the entire set of 17 goals as an integrative and indivisible framework and adjust their behavior accordingly. If organizations accepted the SDGs as a holistic framework, as an 'integrated and indivisible' system in which all 17 goals are interconnected through multiple targets (Le Blanc, 2015), we would expect international organizations to work after the launch of the goals in 2015 more towards integrated solutions that address trade-offs to realize collective outcomes. In particular, we would expect that international organizations cooperate more with other organizations to share information, coordinate policies and make joint decisions (R. Biermann, 2008; Downie, 2020b, 2021; Gest & Grigorescu, 2010; P. M. Haas et al., 2013; Hall, 2015; Koops, 2017). The SDGs would convey a shared vision that facilitates cooperation (Downie, 2021; Finnemore & Jurkovich, 2020; Gray, 2008; Lipson, 2017; Lubell et al.,

2017; Provan & Kenis, 2008), leading over time to a more dense and more tightly knit network of international organizations (R. Biermann, 2017; see also section 1.4.2). This leads us to our first proposition of possible measurable impacts that would show the steering effects of the SDGs:

Proposition 1: After adoption of the SDGs, the network of international organizations has become less fragmented.

5.2.2. Proposition 2: Integration of environmental, economic, and social policies

International organizations may associate each of the SDGs with one of the three dimensions of sustainable development, that is, environment, society, and economy. The distinction between these three dimensions of sustainable development is not made explicit in the goal framework itself but regularly done in practice (Breuer, Janetschek, et al., 2019). No SDG, however, is framed exclusively as being social, economic, or environmental, which reflects a conscious design choice by governments (Kamau et al., 2018). During the negotiations, for example, the UN Environment Programme did not lobby for a separate set of 'environmental SDGs,' but rather sought to embed environmental concerns in all goals (Griggs et al., 2014; UNEP, 2013). The SDGs emphasize the interlinkages between the social, economic, and environmental dimensions and the need for international organizations working on a specific issue area to work across silos (Niestroy & Meuleman, 2016). One should hence expect as a steering effect of the SDGs that international environmental organizations, international economic organizations, and international social organizations would interact more closely and intensely in the years following the adoption of the SDGs. This leads us to our second proposition.

Proposition 2: After adoption of the SDGs, the network of international organizations has become less fragmented between the social, economic, and environmental dimensions of sustainable development.

5.2.3. Proposition 3: Siloization around 17 SDGs

International organizations may view the SDGs as 17 separate global policy objectives and then focus increasingly on one single SDG that is most linked to their own mandate, rather than on integration or a set of interrelated goals. The 17 SDGs would then lead to a steering effect that governments and UN officials have not intended: a new siloization around the 17 distinct SDGs in a system that becomes even more fragmented. Clusters of organizations would form after 2015 around issue areas as they are defined by the SDGs, such as organizational clusters around poverty (SDG 1), health (SDG 3), climate (SDG 13), and so on (Boas et al., 2016; UN, 2015). Given that the novel boundaries between the 17 SDGs are the outcome of political negotiations involving many competing

interests, we would observe a realignment of international organizations around these newly redefined 17 goals (Bernstein, 2017; R. E. Kim, 2016). The SDGs would reshape but not reduce the fragmentation of global governance (Gomez & Parigi, 2015; Nilsson et al., 2009; Pittman & Armitage, 2019; Zelli & van Asselt, 2013), and create or reorder silos instead of breaking them down (Bernstein, 2017). In global energy governance, for example, SDG 7 could then have encouraged the International Energy Agency to look inwards at the activities within their issue area rather than connecting externally with those working in other areas (Downie, 2020a, 2021).

Proposition 3: After adoption of the SDGs, the network of international organizations has become more fragmented between the 17 issue areas defined by the SDGs.

5.3. Research design and methods

To assess structural fragmentation, our research builds on network analysis (Beckfield, 2008, 2010; Bodin & Crona, 2009; Greenhill & Lupu, 2017; R. E. Kim, 2013, 2020; Rudnick et al., 2019; see also sections 3.3.4. and 4.2.2). Network analysis is a methodological approach that focuses on relationships between actors, and the emerging network structure formed by these actors and their relationships. The method is rooted in the assumption that actors do not merely exist in isolation, but that their positions vis-à-vis each other matter: they influence each other and their position in the network has meaning (Carrington et al., 2005; Hafner-Burton et al., 2009). Network analysis is increasingly common in global sustainability governance research to investigate institutional network structures (Bodin & Crona, 2009; Hafner-Burton et al., 2009; R. E. Kim, 2020; Maoz, 2012), including those of international organizations (Beckfield, 2008; Gest & Grigorescu, 2010; Gomez & Parigi, 2015; Greenhill & Lupu, 2017; Ingram & Torfason, 2010; K. Kim & Barnett, 2000; Sommerer & Tallberg, 2019), and other governance actors (Atouba & Shumate, 2010, 2015; Carpenter, 2007; Carpenter et al., 2014; Fliervoet et al., 2016; Green, 2021; Murdie, 2014; Rudnick et al., 2019; Wilson et al., 2016).

We modelled the network of international organizations by using their websites as nodes and the hyperlinks as proxy for cooperation ties between these international organizations (see section 4.2.2). Hyperlinks are the clickable pieces of text or images on websites that lead to another piece of in-formation on the World Wide Web, that is in our case, to the website of another international organization. Websites and hyperlinks have been used previously to map policies and institutions in the areas of health, energy, water and human security (Atouba & Shumate, 2010; Carpenter, 2007; Carpenter et al., 2014; P. B. Lang et al., 2013; McNutt & Pal, 2011; Widerberg, 2016; Yi & Scholz, 2016). Our

study is the first to use hyperlinks to map and analyze the evolution of the network of international organizations over multiple years.

To map the hyperlink networks of international organizations over time, we used the Internet Archive to retrieve archived webpages of international organizations, a methodological innovation that helps address the lack of historical relational data available for global governance research (see section 4.4.2). Previously used data such as co-membership (Alcacer & Ingram, 2013; Beckfield, 2008, 2010; Gomez & Parigi, 2015; Greenhill & Lupu, 2017), document citations (R. E. Kim, 2013; R. E. Kim & Morin, 2021), self-reported cooperation ties (Gallemore & Munroe, 2013; Gest & Grigorescu, 2010; Rudnick et al., 2019; Wilson et al., 2016), and official institutional ties (Sommerer & Tallberg, 2019) have been found useful in other studies. Yet they do not vary significantly over a short period of time and are generally insensitive to weak signals such as those from global goals due to high transaction costs. Furthermore, except for membership data, the availability of these types of data is limited for our research.

Therefore, the analysis of the websites of international organizations and their links is a useful alternative (see also sections 4.2.2. and 4.4.2). In the wake of the internet revolution, 'digital diplomacy' has become increasingly important (Bjola et al., 2019; Manor, 2016; Westcott, 2008). International organizations have over the past decades strongly increased and centralized their online communication and outreach to promote their mandates and policies more effectively (Ecker-Ehrhardt, 2018b; Georgi & Schatral, 2012; Siebenhüner, 2009; Vadura, 2015). The content of websites of international organizations has become part of these extensive communication strategies, which are overseen by specialized units and with their core messages tightly controlled by senior management (Ecker-Ehrhardt, 2018a). Thus, when an international organization chooses to hyperlink to another organization's website, this is a conscious choice to associate with that organization (De Mayer, 2013). The hyperlink in essence conveys that 'what this organization does is relevant to what we do.' This may be for a variety of reasons, including relevant information or indicating an alliance (Park et al., 2004). Strategic reasons may also play a role, where hyperlinks may be created or explicitly not created to increase traffic to the own website. Regardless of underlying motivations, once a hyperlink is created, visibility is given to another organization's website, reflecting trust, authority and legitimacy (De Mayer, 2013; Häussler et al., 2017; Nam et al., 2014; Park, 2003; Pilny & Shumate, 2012). While at the individual level, motivations and propensity to hyperlink may vary, the aggregate of hyperlinks reflects an underlying social structure (Halavais, 2008; Hsu & Park, 2011). This makes websites and hyperlinks useful proxies of inter-organizational relations to measure larger institutional alliances, policy coalitions and emerging policy directions of international organizations (Ecker-Ehrhardt, 2018a; Hayes & Scott, 2018; Nam et al., 2014; Pilny & Shumate, 2012; Vadura, 2015; Yi & Scholz, 2016). Two concrete

examples of hyperlinks reflecting inter-organizational relations among international organizations are given in the supporting material, figure S5.1 and S5.2.

Website data are also available across multiple issue areas and countries. While the website texts are not always in the English language, the hyperlinks are machine-readable, allowing us to include also non-English websites in our research. In short, websites contain vital and up-to-date information about the activities of international organizations, and we hence expect to see effects of the SDGs even within the short timeframe since 2015.

5.3.1. Data collection

We organized the collection of data in four processes (see supporting material figure S5.3; see also sections 4.5.1., 4.5.2., and 4.5.3).

First, we compiled and coded core data on international organizations. We collected a set of international organizations from the Correlates of War International Governmental Organizations dataset (Version 3) (Pevehouse et al., 2020; Wallace & Singer, 1970). This set includes international organizations that have at least three member states; hold regular plenary sessions at least once every ten years; and have a permanent secretariat or headquarters. We included only international organizations with member states from 2009 onward, thus disregarding organizations that have been dissolved or become inactive before that date. We also removed 37 international organizations that have no website of their own. Because the UN is the largest intergovernmental organization, we included its sub-units that operate with high autonomy, often with their own financial resources and leadership. These include all entities that are directly under the General Assembly and the Economic and Social Council, following here the UN System Chart (UNDGC, 2019), including thus all specialized agencies, funds and programs, research and training entities, and regional commissions. Finally, we included all organizations that have been appointed by the UN as so-called SDG 'indicator custodians' (UN, 2019b) to disseminate knowledge and collect data on specific targets of the SDGs. In total, this led us to a set of 335 international organizations.

We classified these organizations according to three criteria. First, we classified international organizations according to which of the issue areas embedded in the 17 SDGs they primarily focus on and whether they are focusing on environmental, economic, or social policies. Coding was done separately by two researchers, and any discrepancies were discussed and resolved. Twelve organizations were discarded as they did not work on any of the issues embedded in the SDGs. Second, we coded these international organizations according to whether they are global or regional in scope. We considered an international organization as having a global scope if it had at least three member states

in at least four continents each. We obtained membership data from the Correlates of War dataset and supplemented this when needed with manually obtained membership data from websites of international organizations. Third, organizations were coded as being part of the UN system or not. Descriptive statistics on the set of international organizations can be found in the supporting material, table S5.1.

Second, we collected archived websites. We used the Internet Archive to retrieve archived websites of international organizations, employing the Wayback CDX Server API (de Vos & Treep, 2022; see also sections 4.4.2. and 4.5.2). For each international organization, we collected all available unique webpages of a website in each year from 2012 to 2019. A webpage of a website is analogous to a chapter in a book; for example, for the website *unep.org*, its webpages include *unep.org/science-data* and *unep.org/regions/Africa* and so on. The retrieved webpages for each international organization-year unit were thus our units of observation.

If fewer than three archived pages were available of a website of an international organization in a year, we considered this as missing data. This was the case for 11.3% of all international organization-year units. To prevent data loss, we imputed data where possible from the previous or next year, assuming that the website had not changed compared to the previous or next year. If this was not possible because three consecutive years were missing or if more than three years of data were missing, we deleted the international organization completely from the set. Following this approach, we deleted 47 international organizations with insufficient web presence, leading to a final set of 276 international organizations. A list of the included international organizations is given in the supporting material S4.1.

Third, we extracted hyperlinks. For these 276 international organizations, we downloaded all available webpages, over three million in total (on average 1,375 per international organization per year) from the Internet Archive. We used Amazon Web Services cloud-computing for fast retrieval. After the download, we extracted hyperlinks from the HTML pages (de Vos & Treep, 2022). This resulted in over 1.5 million hyperlinks between the 276 international organizations in the set, for all years.

Fourth, we created and analyzed the networks. We counted for every pair of international organizations (IO) *i* and *j* in year *t*, IO_i-IO_j-t, that is, how many hyperlinks exist that go from the organization creating the hyperlink, IO_i, to the organization receiving the hyperlink, IO_j, in year *t*. Since the number of archived web pages per international organization per year differs, we divided the count of hyperlinks by the total number of webpages collected for the international organization creating the hyperlink, IO_i in year t. This results in a *relative hyperlink strength* for each pair of IO_i-IO_j in year *t*. To reduce noise in the

data, we consider anything less than one hyperlink from IO_i to IO_j per 1,000 webpages of IOi's website as an irrelevant connection. Consequently, we considered all ties with relative hyperlink strength <0.001 as non-existing. The remaining ties with relative hyperlink strength ≥ 0.001 are considered existing ties. As the network measures used in our model require unweighted networks, we removed the tie weights, thus resulting in unweighted, directed yearly networks from 2012 to 2019 for the 276 international organizations.

5.3.2. Operationalization of fragmentation

We then used these networks to examine our three propositions. We used the following model (see also section 4.2.2).

For proposition 1—that the network of international organizations has become less fragmented after the adoption of the SDGs—we used a set of six network measures to quantify fragmentation (R. E. Kim, 2020): density, fraction of isolates, fraction of the giant component, average path length, modularity, and centralization. A summary and visual explanation of these network measures is provided in section 4.2.2 and supporting material, figure S5.4, respectively. For modularity, we used Louvain modularity particular (Blondel et al., 2008). For centralization, we used indegree centrality (Atouba & Shumate, 2010; Green, 2013; Shumate, 2012). Given that the network measures differ in their units, ranges of values and directionality in relation to fragmentation (R. E. Kim, 2020), all network measure were normalized using min-max scaling. A normalized value of 1 indicates highest fragmentation – and thus lowest integration – compared to other years, and a value of 0 indicates lowest fragmentation – and thus highest integration – compared to other years.

We then studied propositions 2 and 3, that is, that the network of international organizations has become less fragmented between the social, economic, and environmental dimensions of sustainable development after the adoption of the SDGs; and that after the adoption of the SDGs the network of international organizations has become more fragmented between the 17 issue areas defined by the SDGs. Here we assessed whether ties occur mainly between international organizations that work in the same area or the same sustainability dimension. In other words, we looked at intra and inter cluster ties (Greenhill & Lupu, 2017; Krackhardt & Stern, 1988). For sake of clarity, we refer to intra cluster ties as ties within an issue area or as ties within a sustainability dimension, respectively, and we refer to inter cluster ties as ties across issue areas or across dimensions. For each tie IO_i-IO_j, we considered whether IO_i and IO_j work in the same of the 17 issue areas, according to the manual coding performed. If this was the case, we considered the tie between them as being within an issue area. In the same way, we assessed whether ties are within a dimension or across the three dimensions of sustainable development,

that is, within or across the economic, social, and environmental dimensions. Note that if a tie is within an issue area, it is always also by definition within a dimension, but not the other way around. Once we classified each tie, we assessed for each yearly network what percentage of all existing ties in the network is within an issue area or within a sustainability dimension. The remaining percentage of ties is across an issue area or sustainability dimension. As described, a hyperlink represents a conscious choice by one international organization to associate with another (De Mayer, 2013). Creating a hyperlink within or across an issue area or dimension thus reflects a choice to associate more with international organizations working on the same issue area or dimension, or more with those working in a different issue area or dimension. The change over time in percentage of ties within an issue area or dimension thus reflects the propensity of the network as a whole towards fragmentation or integration.

The focus of this chapter is on change in whole network structural properties over time. The unit of analysis is thus the entire network of international organizations, observed over eight years. De facto we have a sample size of one, consisting of 276 international organizations that interact. Given the sample size of one, we cannot infer whether any effects are statistically significant. While we acknowledge this is a shortcoming of this study, there is simply only one network of interacting international organizations in the world. As such, we can rely only on whole network descriptive statistics to make inferences, which is a common approach in longitudinal network studies in this field (Beckfield, 2010; Carrington et al., 2005; Greenhill & Lupu, 2017).

5.4. Results

We now report the results of our network analysis, following the three propositions that we developed above.

5.4.1. Fragmentation among international organizations has not decreased

We found no evidence in support of proposition 1, that is, that the network of international organizations overall would become less fragmented after the adoption of the SDGs. Fragmentation has not decreased after 2015. The level of fragmentation overall takes on a V-shaped curve, see figure 5.1. From 2012 to 2016, fragmentation decreased and reached its lowest value in 2016, but then increased again from 2017 onwards.

A closer look at each of the network measures of fragmentation, as given in table 5.1, allows for a more detailed analysis of this finding.

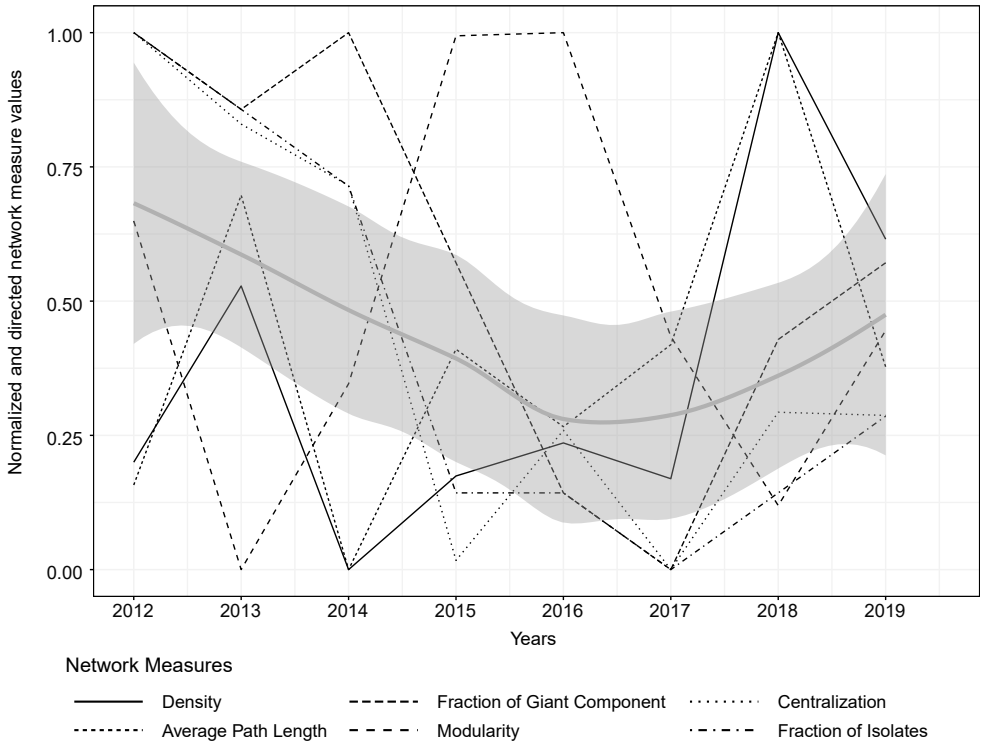


Figure 5.1. Network fragmentation 2012-2019

Normalized network measures assessing fragmentation in the network of international organizations from 2012-2019. A value of 1 indicates higher fragmentation (lower integration) and 0 indicates lower fragmentation (higher integration). The grey area indicates the smoothed average of all normalized network measures.

Table 5.1. Network measures per year

Measure	2012	2013	2014	2015	2016	2017	2018	2019
Nodes	276	276	276	276	276	276	276	276
Ties	1,891	1,827	1,930	1,896	1,884	1,897	1,735	1,810
Density	2.49%	2.41%	2.54%	2.50%	2.48%	2.50%	2.29%	2.38%
Fraction of giant component	88.4%	88.8%	88.4%	89.5%	90.6%	90.9%	89.9%	89.5%
Fraction isolates	10.9%	10.5%	10.1%	8.7%	8.7%	8.3%	8.7%	9.1%
Average path length	3.20	3.45	3.13	3.32	3.25	3.32	3.59	3.30
Centralization	0.384	0.396	0.404	0.452	0.436	0.454	0.433	0.434
Modularity	0.265	0.248	0.257	0.273	0.274	0.259	0.251	0.260

Centralization based on in-degree; modularity is Louvain modularity on undirected network.

The overall tendency of international organizations to cooperate with each other (reflected by density) indicates that international organizations were less likely to cooperate in 2018 and 2019 than they were in any of the years before. This signals an increase in fragmentation.

Connection in the network as a whole (reflected by the fraction of the giant component and the fraction of isolates) shows that there is consistently one large group (the giant component) that includes at least 88% of international organizations in every year. The rest of the international organizations are mainly isolates. Overall, therefore, the network of international organizations has consisted throughout of one large cluster, indicating a well-connected network, see figure 5.2. In 2018 and 2019, the giant component is slightly smaller compared to previous year, indicating that some international organizations 'break off' from the group and become isolates. This signals increasing fragmentation in 2018 and 2019.

We also analyzed the internal structure of the giant component. With regards to centralization, we see the highest values in 2015, 2016 and 2017. In those years, the network was most starshaped. This indicates that in those years, a small number of international organizations acted as central hubs for cooperation, corresponding to the decrease in fragmentation. In the two years after, 2018 and 2019, centralization decreases, indicating that there are to a lesser extent such central international organizations. This corresponds to the increased fragmentation in 2018 and 2019 that we just reported.

The average path length, which indicates the average number of 'steps' it takes for any international organization to reach another, had been the lowest in 2012 and 2014, indicating low fragmentation in those years—that is, the years *before* the SDGs were launched. In 2018, the average path length was highest, which indicates higher fragmentation. While these minimum and maximum values appear to follow the same V-shape in fragmentation as the other measures, the average path length shows more variance, so it must be interpreted cautiously.

As for modularity, we found that overall modularity is low, which indicates relatively low fragmentation *within* the giant component. This aligns with the visual representation of the network, see figure 5.2., showing one big cluster of international organizations, with few communities to be identified. Modularity is lowest in 2013, indicating that communities in the giant component were even less pronounced in 2013 compared to the other years. However, in none of the years it was possible to identify clear communities within the giant component with visual inspection, hence the overall low modularity values.

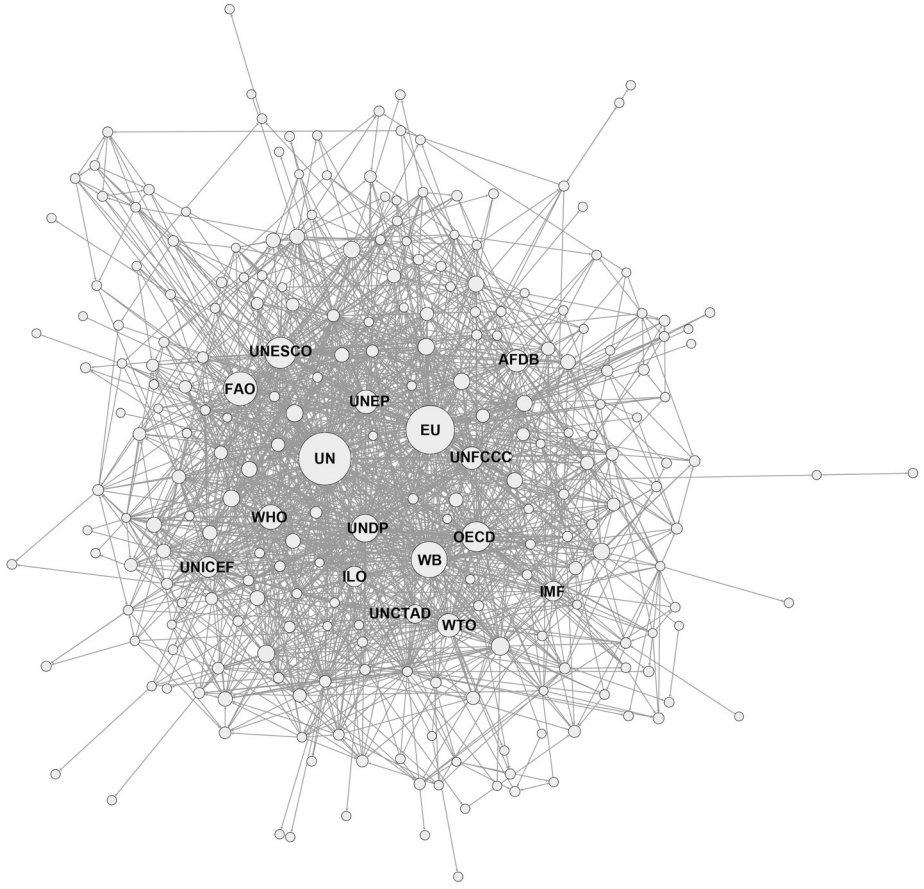


Figure 5.2. Visualization of the network of international organizations in 2019
The size of the node is proportional to the indegree, i.e. the number of incoming ties to a node. Node labels are displayed for nodes with an indegree of 25 or higher. AfDB = African Development Bank; EU = European Union; FAO = U.N. Food and Agriculture Organization; ILO = International Labour Organization; IMF = International Monetary Fund; OECD = Organization for Economic Development and Cooperation; UN = UN; UNCTAD = U.N. Conference on Trade and Development; UNDP = U.N. Development Programme; UNEP = U.N. Environment Programme; UNESCO = U.N. Educational, Scientific, and Cultural Organization; UNFCCC = U.N. Framework Convention on Climate Change; UNICEF = U.N. Children's Fund; WB = World Bank; WHO = World Health Organization; WTO = World Trade Organization.

In sum, several network measures point towards a decrease in fragmentation from 2012 to 2016 and an increase in 2017 to 2019. While fragmentation first decreased after adoption of the SDGs in 2015, it again increases thereafter. There is no stable long-term trend towards integration after 2015, so we found no evidence supporting proposition 1. In short, despite their strong language of advancing policy coherence and institutional integration, *the launch of the SDGs does not correlate with reduced fragmentation in the system of international organizations.*

5.4.2. Siloization among international organizations is increasing

We found that siloization among international organizations has increased over time, in two directions.

First, siloization within the three dimensions of sustainable development (economic, social, environmental) is increasing: international organizations tend to cooperate more with international organizations that work on the same dimension (Proposition 2). We found that the percentage of ties within a sustainability dimension is increasing over time, signifying that international organizations are clustering around economic, social, and environmental issues, see figure 5.3. This provides evidence against proposition 2; that after adoption of the SDGs the network of international organizations would become less fragmented between the social, economic, and environmental dimensions of sustainable development.

Second, international organizations cooperate more with organizations that work in the same SDG issue area (Proposition 3). We found that the percentage of ties within an issue area has increased over time, see figure 5.4. Thus, out of all cooperation occurring between international organizations, increasingly more occurs between organizations

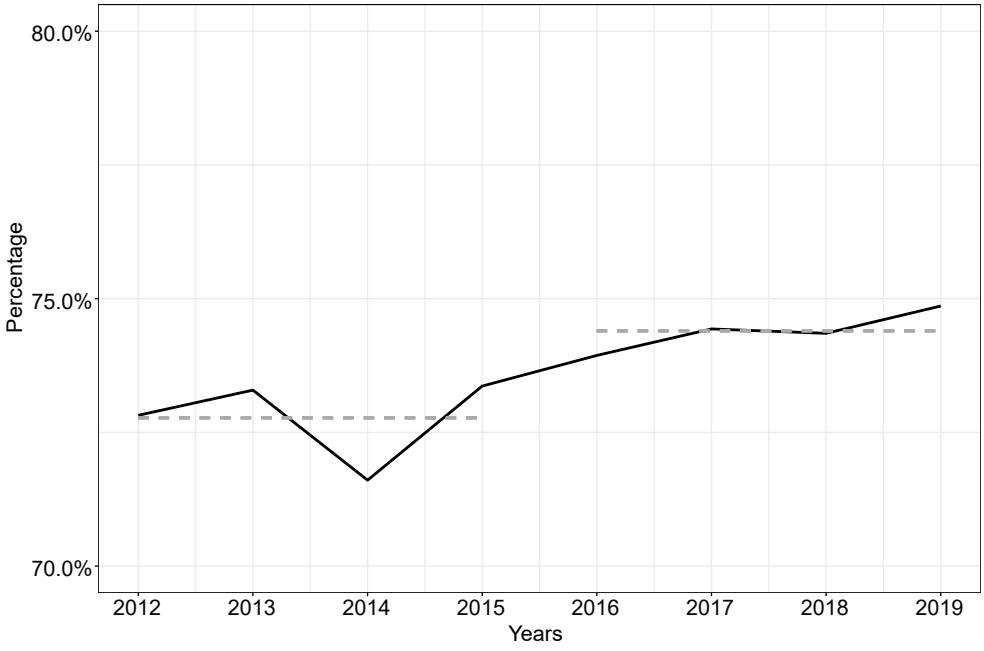


Figure 5.3. Percentage of ties within a sustainability dimension

Ties occurring within a sustainability dimension, as percentage of all ties in the network, over time. The grey lines indicate average values in the years before, 2012-2015, and after, 2016-2019, the SDGs were implemented.

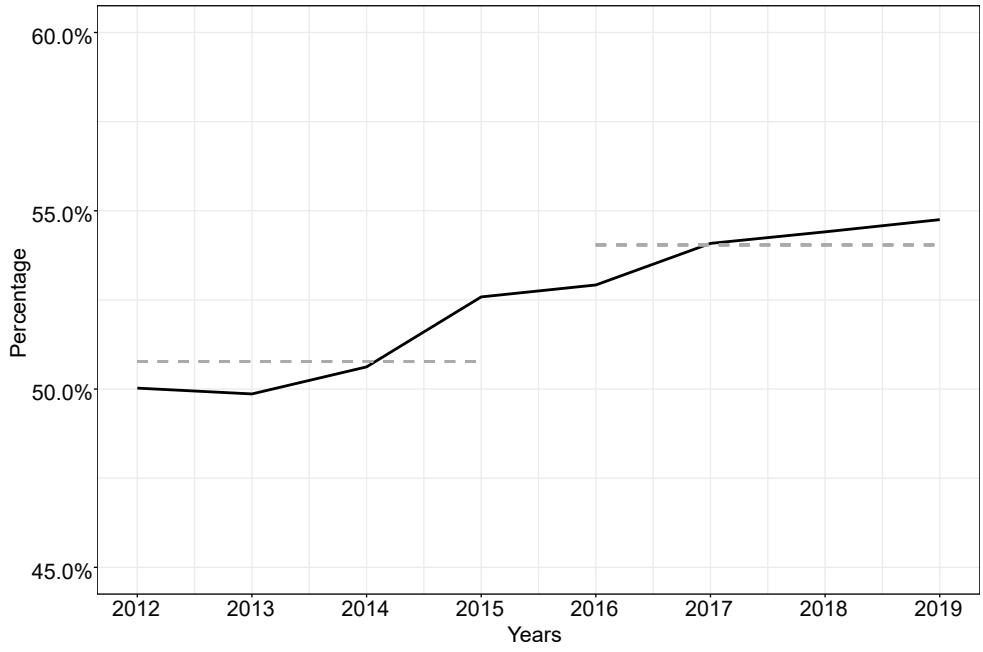


Figure 5.4. Percentage of ties within one of the 17 issue areas of the SDGs
Ties occurring within an issue area, as percentage of all ties in the network, over time. The grey lines indicate average values in the years before, 2012-2015, and after, 2016-2019, the SDGs were implemented.

that work in the same issue area around one SDG. In other words, international organizations are clustering around the 17 issue areas, resulting in a network that is increasingly fragmented between these 17 areas. T*his supports proposition 3 that the network of international organizations has become more fragmented between the 17 issue areas covered by the SDG after the adoption of the goals.*

The increase of ties both within an issue area and within a sustainability dimension indicates a process of 'siloization' (Bernstein, 2017). This siloization seems to proceed quite steadily over time, with no clear change when the SDGs were implemented. The SDGs appear to neither reduce the silos nor to exacerbate them.

Our analysis has revealed further information on the directions of siloization.

We found that international organizations that focus on economic, social or environmental policies display different tendencies toward inter-organizational cooperation and siloization. Social international organizations are least likely to cooperate with others outside their social dimension; the social dimension is hence most siloized. Environmental international organizations, conversely, are most inclined to cooperate with

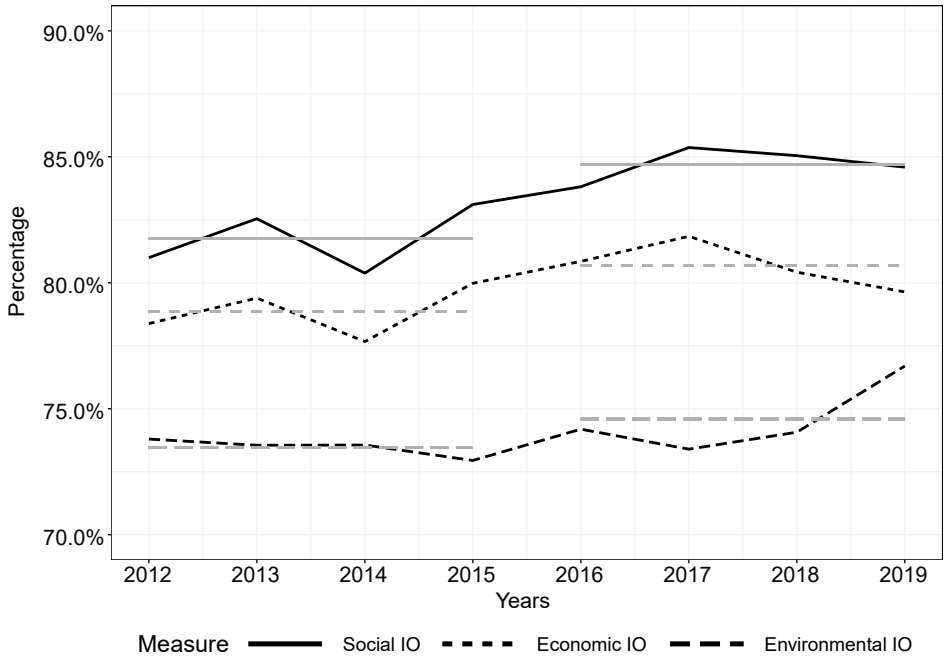


Figure 5.5. Siloization: Economic, social and environmental international organizations
Ties within a dimension, for international organizations that focus on social (solid), economic (short dash), or environmental (long dash) policy, as percentage of all ties in the network. The grey lines indicate average values in the years before, 2012-2015, and after, 2016-2019, the SDGs were implemented.

others outside their dimension, yet this inclination has diminished over time, especially in 2019, see figure 5.5. For all three types of international organizations, either working on the economic, social, or environmental dimension, ties within that dimension have increased after the adoption of the SDGs. All types of international organizations have thus become more inclined to cooperate with others in their own dimension rather than with international organizations in other dimensions.

In addition, we found substantial variation between international organizations that belong to the UN system and those that do not, see figure 5.6. International organizations outside the UN system have a higher percentage of ties within a dimension than international organizations in the UN system. In other words, organizations that belong to the UN system are more likely than organizations outside the UN system to cooperate across the three dimensions of sustainable development. This difference has become more pronounced after the SDGs were implemented. For the UN system, the number of ties within a sustainability dimension decreases in 2012-2017, indicating more cooperation across the three dimensions and hence less fragmentation. Yet in 2018 and 2019, ties within a sustainability dimension increase sharply again, though it is still lower

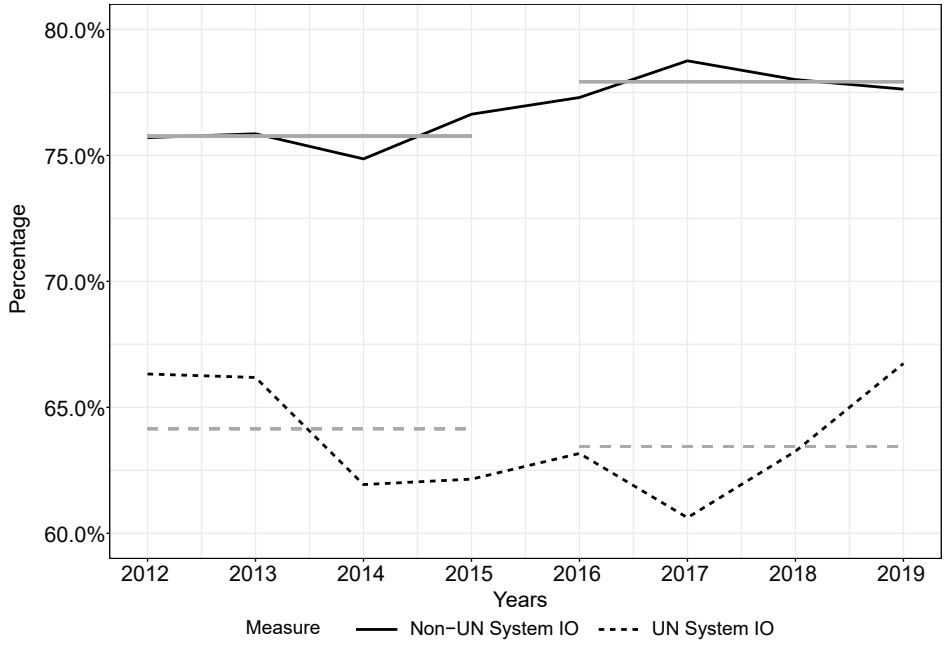


Figure 5.6. Siloization: UN system international organizations

Ties within a dimension for international organizations that belong to the UN system (dash) or do not (solid), as percentage of all ties in the network. The grey lines indicate average values in the years before, 2012-2015, and after, 2016-2019, the SDGs were implemented.

than before the adoption of the SDGs. For non-UN organizations, the number of ties within a dimension steadily increases and is higher after the SDGs were implemented. These results indicate that non-UN system organizations tend to cluster their cooperation around economic, social, and environmental dimensions, more so than UN system organizations do. This difference is increasing until 2018.

Finally, international organizations with a global scope are more likely to cooperate across different sustainability dimensions than international organizations with a regional scope, and this difference has increased since the adoption of the SDGs, see figure 5.7. For regional international organizations, the percentage of ties within a sustainability dimension is increasing over time, indicating increasing siloization driven by the same organizations. For the global international organizations, ties within a sustainability dimension are quite stable over time, showing no clear difference before and after the adoption of the SDGs.

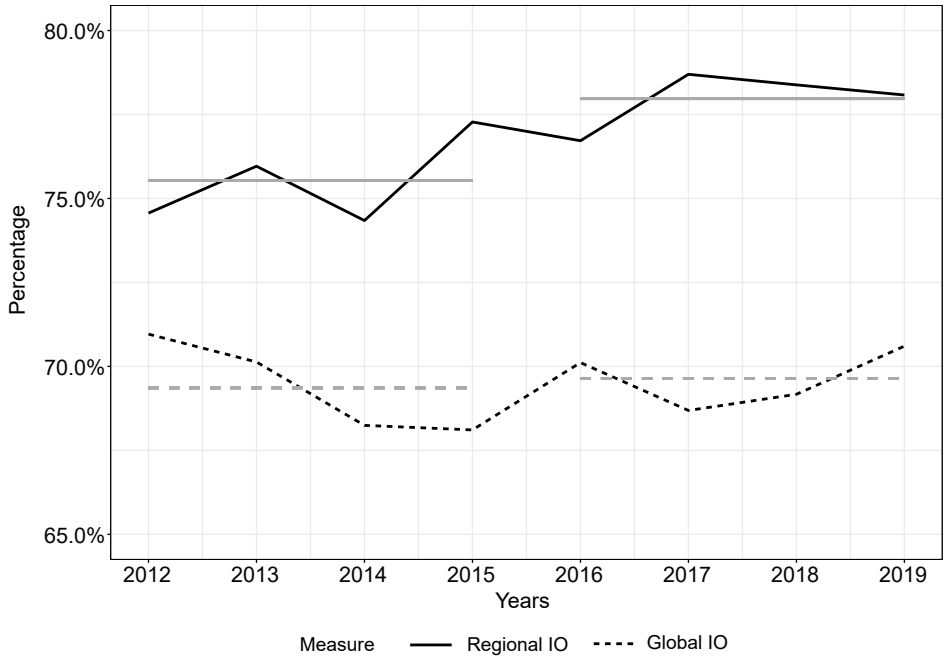


Figure 5.7. Siloization: Global and regional international organizations
Ties within a dimension for international organizations that have a global (dash) or regional (solid) scope, as percentage of all ties in the network. The grey lines indicate average values in the years before (2012-2015) and after (2016-2019) the SDGs were implemented.

5.5. Discussion

This chapter shows that despite efforts to present the SDGs as a holistic and integrated framework, fragmentation has not decreased in the hyperlink network of international organizations since the global goals were agreed. While our results indicate a decrease in network fragmentation in 2012-2017, this increased again in 2018-2019. Furthermore, we found that siloization between issue areas has increased. International organizations increasingly focus on the network around their own issue areas and sustainability dimension rather than giving attention to international organizations outside their own area. While the overall trend of increasing siloization is clear, there are some clear differences between groups of international organizations. Siloization is strongest with international organizations working on the economic and social dimensions of sustainability; those with a regional scope; and those outside the UN system.

In interpreting our results, it should be noted that we look here only at one specific measure of fragmentation, hyperlink networks. Nevertheless, we believe our findings yield several important insights for strategies of global governance through goals. First,

issue-specific global goals strengthen silos around issue areas. The SDGs are not having the effect of 'breaking down silos' that they were intended to have. This is in line with expectations and findings of several scholars who warned that having separate, issue area-specific goals would lead to the reinforcement of silos (Bernstein, 2017; Gomez & Parigi, 2015; R. E. Kim, 2016; Nilsson et al., 2009; Pittman & Armitage, 2019; Underdal & Kim, 2017; Zelli & van Asselt, 2013). The same was observed with the earlier Millennium Development Goals, which encouraged implementation approaches that were judged later as 'vertically structured and conceptually narrow' and lacking attention for issues outside the goals (Bisbee et al., 2020; Fukuda-Parr, 2014, 2016).

Second, global goals have different effects on different types of international organizations. Our findings showed that in international organizations that are part of the UN system, cooperation within the own sustainability dimension has decreased, indicating that here, the economic, social and environmental silos are becoming less pronounced for UN system international organizations. Global goals may here bring an orchestration effect within UN system organizations, even though not showing this effect across the board.

While the latter indicates some effect of global goals, both insights together draw into question the functioning of goals as a global governance tool, at least regarding their envisaged role as orchestrators of international organizations and institutions (Bernstein, 2017). After all, the goals are intended to apply to all international organizations to increase cooperation and strike a balance between economic, social, and environmental policy objectives. If only certain groups of international organizations try to increase cooperation across issue areas and sustainability dimensions, this conflicts with the intention of the goals to address global issues in an integrated and holistic manner. In addition, that we observed effects of the SDGs mainly within the UN system may suggest that the goals tend to influence organizations that had a major role in their development, but less so other international organizations.

For the groups where no increased cooperation was observed, it remains a question why this is the case, despite the strong call in the SDGs for integration and the breaking down of silos. While more research is needed to elucidate this, the insights from this study combined with other studies provide several fruitful avenues towards an explanation.

One premise of this study—following the UN narrative in this field—is that international organizations subscribe to the SDGs and are willing to accept their steering effects. This premise could simply be false. It would instead be rather consistent with our data to assume that international organizations, especially those outside the UN system and

those with an economic focus or regional scope, 'resist' being governed by global goals because they possibly prefer to focus on their own goals and targets (Bernstein, 2017). Earlier mandates and established structures and procedures may trump the global agreement on the SDGs as a guiding principle (Bernstein, 2017; F. Biermann & Siebenhüner, 2009; Underdal & Kim, 2017). In this case, 'business as usual' continues, and the siloization that we observed would indicate a continuation of the siloization already occurring before 2015. A promising avenue of further research, therefore, could be to investigate to what extent international organizations subscribe and are integrating the SDGs into their work.

However, this view of 'resisting goals' does not fit the evidence completely. As international organizations strive to remain valuable to their principals, they are known to react to a changing global context (Abbott et al., 2016; de Wit et al., 2020), which would include adjusting their programs and efforts to the content of global goals (Bridgewater et al., 2014). A closer inspection of our website data also showed that most international organizations, also outside the UN system, do mention the SDGs on their websites: A brief text analysis of our website data reveals that in 2019, all UN international organizations and more than 60% of non-UN international organizations use the SDGs at least once on their website, see also chapter 6. So the SDGs are considered relevant by many international organizations. Several qualitative studies also show that at least some international organizations do internalize the SDGs (Censoro et al., 2020; Downie, 2020a; Montesano et al., 2021). Thus, it seems likely that most international organizations primarily see the SDGs as separate goals rather than an integrated agenda, leading to the cherry-picking of those goals that best fit their agenda, as has been observed for other governance actors such as business sector and national governments (Allen et al., 2018; Forestier & Kim, 2020; Kornieieva, 2020; Schmidt-Traub et al., 2017). This focusing on only the 'own' goals would lead to the reinforcement of silos over time (Boas et al., 2016; Stevens & Kanie, 2016), as we have observed in this study. A future avenue of research could focus on whether and why international organizations view the SDGs as separate goals rather than an integrated framework, and whether this leads to cherry-picking SDGs and to focusing cooperation efforts around certain SDGs.

Finally, research could focus on whether the siloization observed in this chapter results from a lack of *willingness* or lack of *ability* of international organizations to cooperate beyond their own issue area. The SDGs are internally incoherent, with some inherently conflictive targets, and many interdependencies between the targets are context-specific (Allen et al., 2019; Boas et al., 2016; Lusseau & Mancini, 2019; Nilsson et al., 2009; Underdal & Kim, 2017; Vandemoortele, 2018; Weitz et al., 2018). Thus, to truly come up with 'integrated solutions' that account for interdependencies and spillovers, knowledge and resources are required to elucidate the 'ripple effects' of the efforts of one organiza-

tion. Many international organizations may lack the resources and ability to account for the many interdependencies between the SDGs, and engage in cooperation activities on top of that, despite a willingness to do so. Alternatively, international organizations might simply lack interest in cooperating more outside their own issue area. Calls for extensive cooperation can be perceived as threatening the autonomy of international organizations, especially so for the smaller ones with less resources and authority (R. Biermann, 2008; Underdal & Kim, 2017). In addition, international organizations may be reluctant to cooperate more outside their own issue area as they do not intend to tread upon other organizations' mandates. Further research in this area could, for example, focus on perceptions of the SDGs by international organizations to assess whether they are generally perceived as helpful and how the SDGs relate to the own mandate.

Methodologically, there are several limitations of this study that may be improved upon in future studies. Firstly, as described, in our longitudinal study we could not discern effects of the SDGs from effects of other global trends that may have influenced the network of international organizations, as there is no group of international organizations that is not 'exposed' to the SDGs and could have served as a counterfactual. To discern the steering effects of the goals from other ongoing global changes, additional qualitative research is needed. Secondly, we applied a rather novel method, that is, the analysis of hyperlink data. While the analysis of hyperlinks in global governance is to some extent established, the use of web archives for network analysis is still in its infancy. More applications of this method are necessary, within and outside global governance, to get a clearer view of its strengths and weaknesses. In addition, while hyperlinks are a valuable proxy for cooperation and fragmentation, further studies using other quantitative and qualitative measures to assess the influence of the SDGs on fragmentation would be useful to confirm our findings. Finally, as far as we are aware, this is the first study to assess fragmentation with a consolidated set of network measures (R.E. Kim, 2020). While the measures overall point in the same direction, some were less clear than others. More refinement of a network model for measuring fragmentation may be useful.

5.6. Conclusion

This chapter shows that since the implementation of the SDGs, institutional integration among international organizations has not increased. Instead, siloization has increased around the 17 SDG issue areas as well as around the economic, social and environmental dimensions of sustainable development. International organizations are central to addressing the issues encompassed in the SDGs (Cormier, 2018; Sachs, 2006; Stiglitz, 2006), and the consequences of continued siloization could be severe. Working in silos may hamper the exchange of novel ideas and knowledge amongst international

organizations that is required to deal with the complex and globally interconnected problems that the SDGs aim to address, and it might limit options for joint standards, policies, and transformative norm development (Bodin, 2017; Borgatti & Halgin, 2011; Burt, 2004). Moreover, such effects may trickle down to the national level because of the significant role that international organizations have in shaping domestic policies in many countries (Abbott & Bernstein, 2015; Cormier, 2018; Tosun & Peters, 2018).

While the eventual impact of the SDGs can only be assessed towards the end of their implementation period—that is, by 2030—recent data suggest that the world is not on track to achieve them. Progress on many targets has stalled or reversed (UN, 2021). In the end, the onus is on political actors at all levels to implement the goals. A reduction of fragmentation and siloization, at all levels of global sustainability governance and cutting across policy areas, is indispensable in achieving the SDGs (Kanie, 2017; Nilsson, 2017). This chapter has shown that, so far, the opposite is happening.

The impact of the Sustainable Development Goals on policy integration in 159 international organizations

This chapter is based on:

Bogers, M., Biermann, F., Kalfagianni, A., & Kim, R. E. (2022). Sustainable Development Goals fail to advance policy integration: A large-n text analysis of 159 international organizations. *Environmental Science & Policy*, 138, 134-145. https://doi.org/10.1016/j.envsci.2022.10.002

Abstract

While most of today's global challenges are deeply interconnected, international organizations often operate in silos. The Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, have been advanced as a new agenda to break up these silos and to better integrate environmental, social and economic policies. Yet little is known about whether the SDGs had any effects in advancing policy integration. To investigate this, we conducted a quantitative content analysis on the website texts of 159 international organizations. Our study addresses two questions: (1) whether international organizations increasingly engage with the SDGs in their work; and (2) whether this engagement increased their attention for policy integration. Our results show that the SDGs are indeed increasingly used by most international organizations. However, this has not affected policy integration. We conclude with some possible explanations for this lack of effect and propose several research avenues.

6.1. Introduction

In this chapter, we focus on policy integration at the meso-level. Our key objective is to study policy integration within a large set of international organizations, and assess what factors, including the use of the SDGs, influence policy integration. As described in section 1.4., the SDGs are unique in that they are a first attempt to truly integrate the three pillars of sustainable development – the economic, social, and environmental (F. Biermann et al., 2017; UN, 2015). The 17 SDGs are consistently presented as 'integrated and indivisible' in nature, with numerous explicit references between the different goals (Le Blanc 2015). The central idea is that none of the goals can be achieved without advancing on all goals. Accordingly, policies on one goal should not negatively affect policies on other goals. It is up to political actors to come up with 'integrated solutions' towards the achievement of all goals.

Yet, little is empirically known about the effects of the SDGs on policy integration, that is, on integrating aims or concerns across policy domains. This lack of knowledge is especially profound when it comes to the effects of the SDGs on the hundreds of international organizations that are expected to play a central role in the global governance of the policy domains covered by the SDGs (Cormier, 2018; Eilstrup-Sangiovanni, 2020; Harrington, 2020; Sachs, 2006; Stiglitz, 2006; van Driel et al., 2022). So far, international organizations have often been found to operate in 'silos,' blocking the integration of important policies (Nilsson et al., 2009; see also chapter 5). If the SDGs had a positive effect on policy integration among international organizations, broad progress towards sustainability would be more likely (P. M. Haas & Stevens, 2017; Nilsson et al., 2009; Stafford-Smith et al., 2017).

But did the SDGs have an effect on policy integration in international organizations? This is the key concern of this chapter. To better understand whether the SDGs have facilitated policy integration, we present here the findings of a quantitative content analysis on over 500,000 pages of website texts of 159 international organizations at three points in time, 2015, 2017 and 2019. Using automated keyword frequency analysis, we measured the use of the SDGs among international organizations and their subsequent attention for policy integration. We assessed whether the SDGs were able to facilitate one of their central ambitions - the integration of policies across policy domains - and to what extent international organizations' characteristics influence policy integration.

Specifically, we look at discursive political impact of the SDGs (F. Biermann, Hickmann, & Sénit, 2022b), and whether this subsequently has an effect on policy integration. The latter is assessed here as an increase in attention for policy integration on international organizations' websites, as measured by keyword frequencies. As it is conceivable that

an increase in attention for policy integration will never lead to more integrated policies in practice, we thus assess a 'soft form' of policy integration (Azizi et al., 2019). Nevertheless, any changes in attention of international organizations because of the SDGs may be a first indication that more profound change is possible (F. Biermann, Hickmann, & Sénit, 2022b).

This study makes three main contributions. First, we advance the knowledge base on the effects of global governance through goals, particularly related to policy integration at the global level. So far, this knowledge base is limited, especially when it comes empirical analyses (Beisheim et al., 2022). Second, we contribute to the literature on international policy integration. By assessing what organizational characteristics increase policy integration, we add to our understanding of policy integration in international organizations (Tosun & Peters, 2018), which is important for global sustainable development (F. Biermann, Davies, et al., 2009; Bornemann & Weiland, 2021; Nilsson & Persson, 2017). Third, we contribute methodologically by using an innovative approach to measure policy integration that could be applied in many other research settings. This may provide new opportunities for research on policy integration, which has relied heavily on small-N studies so far (Trein et al., 2020).

The rest of this chapter is structured as follows. First, we define the concept of policy integration and describe how the SDGs and characteristics of international organizations may lead to increased policy integration among international organizations. Second, we elaborate on our data and methodological approach. Third, we report the results of the statistical analyses. Finally, we discuss possible explanations of our findings and recommend future research directions.

6.2. Policy integration in international organizations

Policy integration has been discussed since the 1980s in many different forms and terminology. Often used terms include policy mainstreaming, policy coordination, holistic governance and – in the environmental field – environmental policy integration (Nilsson et al., 2012; Runhaar et al., 2020; Tosun & Lang, 2017). The core idea of policy integration is that policies in one domain should take into account potential side-effects in other domains, so that policies coming from different domains or organizations do not each other (May et al., 2006; Tosun & Lang, 2017). Following Tosun and Lang (2017), we define policy integration here as integrating aims or concerns from one policy domain into another within one organization (see section 1.2.2). This is sometimes also referred to as horizontal policy integration (Duraiappah & Bhardwaj, 2007; Geerlings & Stead, 2003; Lafferty & Hovden, 2003). Policy integration can take place on multiple 'objects', includ-

ing policy inputs, outputs, procedures, instruments, and goals (Bornemann & Weiland, 2021; Candel & Biesbroek, 2016; Nilsson et al., 2012; Runhaar et al., 2020). Given our interest in the SDGs, we focus on the latter, the integration of policy goals.

The concern for policy integration is a response to the increasing functional fragmentation of governance subsystems (see section 1.2). Increasingly, actors work on domain-specific policies to serve their domain-specific policy goals. The myopic nature of these subsystems becomes problematic when societal issues span multiple policy domains (Candel & Biesbroek, 2016; Jochim & May, 2010), as is the case for many sustainability issues today. Globalization and environmental change have led to higher interconnectedness between societal issues across domains, space and time. Combined with uncertainty and ambiguity, such cross-cutting issues have been described as 'wicked problems' that governance actors struggle to deal with (Anthes, 2019; Candel & Biesbroek, 2016). Policy integration is considered essential to solving these cross-cutting issues (Candel & Biesbroek, 2016; Jochim & May, 2010; Runhaar et al., 2020; Stafford-Smith et al., 2017; Termeer et al., 2015).

At the international level, policy integration is often called for because functional fragmentation among international organizations and institutions is especially strong there (P. M. Haas & Stevens, 2017; Nilsson et al., 2009). International organizations operate in a functionally fragmented manner with rapid proliferation and specialization over past decades (Anthes, 2019; Barnett & Finnemore, 1999; Young, 2011b; Zürn & Faude, 2013; see also chapter 5). This has led to calls for international organizations to be more aware of the impact of their activities on policy domains outside their policy area (Nilsson, 2004; Perez, 2005). Indeed, policy integration has been on the agenda of many international organizations since the 1990s. For example, the International Labour Organization (ILO) created a Policy Integration Department more than two decades ago to increase internal policy integration and to support governments with integrated cross-sectoral policies (Rodríguez-Pose, 2001; Tosun & Lang, 2017). Similarly, the Organisation for Economic Co-operation and Development (OECD) has published since the late 1990s a series of reviews and assessment frameworks to increase policy integration (see for example OECD 1999, 2001 and 2015).

Several mechanisms have been proposed to increase policy integration among international organizations, including interplay management (Oberthür, 2009; Stokke, 2020), hierarchization (F. Biermann, Davies, et al., 2009; R. E. Kim et al., 2020) and orchestration (Abbott et al., 2015, 2020). Yet given the lack of institutional structures as compared to those at national levels, enhancing policy integration among international organizations remains difficult (Nilsson et al., 2009; Oberthür, 2009).

Governance through global goals, such as the SDGs, is another mechanism that is increasingly advanced to increase international policy integration (see also section 1.2). Global goals are internationally agreed non-legally binding policy objectives that are time-bound, measurable and aspirational in nature, with the SDGs being more comprehensive and more focused on interconnections than previous global goals (F. Biermann et al., 2017; Chasek et al., 2016; see also section 1.4). The SDGs thus seem to be a more promising attempt to integrate a broad range of issues into one coherent agenda, potentially leading to a more favorable environment for policy integration (Le Blanc, 2015; Nilsson & Persson, 2017; Stevens, 2017).

However, if the SDGs are to have any effect on policy integration among international organizations, the latter must first use the SDGs as a guiding framework. Given the lack of binding force of the SDGs, international organizations are formally not obliged to use or work towards the SDGs (see also section 1.4.1). Yet, even without formal obligation, there might be a strong imperative for collective action and attention towards the goals, creating political and social pressure for all involved actors to align their work with the goals (Fukuda-Parr, 2014; Fukuda-Parr & McNeill, 2019; P. M. Haas & Stevens, 2017; Young, 2017). International organizations are influenced by this global environment and known to react to a changing global context (Abbott et al., 2016; de Wit et al., 2020). Thus, it is conceivable that international organizations adopt the SDGs as a guiding framework and adjust their programs and efforts accordingly (Bridgewater et al., 2014).

Once international organizations use the SDGs as a guiding framework, this might lead to more policy integration. The SDGs are presented as 'integrated and indivisible' in the 2030 Agenda (UN, 2015), and there are many cross-references between the goals in the 169 targets. There is even a specific target, SDG 17.14, to "enhance policy coherence for sustainable development" (Le Blanc, 2015; UN, 2015). The SDGs are thus explicitly designed to facilitate integration between policy domains (Chasek et al., 2016; Elder & Olsen, 2019). The SDGs may also raise the salience of a broad range of issues among international organizations (Dahl, 2012; Janoušková et al., 2018), including issues outside their specialization. This increased awareness of issues in other policy domains may lead to incorporation of those issues into the work of an international organization. In addition, many resources such as guidelines and toolkits have been made available to support integrated SDG implementation (Allen et al., 2018; International Council for Science, 2017). If used, these guidelines may facilitate policy integration as well.

Indeed, a handful of case studies suggest increased policy integration through the SDGs. For example, studies on the ILO and the Asian Development Bank (ADB) have shown that the use of the SDGs as a framework had led to more policy integration in

both organizations. The SDGs increased openness to integrated sustainability in the ILO (Montesano et al., 2021) and facilitated learning across policy domains in the ADB, resulting in more integrated approaches in project development and implementation (Censoro et al., 2020).

In sum, there is broad agreement in the literature that the success of the SDGs depends on the extent to which actors, especially international organizations, use these goals as a new framework of reference and pursue the goals in an integrated manner (Stafford-Smith et al., 2017; Underdal & Kim, 2017). Taking up the SDGs in policies and programs may thus trigger incremental change towards policy integration (Costanza et al., 2016; see also chapter 2). This is the central hypothesis of this chapter: *The use of the SDGs as a guiding framework leads to higher levels of policy integration in international organizations.* To investigate this hypothesis is the focus of this chapter.

In addition to this core hypothesis, we analyzed to what extent certain characteristics of international organizations affect any observed increase of policy integration in international organizations. We expect four characteristics of international organizations to possibly have some explanatory power.

First, international policy integration has historically focused on the integration of environmental issues into non-environmental policies (F. Biermann, Davies, et al., 2009; Lafferty & Hovden, 2003; Tosun & Lang, 2017). Protecting the environment is widely regarded as a crosscutting theme (Tosun & Peters, 2018), and international environmental organizations have been working on policy integration for a longer time. *We thus expect environmental organizations to show higher levels of policy integration than international organizations working on non-environmental issues.*

Second, a key requirement for policy integration is having the resources to facilitate it (Ross & Dovers, 2008). For example, achieving higher intra-organizational policy integration requires interorganizational learning, cross-department coordination and in-depth analysis of issue areas and connections. All these activities require resources such as knowledge, staff and finances (Meijers & Stead, 2004; Ross & Dovers, 2008; Russel et al., 2018; Widmer, 2018). *We thus expect larger international organizations to show higher levels of policy integration given their greater availability of resources.*

Third, international organizations that work in multiple policy domains are expected to be knowledgeable on many diverse issue areas and how these areas relate. They may also be more incentivized to address connections between policy domains, in order not to contradict their work in one domain by their work in another domain (Tosun & Peters,

2018). *We thus expect international organizations working in multiple policy domains to show higher levels of policy integration than those working on a single policy domain.*

Fourth, the UN is the main international organization responsible for SDG monitoring, and the UN has provided resources for policy integration to other international organizations, both before and after the launch of the SDGs (see for example UN 2013; PAGE 2016). In addition, the UN agencies collectively have knowledge available across the entire scope of policy domains reflected by the SDGs, allowing for more in-depth analysis of connections between domains. While policy integration within the UN system is far from achieved (Bauer & Biermann, 2004), *we expect higher levels of policy integration within UN organizations than within international organizations outside the UN system.*

6.3. Research design and methods

6.3.1. Quantitative content analysis of website texts

To assess the use of SDGs as a guiding framework and its effect on policy integration, we conducted a quantitative content analysis on the website texts of 159 international organizations from the entire years 2015, 2017 and 2019. International organizations are defined in this study as organizations operating at the international level that have at least three states as members, have a permanent secretariat, and hold at least one meeting every four years. Our study is thus a retrospective longitudinal study. We conducted regressions with a two-year time-lag, that is, our independent variables are obtained for 2015 and 2017, and our dependent variables for 2017 and 2019.

Quantitative text analysis is increasingly common in political science (Bell & Scott, 2020; Lam et al., 2019; Linder et al., 2020; Wilkerson & Casas, 2017; see also sections 3.4 and 4.3.1). Several earlier studies have used text analysis to identify whether (international) organizations mention the SDGs (Borchardt et al., 2020; Horne et al., 2020; LaFleur, 2019; Sebestyén et al., 2020; Tremblay et al., 2021). While many of such studies use policy documents, we relied in our analysis on website texts as an alternative. Websites are a unique source in global governance research, as they are machine-readable and systematically available for a large set of international organizations across policy domains and countries. Over the past decades, websites and other digital media have become a vital communication channel in international relations (Adesina, 2017). International organizations, too, have increased their digital communication efforts to promote their activities and mandates more effectively (F. Biermann & Siebenhüner, 2009; Ecker-Ehrhardt, 2018b). Websites are part of extensive communication strategies, often overseen by dedicated departments (Ecker-Ehrhardt, 2018a). The content of a website is an outcome of the organizational context in which it is created (Riffe et al., 2019). As

such, we expect international organizations' websites to contain vital, carefully curated and up-to-date information about their goals, policies and activities, and we thus used websites to assess to what extent international organizations use the SDGs as a guiding framework and whether they are integrating policies.

To assess SDG use and policy integration by international organizations, we used keyword frequency counts. Automated keyword frequency analysis is gaining traction as a novel approach to assess policy integration (Azizi et al., 2019; Biesbroek et al., 2020; Bornemann & Weiland, 2021; Duraiappah & Bhardwaj, 2007; Gregorio et al., 2017; Scobie, 2021; W. Yang et al., 2018). For the four characteristics of international organizations that may affect policy integration as described above, we relied on manual coding and data from the Correlates of War dataset (Pevehouse et al., 2020; Wallace & Singer, 1970).

6.3.2. Operationalization of variables

We now lay out how we measured our variables.

(1) To test our main hypothesis – the use of the SDGs as a guiding framework – we used the indicator *SDG Use* as an independent variable. We expect that if an international organization uses the SDGs as a guiding framework, they will mention the SDGs, the 2030 Agenda and related terms on their website. We assumed that *the more often* the SDGs are mentioned on a website, *the more important* the SDG framework is in guiding the activities of an international organization. We thus operationalized the indicator *SDG Use* by counting the frequency of SDG keywords, such as "SDG", "Sustainable Development Goal" or "2030 agenda" and dividing this by the total words of a website. For the full list of SDG keywords, see supporting material, table S6.1.

(2) To measure policy integration as our dependent variable, we used two indicators, (2a) *Integration Saliency* and (2b) *Policy Domains Per Page*.

(2a) *Integration Saliency* indicates the importance of policy integration for an international organization. What is of interest here is the importance of policy integration as a general concept, not related to specific domains or policies. We measured the importance of policy integration by the degree of attention this concept receives on an international organization's website, using keyword counts (Warntjen, 2012). As the concept of policy integration applies to all domains, also those outside the domains of the SDGs, this indicator could also measure attention for policy integration not related to any of the SDGs. However, we filtered the international organizations in our set to have their main work area in at least one of the SDGs (see section 6.3.3). Hence, any policy integration described on the website will be relevant to at least one of the SDGs. The keywords that we used to assess policy integration as a concept include 'policy in-

tegration', 'interlinkages', 'nexus' and 'policy coherence'; their full list can be found in the supporting material, table S6.2. We operationalized *Integration Saliency* as the count of policy integration keywords divided by the total number of words on a website. *Integration Saliency* is a comparative measure to assess change over time in the importance of policy integration to an international organization.

(2b) The indicator *Policy Domains Per Page* assesses how many policy domains co-occur on average on the webpages of an international organization. We assume here that if an international organization discusses multiple policy domains on a single webpage together, this signals integrating aims or concerns from one policy domain into another in that organization, that is, policy integration (Duraiappah & Bhardwaj, 2007). To operationalize *Policy Domains Per Page*, we first identified for each page of a website whether it contains keywords that relate to specific policy domains. The keyword set to identify policy domains was developed by Ramirez et al. and Romero-Goyeneche et al. (Ramirez et al., 2019; Romero-Goyeneche et al., 2021, 2022) and contains 2,155 keywords or keyword combinations that can be coupled to the 17 policy domains represented by the SDGs (see also sections 4.4.4. and 4.5.5). For example, the keyword combination *Income+Poverty* is related to the policy domain 'poverty' (SDG 1). The keyword set was developed specifically to couple SDG labels to texts, and was created using the 17 SDGs as guide. The keyword set was optimized to identify multiple SDG issue areas in a single text to assess connectedness between the SDGs, making it especially useful for the purpose of our study.

If a webpage contained at least three keywords related to a policy domain, we considered it a page that covers that policy domain. We discarded webpages that do not cover even one policy domain. A webpage can thus cover at least one and up to 17 policy domains. Subsequently, we assessed for each international organization the average number of policy domains covered per webpage, which is our *Policy Domains Per Page* indicator. The more policy domains are discussed jointly by an international organization, the higher the value of *Policy Domains Per Page*, indicating higher policy integration in an international organization. Like the indicator *Integration Saliency*, also the indicator *Policy Domains Per Page* is a comparative measure to assess change over time rather than assessing an absolute value.

(3) To assess characteristics of international organizations that might affect policy integration, we used four indicators: *Domain Scope, Environmental IO, IO Size* and *UN System*.

For *Domain Scope* and *Environmental IO*, we first classified each international organization to one or more main policy domains, based on their self-reported 'vision' or 'mission statement' on their website. Coding was done separately by two researchers

and discrepancies were discussed to come to agreement. Based on this coding, we operationalized the indicator *Domain Scope* as follows: If an international organization works in one policy domain, it is coded as 'single-domain'; if it works on two or three policy domains, it is coded as 'multi-domain'; if on more, it is coded 'omni-domain'. The latter is the case for example for the European Union and other regional collaboration organizations collaborating on a broad range of topics. For the indicator *Environmental IO*, we coded the indicator *Environmental IO* as '1' if an international organization is active in climate change or ocean, water or land protection, or '0' otherwise.

The indicator *IO Size* was operationalized by the number of members of an international organization. Data on membership count was obtained from the Correlates of War dataset and supplemented with manual data collection where necessary.

Lastly, the indicator *UN System*, was coded as '1' if an international organization is part of the UN system, or '0' otherwise. We coded this indicator manually.

6.3.3. Data collection and processing

Data collection consisted of two processes: first, the collection of data on the international organizations themselves, and second, the collection of website texts.

First, we collected and coded international organizations. We compiled the set of international organizations for this study based on three data sources. First, all organizations included in the Correlates of War International Governmental Organizations dataset (Version 3) (Pevehouse et al., 2020; Wallace & Singer, 1970) This set includes international organizations that have at least three member states; hold regular plenary sessions at least once every ten years; and have a permanent secretariat and headquarters. We excluded international organizations that did not have member states from 2009 onward. Second, we included all subunits of the UN that fall directly under the General Assembly and Economic and Social Council. These subunits operate with high autonomy, often with their own leadership and financial resources and are thus considered international organizations in their own right in this study. Following the UN system chart of 2019 (UNDGC, 2019), we included thus all specialized agencies, funds and programs, research and training entities, and regional commissions of the UN. Third, we included all organizations that have been appointed by the UN as 'SDG indicator custodians' – organizations appointed to disseminate knowledge and collect data on specific SDG targets (UN, 2019b). The international organizations were coded on several indicators, as described above. Given our interest in policy integration related to the SDGs, international organizations were discarded from the set if they did not work on any of the policy domains of the SDGs.

Second, we collected website texts for the years 2015, 2017 and 2019. The website texts were retrieved from the Internet Archive, a platform that has been saving webpages since 1996 and keeps them publicly available (a 'library of the internet'). For each international organizations' website, we collected all unique webpages per year of interest available in the Internet Archive. In total, over 1.3 million webpages were collected for 315 international organizations (see section 4.5.2). After collection of the webpages, the pages were converted from HTML to plain text. We only took the headers and paragraph elements of each HTML file, to exclude as much as possible text not relevant to the work and activities of the international organization (such as menu bars, addresses or footers). The pages were only converted to plain text if they are English, and if the selected text is at least 1,000 characters long. This length was chosen to make sure there was enough content for text analysis. In total 39.7% of all webpages was converted into plain text, the rest was either not English, too short or had an error in the file, see also supporting material table S6.3. Finally, if less than 20 plain text pages per year were available for an international organization, it was dropped from the set. Between years, duplicate pages may exist. We did not exclude duplicate pages across years, as the persistence of a page reflects the choice of an IO to keep certain content online. In total, the final dataset consists of 159 international organizations, for which a total of 521,872 English text webpages with minimum length of 1,000 characters are available for analysis. The set of 159 international organizations is listed in supporting material S4.1.

The plain text webpages were processed by removing all non-alphanumeric characters, stripping whitespace and converting all capitals to lower letters.

6.3.4. Statistical tests

We first conducted exploratory data analysis on our time-bound indicators, *SDG Use, Integration Saliency* and *Policy Domains Per Page* to assess how these have changed from 2015 to 2017 to 2019. Then, we used regression models across the two waves of data, with both a two-year time-lag: 2015-2017 and 2017-2019. Given that we used two indicators for the dependent variable, we also created two separate models. We included our independent indicators in these models and added the previous value of the dependent indicator as a control. When assessing *Integration Saliency* in 2019, we thus added *Integration Saliency* in 2017 as control indicator.

The indicator *Integration Saliency* is a fractional, namely the proportion of integration keywords as part of all words on a website. Hence, we used a fractional response model (Papke & Wooldridge, 1996, 2008), implemented through the R package 'frm' (E. A. Ramalho et al., 2011; J. J. S. Ramalho, 2016).

The indicator *Policy Domains Per Page* is continuous, so we used a linear regression model implemented in base R. As *Policy Domains Per Page* is right-tailed, see histograms in supporting material figure S6.1, we log-transformed it to meet the assumption of normality for linear regression. All categorical indicators were converted into dummy indicators for analysis. We conducted the Breush-Pagan test for heteroskedasticity from the R package 'lmtest' (Zeileis & Hothorn, 2002) and tested for multicollinearity with Variance Inflation Factors implemented through the R package 'car' (J. Fox & Weisberg, 2019).

6.4. Results

6.4.1. Policy integration has increased over time

Both indicators for policy integration, *Integration Saliency* and *Policy Domains Per Page*, point towards a small but significant increase in policy integration in international organizations from 2015 to 2019, across the group as a whole.

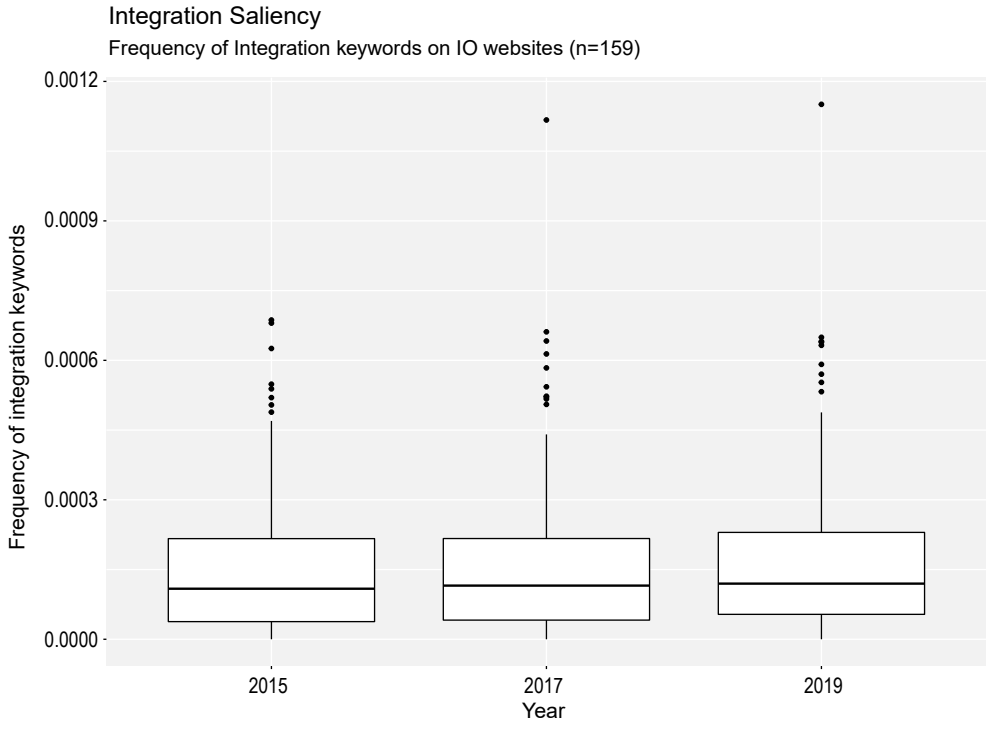


Figure 6.1. Plot of Integration Saliency in 2015, 2017 and 2019

The indicator *Integration Saliency* is operationalized as the relative frequency of policy integration keywords on international organizations' websites. The increase from 2015 to 2019 is significant at the 5% level.

The first indicator for policy integration, *Integration Saliency*, shows a slight increase over time, see figure 6.1. To assess the significance of this increase, we use a t-test[1] on the pairwise differences in *Integration Saliency*. For 2015 to 2017, the difference in I*ntegration Saliency* is not significant (M = 1.135e-05, SD = 9.156e-05, t(158) = 1.56, p = 0.12). However, the increase from 2015 to 2019 is significant at the 5 percent level (M = 2.254e-05, SD = 1.324e-04, t(158) = 2.15, p = 0.033).

The second indicator for policy integration, *Policy Domains Per Page*, also shows a slight increase, see figure 6.2. The t-test on the pairwise differences shows that the increase from 2015 to 2017 is significant at the 10% level (M = 0.124, SD = 0.894, t(158) = 1.75, p = 0.082). The increase from 2015 to 2019 is significant at the 0.1% level (M = 0.313, SD = 1.106, t(158) = 3.57, p < 0.001).

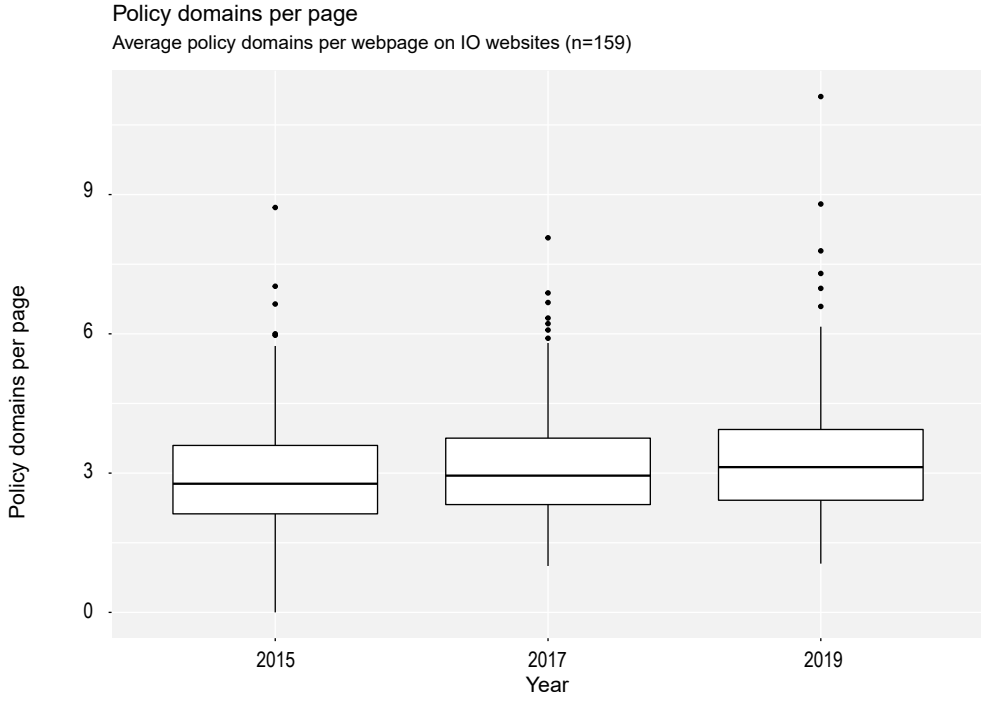


Figure 6.2. Policy domains per page in 2015, 2017 and 2019
The indicator *Policy Domains Per Page* is operationalized as the average number of policy domains mentioned on a single webpage of an international organization. The increase from 2015 to 2017 is significant at the 10% level, and the increase from 2015 to 2019 is significant at the 0.1% level.

[1] T-test results are reported as (M = Mean, SD = Standard Deviation, t(degrees of freedom) = t-value, p = p-value).

Thus, on average, international organizations are increasingly mentioning policy integration and more policy domains are discussed jointly on international organizations' websites. Both indicators point towards an increase in policy integration in the group of international organizations from 2015 to 2019.

6.4.2. The use of the SDGs has increased over time

The indicator *SDG Use* is plotted in figure 6.3. From 2015 to 2019, a strong increase can be seen in the use of SDG keywords on international organizations' websites. The t-test on the pairwise differences shows that the increase from 2015 to 2017 in *SDG Use* is significant at the 0.1% level (M = 2.784e-04, SD = 7.380e-04, t(158) = 4.76, p < 0.001). The increase from 2017 to 2019 is also significant, at the 1% level (M = 1.773e-04, SD = 7.485e-04, t(158) = 2.99, p = 0.003). On average, international organizations thus increasingly refer to the SDGs and 2030 Agenda on their websites. Building on the assumption that website texts reflect international organizations' activities, policies, and programs, this signifies that the SDGs are increasingly used as a framework to build activities around (Kanie et al., 2019).

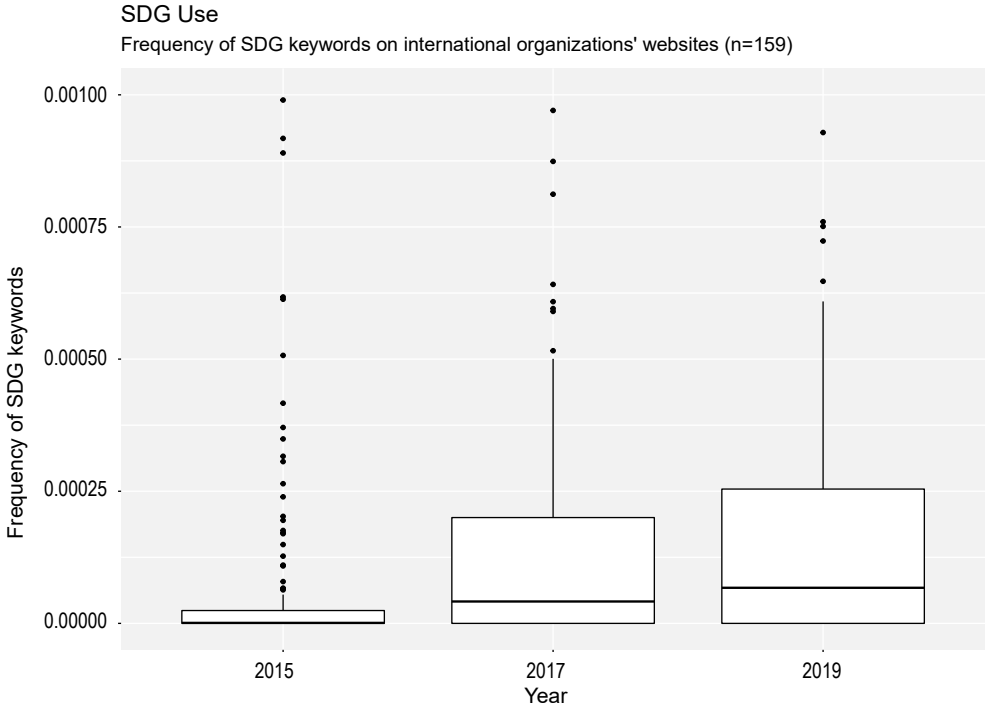


Figure 6.3. SDG use in 2015, 2017 and 2019

The indicator *SDG Use* is operationalized as the relative frequency of SDG keywords on international organizations' websites.

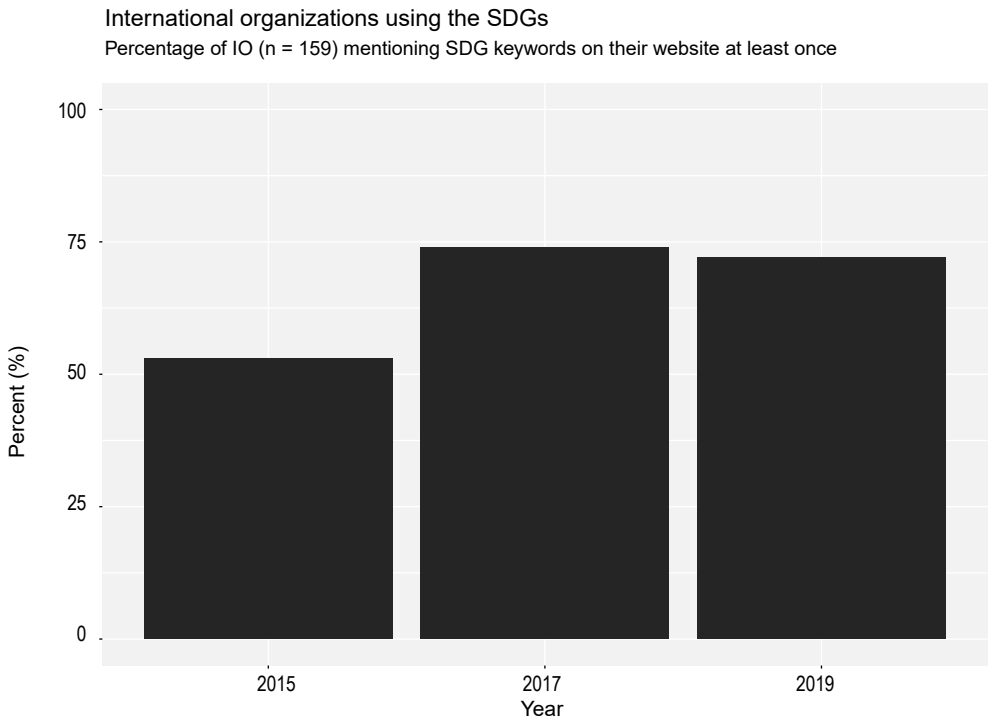


Figure 6.4. International organizations that use the SDGs

Percentage of international organizations in the set (n = 159) that uses SDG keywords at least once (SDG Use > 0) on their website, in 2015, 2017 and 2019.

As *SDG Use* is an average across all international organizations, it is also relevant to know what proportion of all international organizations uses the SDGs *at least once*. This is plotted in figure 6.4. The percentage of international organizations in the set that uses the SDGs has increased from 53.5% in 2015 to 72.3% in 2019. While the majority of international organizations refers to the SDGs in 2019, still more than one in four international organizations in the dataset does not mention the SDGs at all on their website.

6.4.3. The use of the SDGs does not affect policy integration

We now turn to our main question of whether the use of the SDGs has been an influencing factor in the increase in policy integration that we observe. The summary statistics for all indicators in both models are given in table 6.1. Pearson correlation coefficients are given in supporting material, table S6.4.

Model 1 assesses the effect of the independent indicators in 2015 and 2017 on *Integration Saliency* in 2017 and 2019, respectively, using a fractional response model. Results of the regression are shown in table 6.2.

Table 6.1. Summary statistics of indicators

Indicator	Mean	SD	Min.	Max.	False	True
Number of observations = 159						
DI: Integration Saliency 2017*	1.603e-04	1.676e-04	0	1.117e-03		
DI: Integration Saliency 2019	1.715e-04	1.752e-04	0	1.151e-03		
DI: Policy Domains Per Page 2017* (log-transformed)	1.375	0.297	0.693	2.205		
DI: Policy Domains Per Page 2019 (log-transformed)	1.413	0.312	0.718	2.494		
II: SDG Use 2015	7.386e-05	2.070e-04	0	1.291e-03		
II: SDG Use 2017	3.523e-04	8.520e-04	0	4.950e-03		
II: IO Size	76.2	72.3	1	193		
II: Environmental IO			0	1	112	47
II: UN System			0	1	121	38
II: Issue scope: multi-issue			0	1	124	35
II: Issue scope: omni-issue			0	1	147	12
CI: Integration Saliency 2015	1.489e-04	1.492e-04	0	6.867e-04		
CI: Policy domains per page 2015 (log-transformed)	1.341	0.308	0	2.274		

DI = Dependent indicator; II = independent indicator; CI = control indicator. *The values of 2017 serve as dependent indicator in the 2015-2017 model, and as control indicator in the 2017-2019 models.

Table 6.2. The influence of independent indicators on Integration Saliency

Model 1 - Dependent indicator: Integration Saliency (in y+2)

Indicator	2015 (y) - 2017 (y+2)			2017 (y) - 2019 (y+2)		
	Estimate	Sign.	p-value	Estimate	Sign.	p-value
SDG Use (y)	-282.585	n.s.	0.243	72.213	n.s.	0.217
IO size	0.000	n.s.	0.742	-0.002	*	0.079
Environmental IO	-0.059	n.s.	0.639	-0.150	n.s.	0.262
UN System	-0.069	n.s.	0.748	0.370	*	0.096
Issue scope: Multi	0.167	n.s.	0.114	0.143	n.s.	0.189
Issue scope: Omni	0.394	**	0.032	0.566	*	0.087
Integration Saliency (y)	4312.726	***	<0.001	2822.840	***	<0.001
Intercept	-9.668			-9.276		
R-squared	0.622			0.447		
N	159			159		

Results of model 1, the effect of independent indicators in 2015 and 2017 on *Integration Saliency* in 2017 and 2019. Sign. = Significance. * = significant at α = 0.10; ** = significant at α = 0.05; *** = significant at α = 0.01

In the 2015-2017 period, the indicator *Issue scope: Omni* is positive and significant, indicating that in 2017, international organizations working on 4 or more policy domains mention policy integration significantly more often than those who work on a single policy domain. This confirms that international organizations working on multiple policy domains show higher levels of policy integration. As expected, the control indicator, *Integration Saliency (y = 2015)*, is also positive and significant, indicating that international organizations mentioning policy integration more in 2015, also do so in 2017. The other indicators in the model show no significant effects.

In 2017-2019 period, the indicators *Issue scope: Omni* and *Integration Saliency (y = 2017)* are also positive and significant, just as in 2015-2017. In addition, in 2019, the indicator *UN System* is positive and significant. This indicates that international organizations that are part of the UN system mention policy integration more on their websites. Lastly, the indicator *IO Size* has a small, but significant, negative effect on *Integration Saliency*. This somewhat surprising finding indicates that larger international organizations discuss policy integration less on their websites. This is opposite of what we expected. The other indicators show no significant effects.

Model 2 assesses the effect of the independent indicators on the log-transformed indicators *Policy Domains Per Page* in 2017 and 2019 using a linear regression analysis. Results of the regression are shown in table 6.3. The Breush-Pagan test showed no sig-

Table 6.3. The influence of independent indicators on Policy Domains Per Page
Model 2 - Dependent indicator: Policy Domains Per Page (in y+2) - Log-transformed

Indicator	2015 (y) - 2017 (y+2)			2017 (y) - 2019 (y+2)		
	Estimate	Sign.	p-value	Estimate	Sign.	p-value
SDG Use (y)	-9.889	n.s.	0.901	-9.682	n.s.	0.612
IO size	0.000	n.s.	0.799	0.000	n.s.	0.695
Environmental IO	0.005	n.s.	0.898	0.024	n.s.	0.503
UN System	0.135	**	0.023	0.087	n.s.	0.117
Issue scope: Multi	0.044	n.s.	0.269	0.086	**	0.019
Issue scope: Omni	0.007	n.s.	0.922	0.043	n.s.	0.501
Policy Domains Per Page (y)	1.144	***	<0.001	0.186	***	<0.001
Intercept	0.859			0.792		
R-squared	0.576			0.666		
N	159			159		

Results of model 2, the influence of independent indicators in 2015 and 2017 on *Policy Domains Per Page* – log-transformed in 2017 and 2019. Sign. = Significance. * = significant at α = 0.10; ** = significant at α = 0.05; *** = significant at α = 0.01

nificant heteroskedasticity and all Variance Inflation Factors were under 3, indicating no issue with multicollinearity.

In the 2017-2019 period, the indicator *UN System* is no longer significant, as the p-value is just over our threshold value of 0.1. The indicator *Issue scope: Multi* is positive and significant, indicating that international organizations working on two or three policy domains discuss more policy issues together. Lastly, the control indicator is again the strongest significant predictor.

The results taken together indicate that two characteristics of international organizations have a positive and significant influence on policy integration: working on multiple policy domains and being part of the UN system. However, *we find no support for our main hypothesis that the use of the SDGs as a guiding framework leads to higher levels of policy integration*. In none of the models, *SDG Use* showed a significant effect on policy integration indicators.

6.4.4. Policy integration influences the use of the SDGs

Models 1 and 2 do not show any significant effect of SDG Use on policy integration. Yet, the Pearson correlation coefficients, see supporting material table S6.4, indicate a weak to moderate correlation between the indicators SDG Use and Integration Saliency. Hence, the connection between the two indicators may be reversed: that higher levels of policy integration in international organizations lead to more use of the SDGs as a guiding framework. If this is the case, it would indicate that international organizations that were already working on policy integration also use the SDGs more in their work. To test this, we ran an additional model where we switch the dependent indicators with the independent indicator SDG Use. The results of this third model are in table 6.4.

The results show that Integration Saliency has a strong positive impact on SDG Use, indicating that international organizations that mention policy integration frequently, also mention the SDGs frequently two years later. This holds both in the 2015-2017 period and in the 2017-2019 period. In the first period (when the SDGs were just adopted), larger international organizations and those international organizations working on multiple policy domains also use the SDGs more. Environmental organizations use the SDGs less than non-environmental organizations in the 2015-2017 period. Noticeably, the indicator Policy Domains Per Page is not significant, indicating that discussing more policy domains jointly does not lead to more use of the SDGs. In the 2017-2019 period, only the indicator UN System is positive and significant, indicating that UN system international organizations use the SDGs more than non-UN system organizations in 2017-2019, but not in 2015-2017. A possible explanation is many new international organizations started using the SDGs for the first time from 2015 to 2017, see figure

Table 6.4. The influence of policy integration on SDG use

Model 3 - Dependent indicator: SDG Use (in y+2)

Indicator	2015 (y) - 2017 (y+2)			2017 (y) - 2019 (y+2)		
	Estimate	Sign.	p-value	Estimate	Sign.	p-value
Integration Saliency (y)	2670.911	***	0.005	1217.308	**	0.017
Policy Domains Per Page (y)	0.095	n.s.	0.47	0.131	n.s.	0.176
IO size	0.005	**	0.019	-0.003	n.s.	0.259
Environmental IO	-0.668	*	0.100	0.105	n.s.	0.725
UN System	0.371	n.s.	0.361	0.771	*	0.077
Issue scope: Multi	0.696	*	0.069	-0.022	n.s.	0.943
Issue scope: Omni	0.922	*	0.067	0.456	n.s.	0.326
SDG Use (y)	1906.678	***	<0.001	649.780	***	<0.001
Intercept	-9.956			-9.068		
R-squared	0.437			0.642		
N	159			159		

Results of model 3, the influence of policy integration as operationalized in two independent indicators – *Integration Saliency* and *Policy Domains Per Page* – on the indicator *SDG use*. Sign. = Significance. * = significant at α = 0.10; ** = significant at α = 0.05; *** = significant at α = 0.01

6.4. Yet in 2017-2019, the use of the SDGs may have consolidated in most international organizations, except in the UN system organizations that did increase their use of the SDGs from 2017-2019.

6.5. Discussion

There are several limitations to this study that require further analysis with complementary methodologies. First, we focused on website texts, based on our assumption that international organizations' websites reflect their activities and programs. As described in the introduction, this is a soft form of policy integration (Azizi et al., 2019), that may be sensitive to 'window-dressing.' Future studies could improve and expand on our research by assessing other types of policy texts, such as reports on policy outcomes and decisions of international organizations, and by comparing the results across these text types. The method offered here could be scaled to accommodate these different types of text. Results from these studies may yield further insights on the effects of the SDGs on international organizations' policy decisions. Second, our analysis focuses exclusively on international organizations in the intergovernmental sense. Hence, it does not cover any integration among or with other types of international organizations, such as inter-

national non-governmental organizations, or national and subnational organizations. Future research could assess other types of organizations and combinations, to assess whether the SDG may have a stronger political effect there. Third, we used data only until 2019. This limited time span might not be enough for the SDGs to impact policy integration. In future studies, more recent data would need to be added.

Despite these limitations, we are confident that the results of our study provide important insights. We could show that most international organizations mention both the SDGs and the need for policy integration on their websites, and that these references have significantly increased from 2015 to 2019. The number of policy domains that the websites of international organizations discussed together has significantly grown as well. Yet while SDG use and policy integration are increasing, a detailed reading of our results reveals no support for our main hypothesis: we find that the discursive use of the SDGs as a guiding framework does not necessarily lead to higher policy integration in international organizations.

The strongest predictor of policy integration remains previous policy integration. This corroborates earlier studies that showed that policy integration requires a long-term embedding in an organization and tends to increase with momentum and persistence (Ross & Dovers, 2008). In addition, we find that international organizations working on multiple policy domains show higher levels of policy integration. This is in line with earlier studies demonstrating the commitment of multi-issue international organizations to policy integration (Tosun & Peters, 2018). Finally, we find that international organizations that are part of the UN system show higher levels of policy integration, which confirms the long-standing commitment of the UN to policy integration (Bauer & Biermann, 2004; Bornemann & Weiland, 2021; UN, 2013).

Have the SDGs then been successful? Part of the success of the goals lies in their uptake by a broad group of governance actors. Our study shows that this uptake is increasing and that a large majority of international organizations used the SDGs already in 2017. The SDGs are thus universal enough to speak to a broad group of international organizations working in diverse policy domains. In this regard, the SDGs can be considered a success.

However, the SDGs fail to deliver on one of their central ambitions. While the SDGs are taken up into activities and policies, this does not lead to more policy integration. This finding contrasts several previous studies, such as on the International Labour Organization (ILO) and the Asian Development Bank (ADB) that we mentioned earlier, where the SDGs were found to have somewhat spurred policy integration (Censoro et al., 2020; Montesano et al., 2021). One explanation for this difference could be that the

SDGs have some influence in some cases, but that the effects across a very large group of international organizations, as we study it here, are minimal. The ILO and ADB would then be the exception rather than the norm. Another explanation is that any change in policy integration is explained much more strongly by other factors, including by previous policy integration, than by SDG use. In the cases of ILO and ADB, this was also reported. Both organizations have a long-standing commitment to policy integration and intersectoral learning. The SDGs were used to endorse on-going processes, rather than bringing something entirely new to the table (Censoro et al., 2020; Montesano et al., 2021). Potentially, the observed increase in policy integration in the ILO and ADB could have happened without the SDGs as well. Our findings are in line with a recent impact assessment of the SDGs that concluded that the SDGs have had mostly discursive effects on international institutions, where SDGs are used in the language but have not any major effect on organizations' activities (F. Biermann, Hickmann, & Sénit, 2022a). While there have been reforms in several international institutions to improve policy coherence since 2015, these reforms appear part of longer trajectories rather than a direct effect of the SDGs (Beisheim et al., 2022).

Furthermore, our reverse causality model showed that international organizations that mentioned policy integration more often also use the SDGs more often. One explanation is that the SDGs as a guiding framework better fit organizations that already work on policy integration. If the activities of an international organization align well with the integrative SDGs, they can easily use the SDGs to frame those activities, making it likely that those international organizations use the SDGs more.

These insights raise an important question: what about international organizations that pay little attention for policy integration and that rarely use the SDGs? According to our results, these are generally the single-issue international organizations outside the UN system. While these organizations are less inclined to use the SDGs as a guiding framework, these could be exactly the organizations where the SDGs could make a difference. As described, the SDGs are designed to facilitate better policy integration and may raise the salience of a broad range of issues (Chasek et al., 2016; Dahl, 2012; Elder & Olsen, 2019; Janoušková et al., 2018; Le Blanc, 2015). While this may not make a difference in international organizations that already work on multiple policy domains and have worked on policy integration before, it may make a difference when policy integration is not yet on the agenda. Yet, in those organizations the SDGs appear less used. Further research could focus here on single-issue international organizations outside the UN system to assess how they use, or do not use, the SDGs and how this affects policy integration in their organization. There appears to be little research on this, with most existing studies on the SDGs focusing mainly on multi-issue, UN-system international organizations (Beisheim et al., 2022).

Another noticeable finding is that environmental international organizations used the SDGs less compared to non-environmental organizations. This is contrary to the common wisdom, given that the SDGs are generally considered better in integrating environmental concerns in a global development agenda (F. Biermann et al., 2017; Griggs et al., 2014; UNEP, 2013). More recently, however, the SDGs have also been criticized for prioritizing socioeconomic development and not being adequate to protect the environment (Clémençon, 2021; Hirons, 2020; Reid et al., 2017; Salleh, 2016; Spaiser et al., 2017; Zeng et al., 2020). It could thus be the case that environmental international organizations are less interested in using the SDGs. Further research in this area could look at why SDGs are differently used by environmental and non-environmental international organizations.

6.6. Conclusion

Our study shows that the discursive use of the SDGs among international organizations has significantly increased over time since 2017. In this sense, the SDGs can be considered a success. They give the impression of a truly global discourse among international organizations, covering many policy domains. However, this discursive use of the SDGs does not increase policy integration in international organizations. Rather, it is existing high policy integration of organizations that leads them to refer to SDGs more often.

Altogether, our results suggest that the SDGs are largely an agenda adopted by international organizations within the UN system that work on multiple domains of mainly socio-economic development. These are also the international organizations where policy integration was already more frequent. The effects of the SDGs on policy integration thus appear limited, with international organizations using the SDGs rather to reframe existing activities, policies, and programs. In short, while the SDGs are widely referred to by many international organizations, they fail to deliver on one of their key ambitions: to increase policy integration and 'break down the silos' of global sustainable development.

With seven years left till 2030, the insights from our study can prove valuable in efforts to achieve the goals. First, the use of SDGs could be further promoted among those international organizations where their use is still low, namely single-issue international organizations outside the UN system. Second, environmental protection within the SDGs needs to be strengthened for the goals to become truly an overarching agenda. Lastly, it is becoming clear that much more than the SDGs is needed to further policy integration.

7

How international organizations integrate the 17 Sustainable Development Goals

This chapter is based on:

Bogers, M., Biermann, F., Kalfagianni, A., & Kim, R. E. (under review). How international organizations link the Sustainable Development Goals in policy practice: Insights from a large-N analysis.

Abstract

Global policy issues are becoming increasingly interconnected, requiring integrated and mutually supportive policies. To this end, the United Nations has defined the 17 Sustainable Development Goals (SDGs) as 'integrated and indivisible,' calling upon governments and others to develop coherent policies and programs for their achievement. As a consequence, numerous studies have researched SDG interlinkages and the coherence of SDG policies; yet most of these studies only show how SDG indicators correlate and which SDGs ideally should be prioritized. Little is known about the actual socio-political realities of SDG prioritization and how actors prioritize and link them in practice. This is where this chapter makes an important contribution. We conducted a quantitative content analysis of 350,000 website texts of 154 international organizations. Using a keyword-based approach, we analyzed which SDGs are referred to most often, individually and collectively, and inferred from this how SDGs are prioritized and linked in practice. Our findings indicate that international organizations most often mention those SDGs that focus on economic issues and global partnerships and they also most frequently link these SDGs with others. SDGs that focus on environmental concerns, however, are mentioned less often, and international organizations link them to other goals less frequently. Our findings thus suggest a disconnect between socio-economic and environmental concerns in the implementation of the SDGs in global governance. We conclude with policy implications and future research avenues.

7.1. Introduction

In this chapter, we focus again on policy integration at the meso-level. Whereas the previous chapter focused on which factors affect policy integration, this chapter focuses on how the 17 policy domains as embedded in the SDGs are integrated. Our key objective is to study how international organizations link the 17 issue areas as embedded in the SDGs in policy practice, and whether some of the issue areas are more frequently linked than others. We observe such links analytically through the co-mentioning of SDG issue areas on websites. Our empirical focus is thus similar as that of chapter 6, namely on the website texts of international organizations, which are assumed to reflect the policies, programs, and activities of an international organization (see sections 4.4.2. and 7.2.1). Given our empirical focus on policy practice, we thus consider the SDG interlinkages as identified in this chapter to also signify policy integration for the 17 SDG issue areas by international organizations. However, throughout this chapter, we use the term "SDG interlinkages," as SDG interlinkages is a more common term in literature to study the integration of the different SDG issue areas (Bennich et al., 2020; Renaud et al., 2022).

The 2030 Agenda for Sustainable Development (2030 Agenda) underscores that progress on one Sustainable Development Goal (SDG) will affect progress on many others (see also section 1.4). For example, decreasing malnutrition among children and adolescents (SDG 2) might have a positive effect on school participation rates and educational performance (SDG 4) (Moock & Leslie, 1986; Snilstveit et al., 2016); and higher agricultural productivity (SDG 2) might negatively impact deforestation policies (SDG 15) (Machingura & Lally, 2017).

The recognition of such links between issue areas is not new and in fact predates the SDGs (see also section 1.3). Substantial research has targeted these links for decades, with different research communities often using different terminology. For example, links between issue areas have been referred to as "nexus" in the natural sciences and economics (Liu et al., 2018; Mercure et al., 2019); as "telecoupling" or "teleconnection" in ecological research (Liu et al., 2013); or "issue linkages" in international relations studies (Betts, 2010). The adoption of the SDGs and their emphasis on integration and interlinkages has given a renewed research impulse to this field; links between issues covered by SDGs are here commonly referred to as "SDG interlinkages" (Bennich et al., 2020; Renaud et al., 2022). Conceptually, we see this term as comparable to other terms, such as issue linkages, telecoupled issue areas, or nexus, because all terms refer to links between two or more issue areas.

So far, studies on SDG interlinkages have been conducted mainly from a natural science perspective, often using modeling approaches and indicator data or (natural) science

literature to identify interlinkages between the SDGs at the goal, target, or indicator level (see also section 3.3.2). These studies offer important insights on SDG interlinkages and which SDGs could be prioritized from a natural science point of view. Yet, they do not advance understanding of how governance actors prioritize and link SDGS in policy practice, even though this is ultimately what counts for policy implementation in (Betts, 2010; Jinnah, 2011).

Importantly, how governance actors prioritize SDGs and recognize their links in policies could significantly differ from the natural science understanding of which SDGs should be prioritized or are related. While knowledge from science is relevant to politics, an issue linkage that is considered ambiguous or absent by scientists can still be relevant in global politics (Aggarwal, 2000; Betts, 2010; E. B. Haas, 1980; Wardekker et al., 2008). For example, while causal claims on the link between migration and climate change are still debated in scientific communities, their link is considered evident and is acted upon in policy by several international organizations, including within the UN system (Dellmuth et al., 2020; Piguet, 2022). In addition, how SDGs are linked may differ across types of organizations. For example, some organizations may focus on one issue area and link SDG policies from that viewpoint (Underdal & Kim, 2017). How the SDGs are linked may also differ across regions and across actors working on different dimensions of sustainable development, such as the social, economic, and environmental dimensions (Montesano et al., 2023).

Differences between the political and natural science understandings of SDG interlinkages may arise for several reasons. For example, the political understanding of an SDG link could be based on outdated scientific knowledge, signifying a lack of evidence-based policymaking in that area (A. King, 2016). Alternatively, the political understanding of an SDG link could reflect a richer knowledge based on practical experience, or a particular worldview (Hernández-Orozco et al., 2022), which may not be well reflected in the natural science understanding. These discrepancies are worth further investigation, since a thorough understanding of SDG interlinkages is essential for achieving them (Nilsson et al., 2022).

Yet, with few exceptions , little empirical knowledge is available on how governance actors link and prioritize SDGs in policy practice (Bennich et al., 2020; Horvath et al., 2022; Nilsson et al., 2022). International organizations are especially relevant here, and they are hence the focus of this study. International organizations are key actors in global governance and essential for navigating the transboundary and interconnected issues addressed by the SDGs (Cormier, 2018; Dellmuth et al., 2020; Harrington, 2020). We define international organizations in this study broadly, as internationally operating organizations with at least three states as members that hold regular meetings and have

a permanent secretariat that operates with some autonomy. International organizations have tried to link different global policy issues for long, and they increasingly account for issue linkages in their policies and programs (Jinnah, 2011; Orsini et al., 2019; Tosun & Peters, 2018; Venghaus & Hake, 2018; see also section 1.3). Moreover, international organizations take an active role in informing global and national policymakers about issue linkages (Dellmuth et al., 2020). Issue linkages acted upon by international organizations can shape how issue areas are linked in global and national governance more broadly (Betts, 2010). For example, the secretariat of the Convention on Biological Diversity has strategically reframed the understanding of biodiversity-climate linkages, with biodiversity moving "from a passive victim of climate impacts to an active part of climate change solution" (Jinnah, 2011).

To gain a better understanding of how the SDGs are linked and prioritized in policy practice, we investigate here how international organizations have linked and prioritized the issue areas as embedded in the 17 SDGs in their public presentation of policies. We analyze a unique dataset of 350,000 webpages from the websites of 154 international organizations from 2013 to 2019. Based on these data, we answer three research questions. First, which SDGs are most prioritized by international organizations? Second, which SDGs are most and least linked by international organizations in their policy practice? Third, how do the prioritization of SDGs and the linking of SDGs differ over time, and between subsets of international organizations?

This chapter makes two main contributions. First, we show how a large set of international organizations prioritize and link SDGs in policy practice. While earlier studies have investigated issue linkages by international organizations qualitatively (Betts, 2010; Dellmuth et al., 2020; Hall, 2016) or quantitatively as to how UN system entities link the SDGs (Smith et al., 2021), our study offers the most comprehensive analysis to date. We include data from multiple years, for a large set of international organizations, both outside and inside the UN system and across the economic, social, and environmental domains. Our results offer novel insights into how types of international organizations prioritize and link SDGs, and which SDGs they link most and least. These insights can inform important policy debates on what SDG interlinkages should be focused on in the remaining seven years to implement the goals.

Second, we offer a novel method to assess SDG links, namely quantitative text analysis of large sets of hundreds of thousands of websites. Text analysis is increasingly common in political science, often conducted on policy documents, including in the study of SDGs (Borchardt et al., 2020; Horne et al., 2020) and to study the integration of different issue areas (Azizi et al., 2019; Biesbroek et al., 2020; Bornemann & Weiland, 2021; Duraiappah & Bhardwaj, 2007; Gregorio et al., 2017; Scobie, 2021; W. Yang et al., 2018). Yet, quantita-

tive text analysis has so far hardly been used to identify SDG interlinkages (Bennich et al., 2020), with Smith et al. (2021) providing one notable exception by analyzing UN policy documents. We provide here a novel, broadly applicable and scalable method, using website texts as a widely available alternative to policy documents, opening new possibilities for research in sustainability science.

7.2. Research design and methods

7.2.1. Quantitative text analysis on website texts

To assess how international organizations prioritize and link SDGs, we rely on quantitative content analysis of the websites of international organizations as they have been published in four years, namely 2013, 2015, 2017 and 2019. A handful of studies have shown the usefulness of text analysis to identify SDG interlinkages, relying on policy texts (Smith et al., 2021) or academic papers (Romero-Goyeneche et al., 2022). Here we rely on website texts as an alternative (see also section 4.4.2).

Websites offer a unique source of data to study SDG interlinkages, as they are available for a large set of international organizations across policy domains and countries. Over the past decades, websites have become important channels of communication in international relations (Adesina, 2017). International organizations, too, have increasingly focused communication efforts on their websites and other digital media to promote their mandates and activities, often using extensive communication strategies overseen by specialized departments (F. Biermann & Siebenhüner, 2009; Ecker-Ehrhardt, 2018b, 2018a). The content of a website thus reflects the policy position of an international organization that creates it (Riffe et al., 2019), with each website offering textual content that clarifies the public goals, policies and activities of that organization. We use these texts to assess which SDGs are prioritized and linked by an international organization.

7.2.2. Data collection and processing

In terms of data, we first collected and coded international organizations (see also section 4.5.1). International organizations were identified based on three existing datasets. First, from the Correlates of War International Governmental Organizations dataset (Version 3) we included all organizations that existed and had members in or after 2009 (Pevehouse et al., 2020). International organizations in this dataset have at least three member states, hold meetings at least every four years, and have a permanent secretariat. Second, we included all specialized agencies, funds and programs, research and training entities, and regional commissions of the UN that fall directly under the UN General Assembly or UN Economic and Social Council, following the organizational system chart (UNDGC, 2019). Third, we included all 'SDG indicator custodians' (UN, 2019b).

These international organizations or programs have been appointed to disseminate knowledge and collect data on specific SDG targets.

All international organizations that we included were manually coded for the variables *IO dimension* and *UN System*. For *IO dimension*, we classified each international organization to one, two or three of the core dimensions of sustainable development, that is, economic, social, or environmental. We coded this based on the vision or mission statement that an international organization reported on their website. Two researchers coded separately and discussed any disagreements. The variable *UN System* was coded manually to '1' if an international organization is part of the UN system, and '0' otherwise.

Then, we collected website texts for all international organizations in the set, for the years 2013, 2015, 2017 and 2019. Website pages were retrieved from The Internet Archive, a public repository. For each international organization we collected all unique webpages available for each year of interest (see section 4.5.2). We did not remove duplicate pages between years, as the continuance of a page reflects a choice of an organization to keep that specific page online. Webpages were then converted from HTML to plain text pages, saving only the headers and paragraph elements of each file, thereby excluding irrelevant content (menu bars, addresses, footers) as much as possible. Plain text pages that were not English or less than 1,000 characters long were discarded, to ensure suitability of the text for keyword analysis.

7.2.3. Operationalizing variables

We operationalize four variable sets for our analysis.

The first three sets are based on a quantitative content analysis of the websites of international organizations. After collecting and preprocessing the website texts (see previous section), we analyzed the text content of those pages to ascertain whether they discussed or referred to any sets of topics related to SDGs. In other words, we did not measure whether the SDGs were explicitly mentioned, but whether the text that we analyzed referred to key terms related to an SDG (see section 4.5.5). To identify such content-links to SDG topics of each webpage, we use a keyword set developed by Ramirez et al. and Romero-Goyeneche et al. (Ramirez et al., 2019; Romero-Goyeneche et al., 2021, 2022), which contains 2,155 keywords and keyword combinations that can be coupled to each of the 17 SDGs (see section 4.4.4.). For example, when a website text contained the keyword combination "income + poverty", we considered this text as being related to SDG 1 (poverty). A website text containing the keyword combination "climate + mitigate" we classified as being related to the topic "climate" (SDG 13). The keyword set was developed using the SDGs and SDG Targets as a guide and optimized to identify multiple SDG topics in a single text to assess interlinkages between the SDGs.

These SDG topics we then analyzed through keyword frequency counts (Azizi et al., 2019; Biesbroek et al., 2020; Scobie, 2016). We matched here the website texts of international organizations to SDG topics, focusing on webpages on a unit of analysis. If a webpage had at least three keywords or keyword combinations related to one SDG topic, we classified this webpage as covering that SDG. We assess this for each webpage of each international organization in our sample in each year. We then discarded all webpages that cover no SDG topics at all.

This process results in a collection of webpages that all cover one or many of the SDG topics; those webpages we referred to as "SDG webpages", for each international organization, *IOi*, in each year, *y*. Each SDG webpage covers one to seventeen SDG topics. If we had for one organization fewer than 20 "SDG webpages", we considered this as a lack of data and discard this $IO_{i,y}$.

Based on the SDG matching of webpages, we operationalize three sets of variables.

SDG_A prioritization: We calculate for each $IO_{i,y}$ the variable set *SDG_A prioritization*, where *A* can be 1-17. This we calculated by the number of SDG webpages that covers a specific SDG topic, SDG_A, divided by the total number of SDG webpages. To clarify this approach by an example: Suppose an international organization has 500 SDG webpages. Suppose further that of these, 250 cover only the topic of "health" (SDG 3) and another 50 webpages cover several other SDG topics but also "health". The variable *SDG 3 prioritization* is then (250+50)/500 = 0.6. Similarly, *SDG 5 prioritization* would in this example be (50+100)/500 = 0.3 and *SDG 1 prioritization* 100/500 = 0.2. This variable set thus consists of 17 variables, one for each SDG topic, and reflects how often $IO_{i,y}$ discusses a specific SDG topic as proportion of all webpages $IO_{i,y}$ containing any SDG topic. The measure can range from 0 to 1, where 0 means a specific SDG topic is not discussed at all on any of the SDG webpages of $IO_{i,y}$, and 1 means all SDG webpages of $IO_{i,y}$ discuss that specific SDG topic.

$SDG_{A\text{-}B}$ interlinkage: The second variable set is *$SDG_{A\text{-}B}$ interlinkage*, which reflects how frequent a pair of SDG topics, SDG_A and SDG_B, is mentioned together on the same webpage, for each $IO_{i,y}$. This we calculated by the number of SDG webpages that cover *both* topics of SDG_A and SDG_B, divided by the number of SDG webpages covering only the topic of either SDG_A or SDG_B. Using the same example, the *$SDG_{3\text{-}5}$ interlinkage* would be the number of SDG webpages covering *both* the topics "health" (SDG 3) and "gender" (SDG 5), divided by the number of SDG webpages covering only either SDG 3 or SDG 5: 50 / (250+50+100) = 0.125. The *SDG1-3 interlinkage* would be 0 / (250+50+100) = 0. The variable set *$SDG_{A\text{-}B}$ interlinkage* thus consists of 136 variables, all combinations of SDG topics, and reflects how often on average, when either the topic of SDG_A or SDG_B is

mentioned, the other SDG topic is also mentioned on the same page. The value ranges from 0 to 1, where 0 means that the topic of SDG_B is never mentioned when the topic of SDG_A is mentioned and 1 means that whenever the topic of SDG_A is mentioned, the topic of SDG_B is also always mentioned, and vice versa.

Our operationalization of a link between two SDGs is thus based on two SDG topics being mentioned together on a single webpage. Such co-mentioning of two SDG topics does not necessarily mean that the international organization also mentions a causal link between the two topics, though this is likely to be the case. For example, if an international organization has one paragraph on the topic "poverty" (SDG 1) and one paragraph on the topic "education" (SDG 4) on the same webpage, this would be considered a link, whether or not there is also a description of how these two topics are related, see figure S7.4 in the supporting material for a real example. Rather, the SDG topics are linked by association. Even if the relation between two issues is not explicitly explained on a webpage, their mentioning in proximity of one another shows an indirect recognition of a link between the issues. While this is necessarily a soft form of measuring SDG links, the use of co-mentioning as a measure of relatedness is a common and long-standing approach in quantitative text analysis (Hu et al., 2017; Maiya & Rolfe, 2014; Spence & Owens, 1990; White & Jose, 2004).

SDG_A interlinkage score: The third variable set is *SDG_A interlinkage score*, where *A* can be 1-17. This is calculated for each $IO_{i,y}$ as the average of all $SDG_{A\text{-}B}$ interlinkages, as described above, for each SDG_A. This score indicates how often the topic of SDG_A is mentioned together with *any of the 16* other SDG topics, regardless of which SDG. This variable set consists of 17 variables, one for each SDG, and reflects an overall score of how often a specific SDG topic is linked to any or all of the other SDG topics on average.

7.2.4. Data analysis and visualization

Our final dataset consists of 154 international organizations, for which a total of 359,057 SDG webpages are available for analysis. The list of international organizations is listed in table S4.1 in the supporting material. Data availability differs over years, see table 7.1. For a general assessment of SDG interlinkages and SDG prioritization we aggregate data over all years and all organizations. However, when we compared over time, we included only those 114 international organizations for which data is available in all years. Finally, when comparing between groups of international organizations we focus on the most recent year, 2019, and thus base our analysis on the data of 144 international organizations.

Because the data were not normally distributed, we assessed differences over time using non-parametric tests. For differences over time, we used the Wilcoxon signed-rank test.

Table 7.1. Data availability

Year	International organizations (n)	SDG webpages (n)
Data in *any* year	154	359,057
Data in *all* years	114	347,026
Data in 2013	118	56,081
Data in 2015	143	120,449
Data in 2017	149	110,779
Data in 2019	144	71,748

Data availability for analysis of chapter 7.

For differences between groups, we used the Wilcoxon rank sum test, also known as the Mann Whitney U test (Rey & Neuhäuser, 2014; Wilcoxon, 1945). Effect sizes we calculated using the Z-statistic (Tomczak & Tomczak, 2014). All statistical tests were implemented in R, and quadrant visualizations were created using ggplot2. To create the quadrants of the variables SDGA prioritization and SDGA interlinkage score, values were normalized using min-max scaling on a scale of 0 to 1. Network visualizations were created in Gephi 0.9.7.

7.3. Results

We now report on our results, followed in section 7.4 by a broader discussion. We refer here to the 17 SDG topics by their short description, as summarized in table 1.1.

7.3.1. Economic SDG topics are most prioritized and most often linked to other SDG topics

Across all years and across all international organizations in the dataset, three topics score high both on prioritization and on the interlinkage score: "industry" (SDG 9), "consumption" (SDG 12), and "partnerships" (SDG 17), see figure 7.1. These SDG topics are often mentioned individually and in combination with other SDG topics and are thus considered by international organizations most important as self-standing goals and in relation to the other goals. The topic "work" (SDG 8) is also considered important in relation to the other goals but is a bit less prioritized. Thus, many international organizations seem to see goals focused on the economic dimension of sustainable development as most crucial when viewing the SDGs as an interrelated set of goals, see figure 7.2. The topic "partnerships" (SDG 17) is mentioned here as well but is rather an outlier; it is an overarching goal that seeks to enable the implementation of all goals, and its high prioritization and interlinkage score simply show a broad group of international

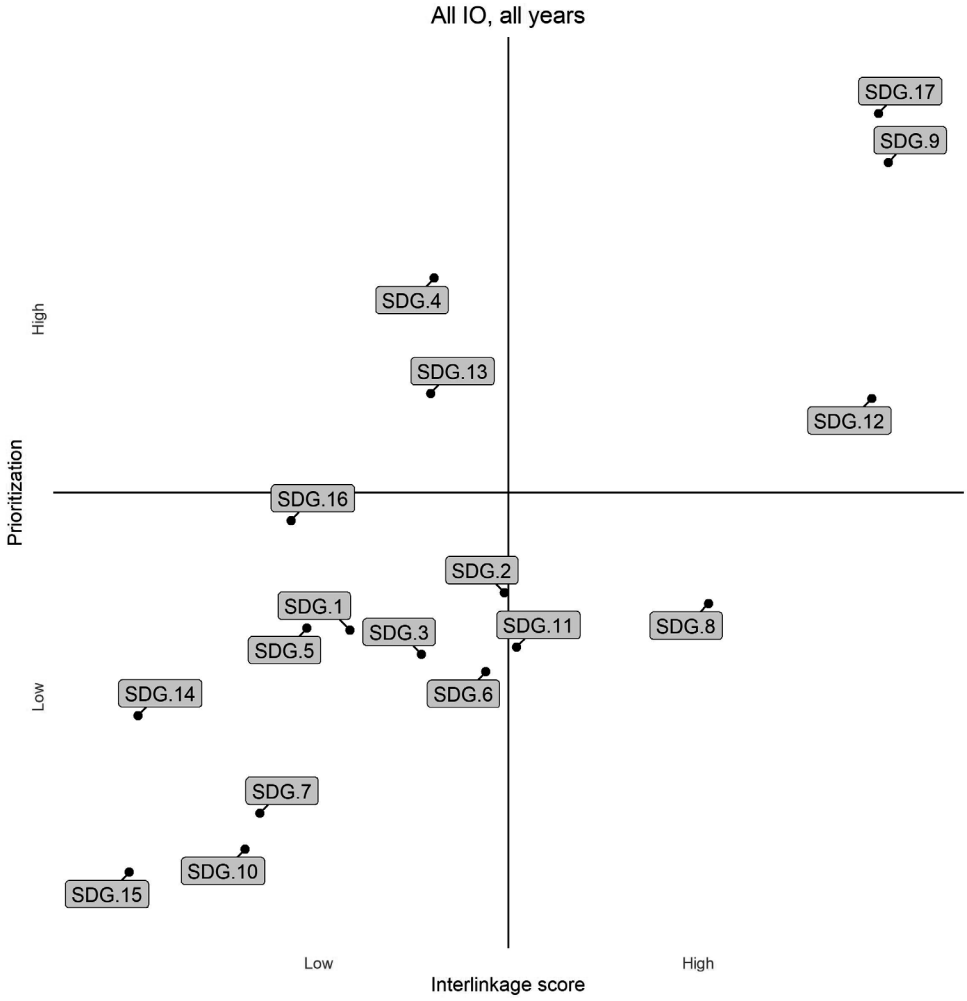


Figure 7.1. SDG prioritization and interlinking overall
Normalized values of *SDG prioritization* (Y-axis) and *SDG interlinkage* score (X-axis) for each SDG, aggregated over all years (2013, 2015, 2017, 2019) and over all international organizations in the set (n=154).

organizations see partnerships indeed as important for achieving all SDGs. That the economic SDGs are at the core of the network is in line with earlier studies showing a preference for the economic SDGs in the UN discourse (Smith et al., 2021), in discourses in countries (Forestier & Kim, 2020) and in businesses (Heras-Saizarbitoria et al., 2021). Our findings show that this preference persists also in our dataset of a larger group of international organizations.

This situation is different for other, less economically oriented SDG topics, namely "energy" (SDG 7), "inequality" (SDG 10), "oceans" (SDG 14) and "land" (SDG 15). These SDG

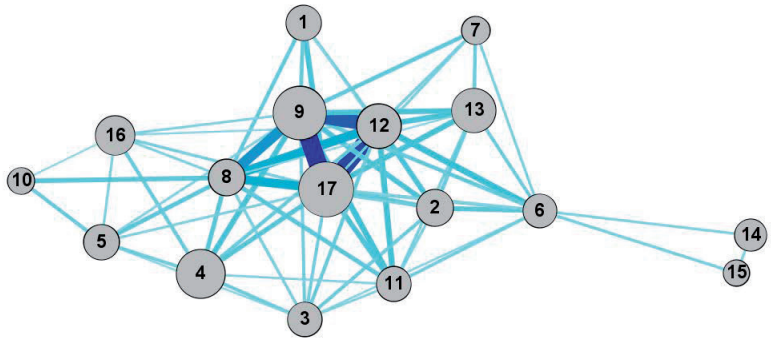


Figure 7.2. Network representation of how SDGs are prioritized and interlinked
Network representation of *SDG_A prioritization* (size of nodes) and *$SDG_{A\text{-}B}$ interlinkage* (edge thickness) based on aggregated data of all years and all international organizations (n = 154). To enable visualization of the core structure, only the 50% most frequently linked SDGs are shown (highest 50% of values for *$SDG_{A\text{-}B}$ interlinkage*). The thicker and the darker the color of the edge, the more often those two SDGs are mentioned together. The larger the size of the node, the more frequent that SDG is mentioned.

topics are neither prioritized nor considered important in relation to other goals. For the latter three, their lack of importance is not surprising. The topic "inequality" (SDG 10) was one of the more contested goals in the negotiation of the SDGs and is often seen as one of the weaker goals that lacks political attention (Chasek et al., 2016; Fukuda-Parr, 2019). The topics "oceans" (SDG 14) and "land" (SDG 15) cover the earth's marine and terrestrial ecosystems and are – together with the topics "water" (SDG 6) and "climate" (SDG 13) – the SDGs that are mainly focusing on the protection of the natural environment. It has been an on-going challenge to increase political attention for both marine and terrestrial issues at the global level (Armstrong, 2020; Harrop & Pritchard, 2011; Jóhannsdóttir et al., 2010). While their uptake in the SDGs has been described as a step forward in raising attention and better integrating ocean and land issues with other global concerns (Armstrong, 2020; Visseren-Hamakers & Kok, 2022), the topics "oceans" (SDG 14) and "land" (SDG 15) still remain sidelined in the global agenda. The position of "climate" (SDG 13) is much stronger, especially in terms of prioritization. However, climate is a special case as its content is covered also under the Paris Agreement, which was adopted in the same year as the SDGs (Falkner, 2016; Jacquet & Jamieson, 2016). The low prioritization and interlinkage score for "energy" (SDG 7) are somewhat surprising. SDG 7 (energy) was not a contested goal during the formation of the SDGs and was already considered then a goal strongly related to other issues such as "poverty" (SDG 1), "hunger" (SDG 2), "health" (SDG 3), and "education" (SDG 4). And yet, we do not observe these linkages of "energy" (SDG 7) in our results.We can further assess how SDGs are linked by looking at how often pairs of SDG topics are mentioned together. In total, 136 of such pairs SDG topics are possible. Some pairs of SDG topics are mentioned together more often than others, as visualized in figure 7.2. Here we see that the SDGs with the

highest interlinkage score are mostly linked with one another: the topics that are most frequently mentioned together are "industry" (SDG 9) with "consumption" (SDG 12), "consumption" (SDG 12) with "partnerships" (SDG 17), and "partnerships" (SDG 12) with "industry" (SDG 9). These same SDGs are mentioned together frequently with the topic "work" (SDG 8), and to a lesser extent with the topics "poverty" (SDG 1), "hunger" (SDG 2), "health" (SDG 3), "education" (SDG 4), "cities" (SDG 11), and "climate" (SDG 13). The least prioritized and interlinked SDG topics are in the periphery of the network: "inequality" (SDG 10), "oceans" (SDG 14), and "land" (SDG 15). Importantly, two important 'bridging' SDG topics can be identified: the topic "work" (SDG 8) forms a direct connection from the core of the network to "inequality" (SDG 10), one of the less linked and less prioritized goals. The topic "water" (SDG 6) forms an important bridge to connect the topics "oceans" (SDG 14) and "land" (SDG 15) to the rest of the topics in the network.

7.3.2. More SDG topics are linked over time, especially "gender" (SDG 5), "consumption" (SDG 12) and "climate" (SDG 13)

When we look at the data year by year, we observe that all SDG topics shift over time towards a higher *SDG_A interlinkage score*, see figure 7.3 and figure S7.1 in the supporting material, pointing towards an overall increase in the linking of SDG topics by international organizations. Many SDG topics are also more prioritized. This trend is not uniform, however. The prioritization of topics such as poverty (SDG 1) and peace (SDG 16) has gone down, that is, those topics are mentioned less over time. On the other hand, the topics "gender" (SDG 5), "work" (SDG 8), "industry" (SDG 9), "consumption" (SDG 12), "climate" (SDG 13) and "partnerships" (SDG 17) became more prioritized and interlinked. For example, the topic "climate" (SDG 13) was first in the "low prioritization, low interlinkage score" quadrant in 2013, but moved to the "high prioritization, high interlinkage score" quadrant in 2019. The topic of "consumption" (SDG 12) became more strongly prioritized. The topic "gender" (SDG 5) became a bit more prioritized as well, even though this topic is still relatively low on both prioritization and interlinkage score in 2019.

However, the quadrant visualizations that we offer here do not reveal the significance of shifts. Based on Wilcoxon signed-rank test on the values of *SDG_A prioritization*, see table S7.1 in the supporting material, we find that those SDG topics that showed pronounced shifts have all indeed been significantly ($p < 0.05$) more prioritized over time. Notably, the topics "inequality" (SDG 10), "cities" (SDG 11), "oceans" (SDG 14) and "land" (SDG 15) have been significantly ($p < 0.05$) more prioritized over time. Thus, while these SDGs do not show large shifts in figure 7.3, they do show a significant increase. Nevertheless, they remain among the lower prioritized SDGs, especially SDG 10 ("inequality") and SDG 15 ("land"). Prioritization of SDG 1 ("poverty") has decreased slightly, yet significantly ($p < 0.05$).

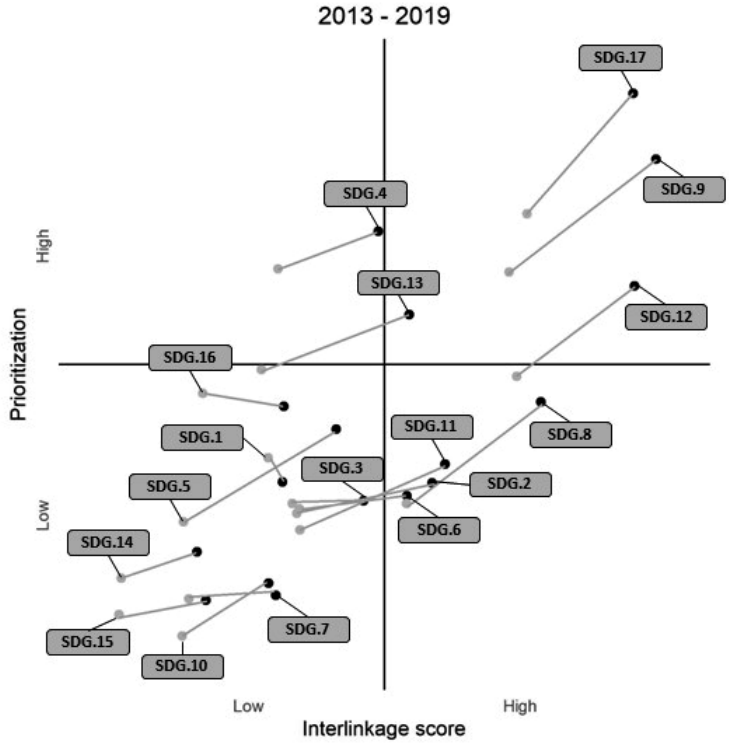


Figure 7.3. SDG prioritization and interlinking from 2013 to 2019

Normalized values of *SDG_A prioritization* (Y-axis) and *SDG_A interlinkage score* (X-axis) for each SDG, in 2013 (light gray dot) and in 2019 (black dot), with the grey lines indicating their change from 2013 to 2019. Data was aggregated over all international organizations in the set for which data is available in all years (n = 114). Quadrants for separate years 2013, 2015, 2017 and 2019 are available in figure S7.1 in the supporting material.

To specify which SDG topics have been more or less linked, we rely on statistical testing with the Wilcoxon signed-rank test on the variable set *$SDG_{A\text{-}B}$ interlinkage*. Over time, we see a significant ($p < 0.05$) increase for many of the SDG combinations, see figure 7.4, indicating a significant increase in how often these topics are mentioned together. The increase is especially evident from 2015 onwards, suggesting that the adoption of the SDGs may have indeed stimulated an increased focus on linkages between the issue areas embedded in the goals. From 2015 to 2017, especially the topics "gender" (SDG 5) and "climate" (SDG 13) were increasingly mentioned together with other SDG topics. These issues are thus increasingly considered important in relation to other issues, on top of being considered more important as stand-alone issues, as described above. From 2017 to 2019, links with the topic "gender" (SDG 5) increased again. In addition, the topics of "consumption" (SDG 12), "land" (SDG 15), and to a lesser extent "inequality" (SDG 10) were also increasingly linked with the other SDG topics.Both in the periods 2015-2017 and 2017-2019, there has also been a significant increase in links between the topics

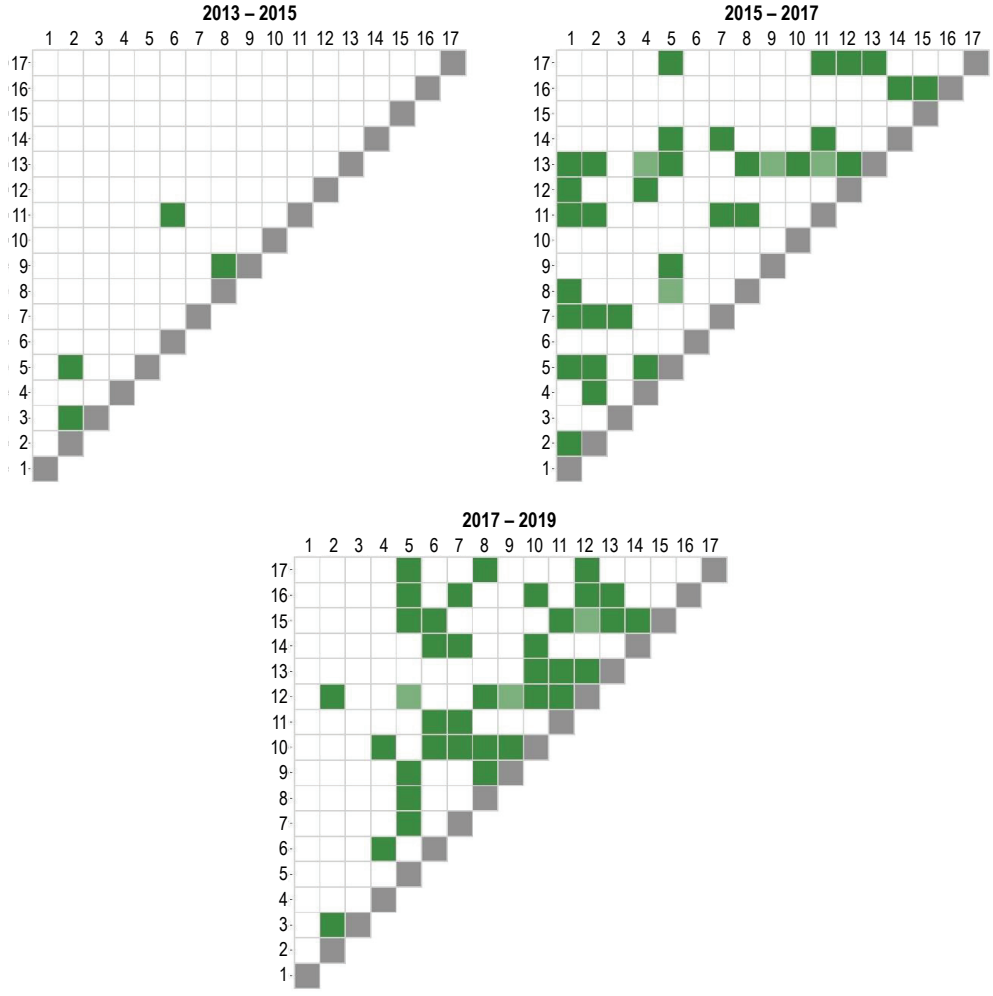


Figure 7.4. Changes over time in interlinking frequency of each pair of SDGs

Significant changes ($p < 0.05$) in $SDG_{A\text{-}B}$ *interlinkage* for each pair of SDGs from 2013 to 2015 (top-left), from 2015 to 2017 (top-right) and from 2017 to 2019 (bottom). Wilcoxon signed-rank test was used for paired samples, for all international organizations for which data was available in all years (n = 114). White indicates no significant change. Light and dark green indicate respectively a small and moderate increase in how frequent the two SDGs are mentioned together on international organizations' websites.

"energy" (SDG 7) and some of the more social-focused SDG topics, including "poverty" (SDG 1), "hunger" (SDG 2), "health" (SDG 3), "gender" (SDG 5) and "peace" (SDG 16). Links between "energy" (SDG 7) and the environment-focused SDG topics of "cities" (SDG 11), "consumption" (SDG 12) and "oceans" (SDG 14) also significantly increased.

7.3.3. Within the UN system, SDG topics are linked more, except for those related to "oceans" (SDG 14) and "land" (SDG 15)

International organizations within the UN system prioritize the topics "poverty" (SDG 1), "health" (SDG 3), "gender" (SDG 5), "work" (SDG 8), "inequality" (SDG 10), "cities" (SDG 11), "consumption" (SDG 12), "peace" (SDG 16) and "partnerships" (SDG 17) significantly ($p < 0.05$) more as compared to international organizations outside the UN system. Notably, organizations within the UN system prioritize the topics "oceans" (SDG 14) and "land" (SDG 15) less than organizations outside the UN system do, though this difference is not statistically significant, see table S7.2 in the supporting material.

International organizations from the UN system seem to interlink SDG-related topics more than others, see figure 7.5. This is in line our finding from chapter 6 that suggest that international organizations from the UN system strive more to integrate issue areas than those outside the UN system. Notably, while international organizations from the UN system show higher interlinkage score for almost all SDG topics, this is not the case for the topics "energy" (SDG 7), "oceans" (SDG 14) and "land" (SDG 15). Thus, while international organizations from the UN system generally integrate issue areas more, this is not the case for some specific topics, including the two topics related to preserving earth's ecosystems (oceans and land).

There are strong differences in the frequency at which SDG combinations are mentioned together within and outside the UN system. We find that UN-system international organizations have significantly ($p < 0.05$) higher values for $SDG_{A\text{-}B}$ *interlinkage* for 97 out of 136 possible SDG combinations, see figure S7.2 in the supporting material. This indicates that for most combinations of SDG topics, UN-system organizations mention these topics together significantly more than organizations outside the UN system do. Outside the UN system, the topics "health" (SDG 3), "inequality" (SDG 10), "oceans" (SDG 15) and "land" (SDG 15) are mentioned in relative isolation from the other SDGs topics, see figure 7.6. Within the UN, these SDG topics are more frequently mentioned together with other SDG topics, though he topics "oceans" (SDG 14) and "land" (SDG 15) remain relatively disconnected within the UN as well. For both groups, the core topics are the same: "industry" (SDG 9), "consumption" (SDG 12), and "partnerships" (SDG 17) are most frequently mentioned together with one another and with other SDG topics, both within and outside the UN system.

7.3.4. Socio-economic view differs from environmental view on SDG interlinkages

For those international organizations that focus on economic issues, the topics "work" (SDG 8), "industry" (SDG 9), "consumption" (SDG 12) and "partnerships" (SDG 17) are linked to other SDG topics most frequently and also most prioritized. All other SDG top-

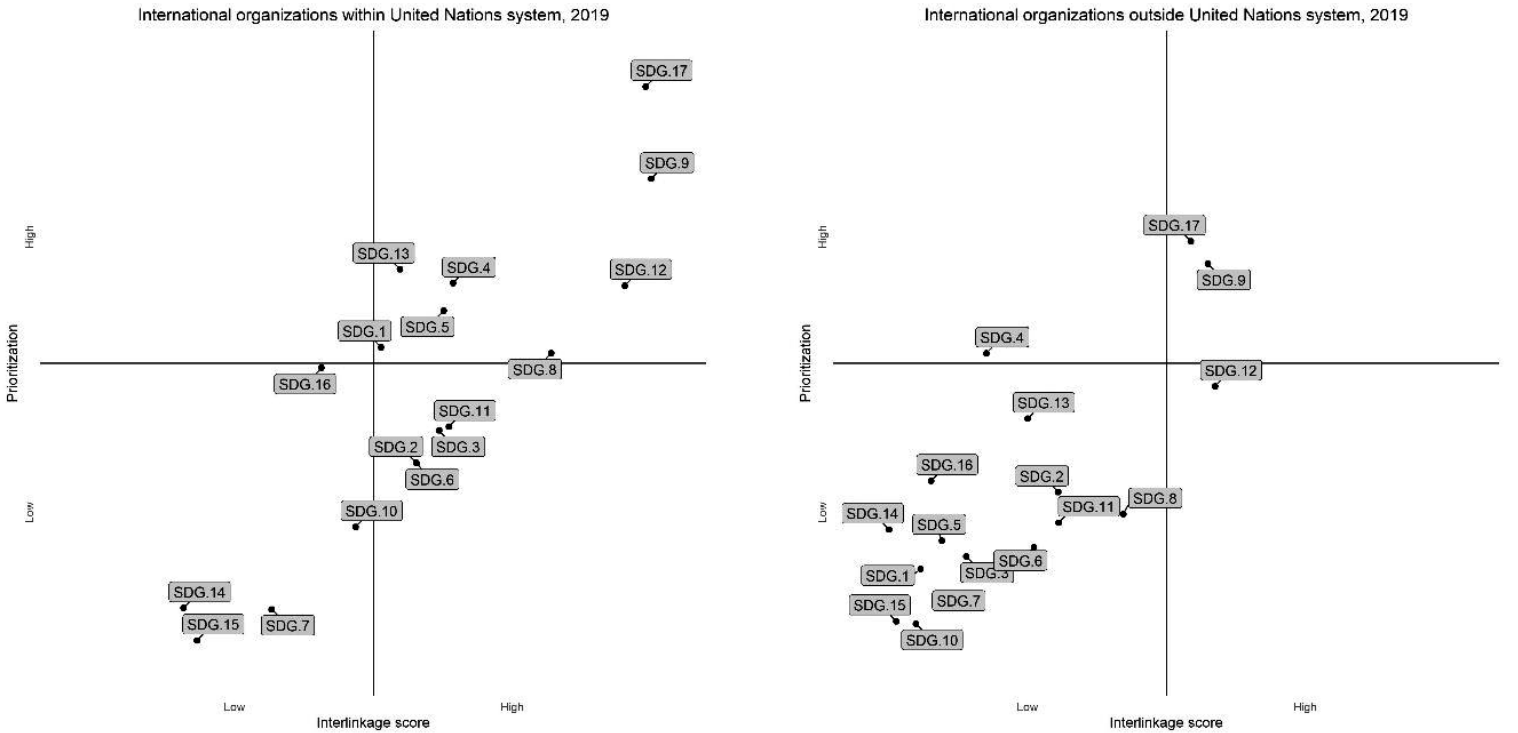


Figure 7.5. SDG prioritization and interlinking within and outside the UN system

Normalized values of *SDG$_A$ prioritization* (Y-axis) and *SDG$_A$ interlinkage score* (X-axis) for each SDG, in 2019, aggregated for international organizations within the UN system (left) and outside the UN system (right). Data was aggregated over all international organizations within (n = 38) and outside (n = 106) in the set for which data is available in 2019.

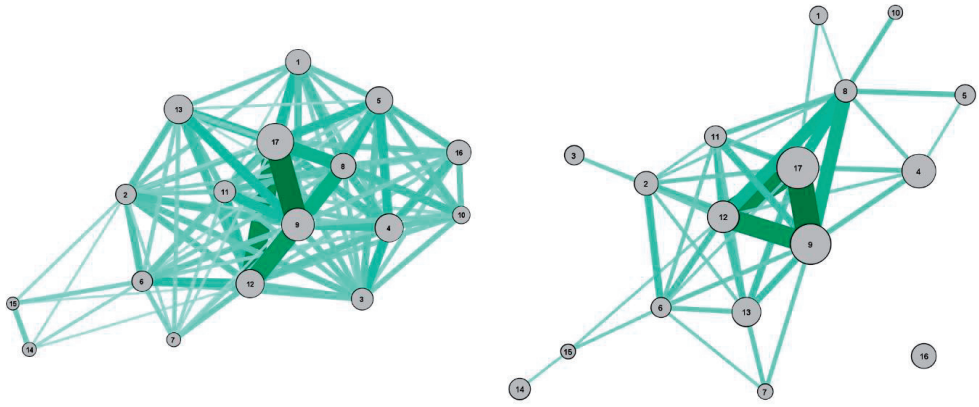


Figure 7.6. Network representation of how SDGs are prioritized and interlinked within and outside the UN system

Network representation of *SDG_A prioritization* (size of nodes) and *SDG_{A-B} interlinkage* (edge thickness) based on 2019 data for international organizations within (left, n = 38) and outside (right, n = 106) the UN system. To enable visualization of the core structure, only *SDG_{A-B} interlinkage* over a threshold value (0.15) are shown. The thicker and the darker the color of the edge, the more often those two SDGs are mentioned together. The larger the size of the node, the more frequent that SDG is mentioned.

ics are lower both in prioritization and in interlinkage score, see figure 7.7. This points towards economic organizations having a relatively insular focus on the economic SDG topics and the partnership topic. This insular focus becomes clearer when looking at which specific SDG combinations are mentioned together more often, see figure 7.8. The topics of "work" (SDG 8), "industry" (SDG 9), "consumption" (SDG 12), and "partnerships" (SDG 17) clearly form the core of the 'SDG network' for organizations that focus on economic policies and programs. Here, the topics of "oceans" (SDG 14) and "land" (SDG 15) are least prioritized and least linked to other SDGs.

International organizations working primarily on social issues, however, show slightly more dispersion of the SDGs across the four quadrants as compared to economic international organizations. For social organizations, the topics "education" (SDG 4), "industry" (SDG 9) and "partnerships" (SDG 17) are considered important as self-standing goals and in relation to other goals. "Peace" (SDG 16) is also highly prioritized, but less linked to other SDG topics. As compared to economic international organizations, social organizations prioritize "education" (SDG 4), "gender" (SDG 5) and "peace" (SDG 16) significantly ($p < 0.05$) more as stand-alone goals, see table S7.3 in the supporting material. Notably, social organizations prioritize "energy" (SDG 7) significantly ($p < 0.05$) less than economic organizations do. As energy is considered a social development goal, with strong links to several of the social development SDGs (Kamau et al., 2018; Stockholm Resilience Centre, 2016), it is surprising that it has a relatively marginal position with socially oriented international organizations. Similar to economic organizations, social

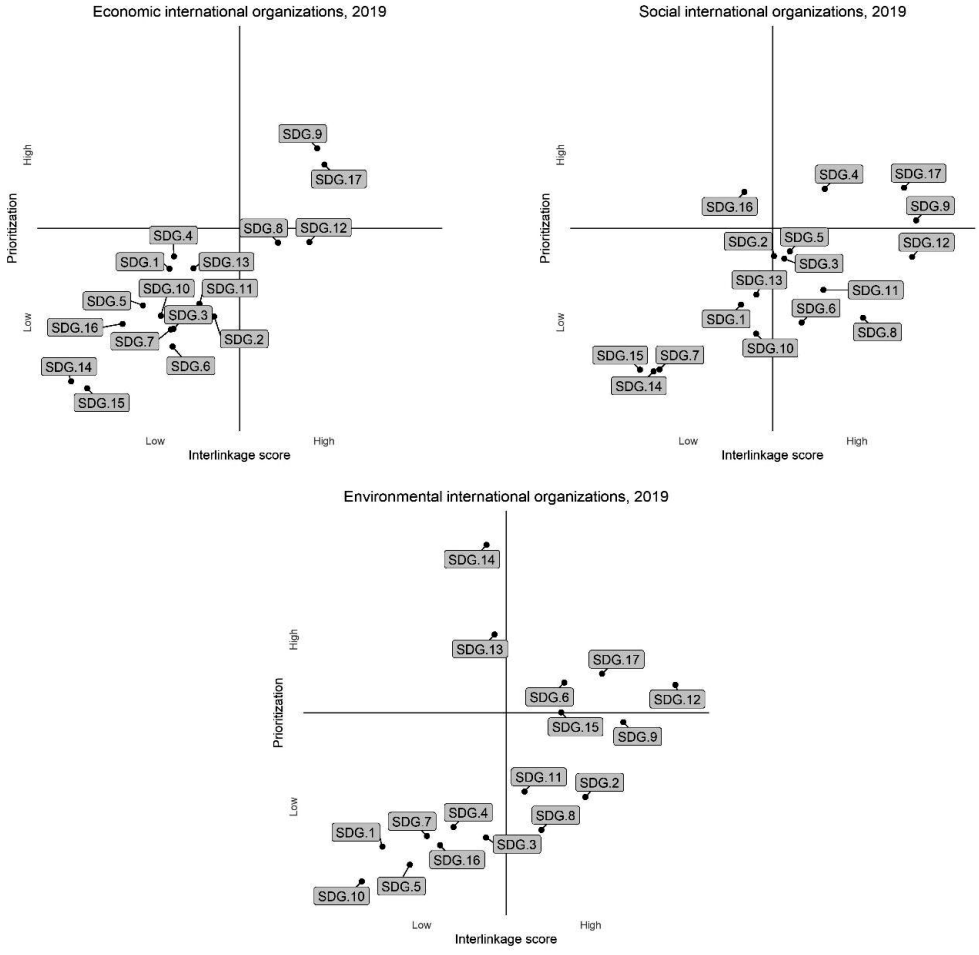


Figure 7.7. SDG prioritization and interlinking by international organizations working on economic, social or environmental issues

Normalized values of *SDG_A prioritization* (Y-axis) and *SDG_A interlinkage score* (X-axis) for each SDG, for international organizations working primarily on economic (top-left), social (top-right) or environmental issues (bottom). Data was aggregated for economic (n = 41), social (n = 49) and environmental (n = 23) organizations for which data was available in 2019. International organizations classified as working on more than one dimension of sustainable development (e.g. economic and social issues) were removed from the dataset.

organizations prioritize "oceans" (SDG 14) and "land" (SDG 15) least and also least often mention these SDG topics together with any other SDG topics. In terms of which specific SDG combinations are frequently mentioned together, we find that socially oriented international organizations have significantly ($p < 0.05$) different values for 11 out of 136 SDG combinations, as compared to economic organizations, see figure S7.3 in the supporting material. Conversely, this means that for 125 out of 136 SDG combinations there is no statistically significant difference in how often they are mentioned together

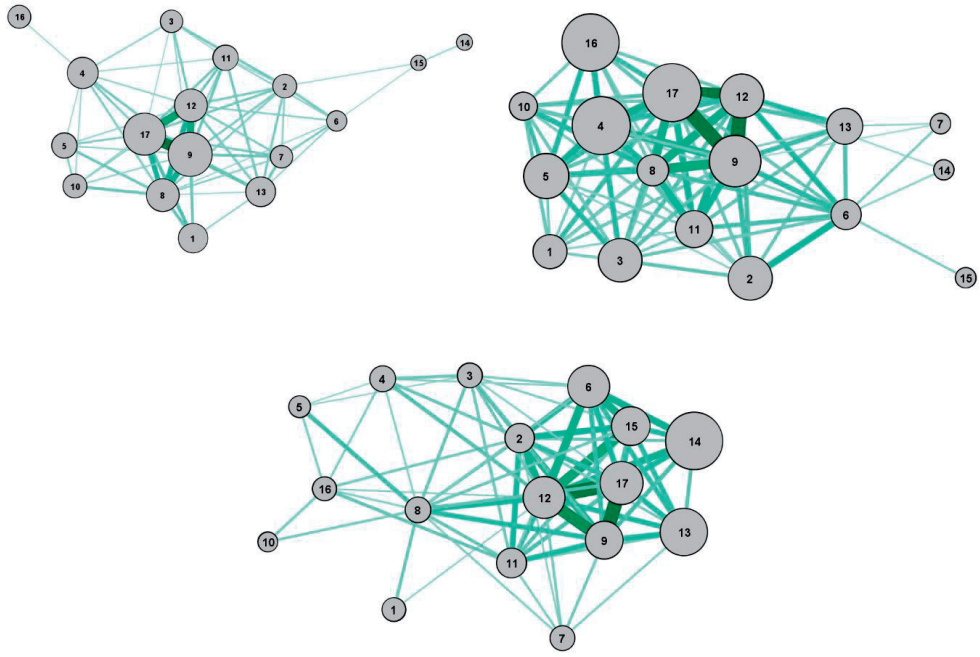


Figure 7.8. Network representation of how SDGs are prioritized and interlinked by economic, social and environmental international organizations

Network representation of SDGA prioritization (size of nodes) and SDGA-B interlinkage (edge thickness) for economic (top-left), social (top-right) and environmental (bottom) international organizations. Data was aggregated over economic (n = 41), social (n = 49) and environmental (n = 23) organizations for which data was available in 2019. International organizations classified as working on more than one dimension of sustainable development (e.g. economic and social issues) were removed from the dataset. To enable visualization of the core structure, only the SDGA-B interlinkage values over a threshold (0.13) are shown. The thicker and the darker the color of the edge, the more frequent those two SDGs are mentioned together. The larger the size of the node, the more frequent that SDG is mentioned individually.

by economic and social international organizations. Social and economic international organizations thus largely link the SDG topics in the same way.

International organizations working primarily on environmental issues seem to differ from economic and social international organizations. Environmental organizations prioritize the topics "water" (SDG 6), "climate" (SDG 13), "oceans" (SDG 14) and "land" (SDG 15) significantly ($p < 0.05$) more as compared to both economic and social international organizations, see table S7.3 in the supporting material. In terms of interlinkage score, "oceans" (SDG 14) and "land" (SDG 15) score much higher with environmental organizations than with social and economic organizations. Similar to social and economic organizations, environmental organizations consider "industry" (SDG 9), "consumption" (SDG 12) and "partnerships" (SDG 17) as highly interlinked and of rela-

tively high importance. The topic "climate" (SDG 13) takes on an unique position. While environmental organizations prioritize climate more, its interlinkage score is more or less similar between economic, social and environmental organizations, indicating that all three groups consider "climate" (SDG 13) a topic that links to many other SDG topics.

Looking at specific combinations of SDG-related topics mentioned together, environmental organizations deviate significantly on 34 out of 136 SDG combinations as compared to social organizations, and on 20 out of 136 SDG combinations as compared to economic organizations. Environmental organizations especially mention the environmental topics "water" (SDG 6), "climate" (SDG 13), "oceans" (SDG 14) and "land" (SDG 15) much more frequently together. Also, these environmental topics are much more frequently mentioned together with the topics "industry" (SDG 9) and "consumption" (SDG 12), see figure S7.3 in the supporting material. Notably, economic organizations mention the combinations "poverty" with "climate" (SDG 1 with SDG 13) and "inequality" with "climate" (SDG 10 with SDG 13) significantly more often than environmental organizations do. Thus, while environmental organizations overall link the environmental SDG topics to other SDG topics more often, economic organizations do frequently link economic issues to climate (SDG 13).

7.4. Discussion

With seven years left to achieve the SDGs, the insights of our study provide four important conclusions regarding the implementation of the goals.

First, our study shows that a large group of international organizations links various topics related to SDGs, and do so increasingly over time. This is especially the case since 2015, suggesting that the SDGs may have played a role in facilitating the integration of global policy issues. Among all global policy topics assessed, the topics "gender" (SDG 5), "consumption" (SDG 12) and "climate" (SDG 13) are increasingly linked with topics related to many other SDGs. We also find that the environmental policy topics "water" (SDG 6), "climate" (SDG 13), "oceans" (SDG 14) and "land" (SDG 15), are increasingly linked to one another. This is possibly due to conscious efforts, for example by the secretariat to the Convention on Biological Diversity, which has strategically linked biodiversity (SDG 15) to climate (SDG 13) to increase its political attention (Jinnah, 2011). As issues and policies for these issues are increasingly linked, this might over time lead to a situation where the SDGs are indeed "integrated and indivisible" (UN, 2015).

Yet, while there are more and more links between SDG topics, these links are not balanced. Across all years studied, the topics "work" (SDG 8), "industry" (SDG 9), "con-

sumption" (SDG 12) and "partnerships" (SDG 17) are the most prioritized goals, and they mentioned most often together with one another and with other SDG topics, suggesting strong links of these topics with others in the policy practice of international organizations. These four SDGs, which mainly focus on economic issues, are thus the core SDGs for international organizations. Conversely, the global policy topics "energy" (SDG 7), "inequality" (SDG 10), "oceans" (SDG 14) and "land" (SDG 15) are least prioritized and least linked to topics related to other SDGs. These topics are thus peripheral in the policy practice of international organizations, as least as judged from their external presentation on websites. These most and least prioritized and linked goals do not change in the period that we studied. Thus, despite small changes in linking over time, for example between the environmental policy topics as described above, the overall pattern of most and least important goals has not changed.

The global policy issues of the SDGs are thus increasingly linked by international organizations, but some goals are 'left behind'. Especially the topics "oceans" (SDG 14) and "land" (SDG 15) are largely separated from other SDG topics. We observe this both within and outside the UN system, and for both economically and socially oriented international organizations. This relative separation of environmental from socio-economic concerns is in line with previous studies on the SDGs (Hickel, 2019; Le Blanc, 2015; Smith et al., 2021). Some even argued that the socio-economic development goals in the SDGs are inherently incompatible with the goals on environmental protection (Clémençon, 2021; Spaiser et al., 2017; Zeng et al., 2020). The relative isolation of the ocean and land topics from the other SDG topics at the international level is thus not surprising; yet from an environmental perspective, it is deeply worrying. It is these SDGs that focus on protecting the earth's ecosystems on which all humans depend (Stockholm Resilience Centre, 2016). To achieve the aspiration of the 2030 Agenda to balance economic, social, and environmental concerns, the integration of environmental concerns must thus be further strengthened, both within and outside the UN system. On a positive note, "water" (SDG 6) and "climate" (SDG 13) appear better integrated with the other SDG topics, and also to be connected to the topics "oceans" (SDG 14) and "land" (SDG 15). They could thus provide a bridge to further advance the integration of environmental concerns throughout the system of international organizations.

Second, we find that international organizations from the UN system mention SDG topics much more often together, compared with organizations outside the UN system. This indicates an overall stronger attention for links between the SDGs within the UN system, for almost all SDG interlinkages. As a whole, this results in a seemingly well-integrated SDG network within the UN system. This is somewhat surprising, as previous studies have criticized the 'siloed' approaches and nature of the UN (Anthes, 2019; Machalaba et al., 2015). A possible explanation is that while the SDG network appears

well-integrated within the UN, this study is solely based on texts. We could thus observe here a discursive integration of SDG issue areas within the UN, but not a substantive one (F. Biermann, Hickmann, Sénit, et al., 2022) . However, if our results were purely the result of conscious 'window-dressing,' one would expect more links between all SDGs by the UN. This is not the case, as links with and between the topics "oceans" (SDG 14) and "land" (SDG 15) do not significantly differ within and outside the UN. An alternative explanation is that while issue linkages within the UN are far from optimal, as indicated by the critical studies on the UN, issue linkages are nevertheless increasing and issues are significantly more linked within than outside the UN, as shown by our results. While attempts within the UN to increase links between issue areas have been fraught with challenges due to contradicting mandates and visions (Bauer & Biermann, 2004; Dupont & Skjold, 2022; Schubert & Gupta, 2013), the UN has also recently increased efforts towards issue integration (UNDESA, 2016, see also chapters 5 and 6). It could thus be that while issue linkages within the UN are far from optimal, as indicated by the critical studies on the UN, issue linkages are nevertheless increasing and issues are significantly more linked within than outside the UN, as shown by our results. For the implementation of the SDGs then, efforts to increase the integration of policy issues may be best focused on international organizations outside the UN system. Within the UN system, the integration of concerns is generally further along, though the integration under "oceans" (SDG 14) and "land" (SDG 15) remains weak compared to the integration of all other concerns in the SDGs, so these topics could use further strengthening.

Third, there is a strong discrepancy between environmental international organizations vis-à-vis social and economic international organizations in how they link the global policy issues in the SDGs. In all three groups, "industry" (SDG 9), "consumption" (SDG 12) and "partnerships" (SDG 17) are the core topics. For environmental international organizations, "oceans" (SDG 14) and "land" (SDG 15) are also very important, while these two topics are of the lowest importance to social and economic international organizations. The latter rather focus more strongly on the topics "work" (SDG 8), "education" (SDG 4), and "gender" (SDG 5). Thus, while socio-economic concerns are already reasonably integrated in both social and economic international organizations, there is still a lack of integration of environmental concerns in both. Conversely, for environmental international organizations, there is also a lack of integration of especially social concerns. These differences may reflect the existence of different views on the meaning of sustainable development in both groups, where some may view the environmental goals as being at the basis of all other goals (Elder & Olsen, 2019), and others may mainly still see the SDGs as a socio-economic agenda (F. Biermann, Hickmann, Sénit, et al., 2022). Such discrepant views may hinder the effectiveness of the SDGs as an overarching set of goals to get governance actors to work in the same direction (Kotzé et al., 2022). For the implementation of the SDGs, or possibly subsequent goals for the post-2030

period, a clearer vision on the meaning of sustainable development may be needed to ensure that all governance actors are aligning their work towards that vision (R. E. Kim & Bosselmann, 2015).

Fourth, the SDG interlinkages identified from political text in our study deviate in several cases from the natural science view on SDG interlinkages. For example, our results show that the topic of "inequality" (SDG 10) is not frequently linked with other SDG topics in the policy practice of international organizations. Yet, from the natural science perspective, inequality is often considered an important leverage point for achieving progress on many other SDGs (Lusseau & Mancini, 2019; Pradhan et al., 2017). As a second example, the issue areas water (SDG 6), energy (SDG 7), oceans (SDG 14) and land (SDG 15) have many synergistic links with the other SDGs according to SDG indicator-based models (Pham-Truffert et al., 2020; Warchold et al., 2021). Since we use public communication data, we expect especially positive synergies to be highlighted. Yet in our study, these SDG topics are not often linked by most international organizations. The issue areas water (SDG 6) and energy (SDG 7) are also frequently connected to food security (SDG 2) in academic literature, often under the term Water-Energy-Food nexus (Liu et al., 2018). Also in some international organizations, for example the Food and Agriculture Organization, attention for the connections between these issue areas has increased (Dubois et al., 2014). Yet in our analysis on a larger group of international organizations, interlinkages between these SDG topics are not strongly present. As a last example, we find that the topics "industry" (SDG 9) and "partnerships" (SDG 17) are of high importance to environmental international organizations. This is completely contrary to a recent study based upon a survey among experts on environment and ecosystem services, where these two SDG topics are ranked as least important (S. Yang et al., 2020).

While these are only a few examples, they show that there are clear and sometimes strong discrepancies between the political practice of international organizations and the natural science view on SDG interlinkages. These discrepancies could be the result of different methods of measuring SDG interlinkages. Currently, there is no consensus on how SDG interlinkages are best assessed, and different methods may simply lead to different results. For example, SDG 12 (consumption) is considered to have mostly positive synergies with other SDGs in one study (Pham-Truffert et al., 2020), but mostly trade-offs in another study (Lusseau & Mancini, 2019). In our study, we find that "consumption" (SDG 12) is frequently discussed with other SDGs on international organizations' websites, though here we cannot discern between positive synergies and trade-offs. Perhaps the unclear impact of consumption on all other goals is the reason why it is often discussed. Notably, our finding that "consumption" (SDG 12) and "partnerships" (SDG 17) are some of the core SDGs from a political viewpoint aligns well with results

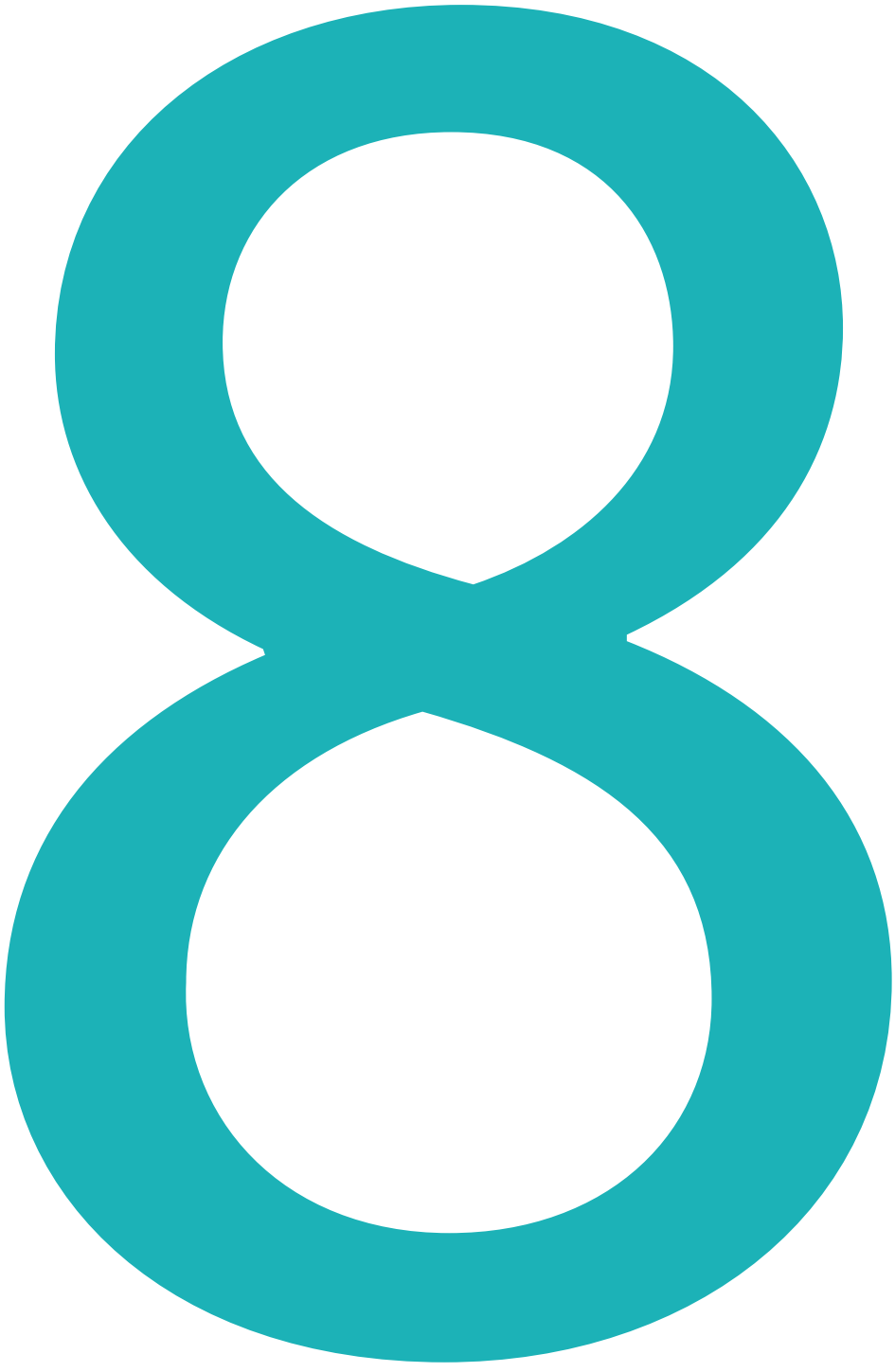
from expert opinion from the Independent Group of Scientists and the International Council for Science (ICSU). Based on surveys, it was concluded that SDG 12 and SDG 17 are consistently viewed as shaping the rest of 2030 Agenda (Dawes, 2022). The view of science as revealed by expert surveys, is thus more similar to the view of international organizations than the view of natural science as revealed by indicator-bases studies, which may point towards problems with the SDG indicators as reflection of the SDG goals (R. E. Kim, 2023). Overall, the exact nature of the discrepancies that we found between natural science studies and actual political practice require further analysis. Also the underlying reasons for the discrepancies warrants more attention. Future research would need to focus on this area. Notwithstanding the reasons, the different ways of linking the SDGs between the natural sciences and political practice could lead to problems for implementing the SDGs. As described in the introduction, a good understanding of SDG interlinkages is essential for achieving the goals jointly (Nilsson et al., 2022). To prevent efforts that negate one another, this understanding of SDG interlinkages must also be shared among all governance actors involved in their implementation. Thus, there is a need to bring together the scientific and policy practice communities to gain a shared understanding of SDG interlinkages. One opportunity here is the use of participatory approaches, where both practitioners and scientists are involved in identifying SDG interlinkages. The use of such approaches in SDG interlinkages research has been very limited so far (Bennich et al., 2022). Another opportunity is building a data repository of knowledge on SDG interactions that explicitly includes knowledge from practitioner communities (Messerli et al., 2019).

To conclude this section, there are several limitations to this study that could be addressed by further analysis with complementary methods and data. First, we rely solely on the mentioning together of SDG topics to infer links between the SDGs. SDG links in this study are thus reflective of association between SDG topics, which may be a soft measure of how SDGs are linked, and how policies for the SDGs are integrated, by international organizations. As described, association does not necessarily correspond to a causal link between those SDG issue areas, nor to well-integrated policies, programs, or activities of international organizations. Future studies need to assess whether the semantic association of SDG topics also reflect SDG topics linked in policy outcomes or programs of international organizations. Second, our analysis is based on website texts. As a form of public communication, these texts may be influenced by window-dressing. Third, our study is based on data until 2019 only, which a relatively short time span after the SDGs were adopted. While we do see an increase in linking SDG issue areas, these are relatively small changes and do not affect the overall structure of how the SDGs are connected. More recent data could hence show a continuation of the trends observed here, which might ultimately result in a re-prioritization and reconsideration of SDG interlinkages by international organizations.

7.5. Conclusion

This study examined how international organizations prioritize and link the global policy issues covered by the 17 SDGs, which is also indicative of how their policies for the 17 SDGs are integrated. We find that the topics "work" (SDG 8), "industry" (SDG 9), "consumption" (SDG 12) and "partnerships" (SDG 17) are most prioritized and most frequently linked with the other topics in the SDGs. Over time, SDG topics are increasingly linked by international organizations; this is the case especially for the topics "gender" (SDG 5), "consumption" (SDG 12) and "climate" (SDG 13), which are all more and more mentioned together with other SDG topics. There are also more co-mentions of environmental topics with one another, namely "water" (SDG 6), "climate" (SDG 13), "oceans" (SDG 14) and "land" (SDG 15); yet it is also evident that the key environmental topics "oceans" and "land" are discussed largely separately from economic and social topics.

Our study also shows clear differences between groups of international organizations. International organizations working on economic and social issues link the SDG topics in a similar way, both mentioning on their websites the topics "work" (SDG 8), "industry" (SDG 9), "consumption" (SDG 12) and "partnerships" (SDG 17) often with topics related to other SDGs; and at the same time, these organizations mention topics "oceans" (SDG 14) and "land" (SDG 15) the least often in conjunction with other policy concerns. International organizations that work on environmental issues, however, have a significantly different view. For them, the topics "industry" (SDG 9) and "partnerships" (SDG 17) also stand at the core, but apart from that, topics related to the environmental SDGs are most frequently mentioned, both alone and together with one another and together with topics related to other SDGs. Organizations from the UN system mention almost all SDG topics more frequently together than organizations outside the UN, though also here, the environmental topics "oceans" (SDG 14) and "land" (SDG 15) remain relatively separate also within the UN system. This disjoint between environmental concerns and policies, on the one hand, and the much stronger focus on economic issues, on the other, is one of the central, and possibly most problematic, findings of our study. Only with a much stronger integration of environmental priorities with economic issues will sustainable development become a reality.



The Sustainable Development Goals and integration at the Convention on Biological Diversity

This chapter is based on:

Bogers, M., Biermann, F., Kalfagianni, A., & Kim, R. E. (under review). The influence of the Sustainable Development Goals on the Kunming-Montreal Global Biodiversity Framework.

Abstract

In 2015, biodiversity gained new prominence in international politics by its inclusion in the Sustainable Development Goals (SDGs). These 17 global goals are expected to steer political processes by offering a "common framework" to align global policies. Yet little is known about the effects that the SDGs have on political processes, and on how they support biodiversity protection. In this article, we analyze how the SDGs have shaped discourses around the formation of the Kunming-Montreal Global biodiversity framework. We conducted a discourse analysis on official documents from the formation process, and on Tweets created during the 15th conference of the parties. We find that the SDGs have served four functions for the framework: agenda alignment; providing a dominant model of governance; serving as a relational tool; and providing different framings of sustainable development. We discuss the implications of these four functions for global biodiversity protection and for governance through goals.

8.1. Introduction

In this chapter, we focus on institutional and policy integration at the micro-level. We analyze how the SDGs have influenced the creation of a new global agenda, taking the Kunming-Montreal Global Biodiversity Framework as a case. More specifically, we study two distinct discourses around the formulation of the new biodiversity framework, to investigate how the SDGs have influenced this new framework. We take an inductive approach, thus allowing multiple possible influences of the SDGs on the framework to emerge from the data. While institutional and policy integration are also studied, they are not the exclusive focus of this study.

Global biodiversity is declining at alarming rates, posing a serious threat to the natural resources needed to sustain life on earth (IPBES, 2019). To counter these trends, governments have repeatedly agreed on joint action, notably through the 1992 Convention on Biological Diversity (CBD) (Kotzé, 2014). And yet, despite three decades of increasingly ambitious CBD agendas and continuous political efforts, most global targets to halt biodiversity loss have not been met (Butchart et al., 2010; CBD, 2002, 2020a; Xu et al., 2021). In December 2022, the parties to the CBD adopted a new global agenda to guide biodiversity action for the next eight years: the Kunming-Montreal Global biodiversity framework. Preparations for this framework started in 2016, and negotiations concluded at the 15th meeting of the Conference of the Parties to the CBD, part two, which took place in Montreal, Canada, in December 2022 (Earth Negotiations Bulletin, 2022; Tsioumani, 2020). The new global biodiversity framework builds on earlier agendas, including the 2010 'Biodiversity Target' adopted in 2002 and the 'Strategic Plan for Biodiversity 2011-2020' with the twenty associated 'Aichi Biodiversity Targets'. All these agendas have formed the main global policy framework for biodiversity over the last decades.

The protection of biodiversity is one of the many targets included in the Sustainable Development Goals (Bieberstein et al., 2019; Moranta et al., 2022; UN, 2015). In the negotiation of the 17 SDGs, there was broad support to include many biodiversity targets especially under SDG 15 (land), which were largely based on the earlier Aichi targets (Kamau et al., 2018) For example, SDG Target 15.5 calls to "Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species", and is directly derived from Aichi Target 5: "By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced" (see also Schultz et al., 2016).

By fully integrating biodiversity protection into the SDGs, the importance of biodiversity and its interconnectedness with environment, society and economy have been further

recognized; some have described this uptake of biodiversity into the SDGs even as the start of a 'new era' of biodiversity governance, where biodiversity concerns are fully integrated into the broader sustainability agenda (Visseren-Hamakers & Kok, 2022).

And yet, the question arises to what extent the new SDGs will really advance global biodiversity protection and serve as a game changer in the global fight for halting the loss of biodiversity. Do the SDGs influence the formation of new issue-specific global agendas, such as the global diversity framework, and in what ways?

To analyze this potential influence of SDGs on global biodiversity policies, the concept of agenda levels from public policy theory is useful. Birkland (2007) suggests investigating four levels of a public policy agenda, where issues move from a broader 'agenda universe' to the 'systemic agenda,' then 'institutional agendas' and lastly 'decision agendas.' Here, we are interested in the systemic and institutional agendas: the systemic agenda covers the topics that the political community sees as needing attention, and a subset of these are taken up in the institutional agendas. These institutional agendas are thus more limited in scope, because the resources and time of institutions are finite (Birkland, 2007). The SDGs are an example of an international systemic agenda, as a set of issues that the international community has agreed to be highly important (Chasek et al., 2016).. The question then is whether these SDGs will be taken up by international institutions in their institutional agendas, which is in this case the novel biodiversity framework of the CBD, see figure 8.1.

While the SDGs lack legal force or a strong compliance mechanism (F. Biermann et al., 2017), the literature suggests that they are still likely to influence these institutional agendas. First, global goals may serve as "collective ambitions" (Kanie et al., 2017), "aspirations" (Finnemore & Jurkovich, 2020) or "a North Star" (Broek & Klingler-Vidra, 2021), that is, the SDGs could center attention on important global challenges and inspire international actors to adjust their agendas, ultimately resulting in the institutionalization of new goals (Finnemore & Jurkovich, 2020). Second, global goals may function as "prescriptive norms" (Fukuda-Parr, 2014), defining what ought to be worked towards. The high political standing of the SDGs brings political and social pressures to align new agendas to the goals (Fukuda-Parr, 2014; Fukuda-Parr & McNeill, 2019). Third, indicator-based global goals, including the SDGs, may serve as self-regulation instruments, where actors are incentivized to report on globally defined indicators to strengthen their legitimacy and accountability (Freistein, 2017; Fukuda-Parr, 2014).

So far, most research on the influence of SDGs on political agendas has studied the national level. For example, in China the SDGs have helped to inspire a national plan of implementation for the 2030 Agenda (Kuhn, 2018; People's Republic of China, 2016);

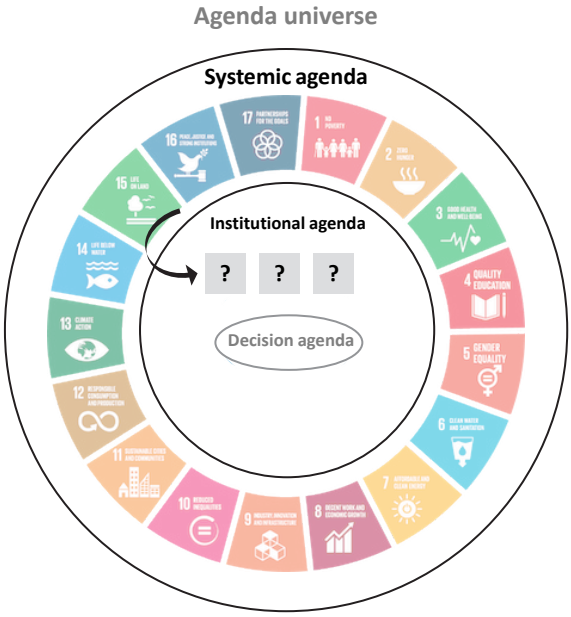


Figure 8.1. SDGs as systemic agenda influencing institutional agendas
Figure adapted from Birkland (2007).

in other countries, such as Colombia, Ecuador and Uruguay, the SDGs have been incorporated into national development agendas (Sanfeliú et al., 2020); and in Poland, the SDGs have been included in the national plan for 'responsible development' and national indicators have been aligned to the global goals (Raszkowski & Bartniczak, 2019). However, there is only limited research on how the SDGs shape global political agendas. This chapter is designed to contribute to this important question, with a focus on the possible influence of the SDGs on the negotiations of the Kunming-Montreal global biodiversity framework. While some observers view the SDGs as broadly relevant for this framework (Bieberstein et al., 2019; Moranta et al., 2022), the concrete steering effects of the goals on the framework, and on global biodiversity governance more broadly, have not yet been systematically assessed. We thus seek here to answer the following research question: Did the SDGs feature in negotiations and debates around the Kunming-Montreal global biodiversity framework and if so, how did the global goals steer the content and core structures of this new framework? Our research thus offers novel insights into the role of the SDGs in shaping the global biodiversity framework, but also, more generally, into the potential of the SDGs to influence any future issue-specific global agenda.

The rest of this chapter is structured as follows. Section 8.2 describes our research design and methods. Given the lack of empirical knowledge in this research area, we take a

general inductive approach, allowing findings to emerge from the data (Thomas, 2006). Section 8.3 discusses the results of our empirical work and embeds them in broader literature. We conclude with section 8.4, which also offers implications for global biodiversity governance and for global governance through goals.

8.2. Research design and methods

Our research builds on a systematic and extensive discourse analysis, a form of qualitative content analysis (see also sections 3.3.5, 4.2.1. and 4.3). Discourse analysis is the most appropriate method for our question for mainly three reasons: First, pathways of influence from systemic to institutional agendas are likely to occur through political discourses among the actors involved in formulating the agenda (Birkland, 2007). Second, discursive change has been the most observed influence of the SDGs (F. Biermann, Hickmann, Sénit, et al., 2022), so if there is any influence of the SDGs on the post-2020 framework, we expect to see this especially in the related discourses. Third, since the global biodiversity framework was adopted recently, in December 2022, any study of deeper institutional effects on 'decision agendas' would be premature.

We define a discourse here as ideas, concepts and categories that give rise to a shared meaning of a phenomenon (Adger et al. 2001: 683) (Hajer and Versteeg 2005: 175) Discourse can be inferred by analyzing language-in-use (Hajer & Versteeg, 2005; Wetherell et al., 2001). Our assumption is thus that language is not neutral and that the use of language can steer political processes (Boréus & Bergström, 2017; Dryzek, 2005; I. Fairclough & Fairclough, 2013). In other words, by understanding how the SDGs may, or may not, have influenced discourses on the global biodiversity framework, we may gain important new insights also on the future content and even likely implementation of this framework.

Our discourse analysis uses two sources of written language to investigate the discourse, drawing from two discursive spheres, the 'public-authoritative' sphere and the 'open-public' sphere.

8.2.1. Public-authoritative sphere

The public-authoritative sphere we define as a formal or controlled sphere of discourse. This is the sphere of the Open-ended Working Group that drafts the framework and of the conference of the parties to the CBD, both of which are dominated by state actors. While non-state participants may offer their input, these opportunities are limited as they require resources and some formal organization. It is this public-authoritative sphere where actors from states, intergovernmental organizations and a few represen-

tatives of institutionalized civil society negotiated the global biodiversity framework. Individuals have few options to join, and the inclusivity and participatory nature of processes at the CBD have been criticized (Parks, 2017).

For the study of the discourses in the public-authoritative sphere, we draw on a systematic analysis of the official documents from the negotiations of the global biodiversity framework, which was also referred to as "post-2020 framework" during its development. We analyzed documents from the 15th meeting of the conference of the parties to the CBD, part 1, in October 2021, as well as reports from the three sessions of the Open-ended Working Group (OWG) and regional and thematic consultations leading up to this 15th conference of the parties, part 1. All documents were downloaded from the website of the CBD secretariat and inductively coded to define categories and codes to infer discourses (Boréus & Bergström, 2017; Chandra, 2019; Thomas, 2006). We identified all references to the 2030 Agenda or SDGs in the documents and coded their contextual use. Codes include for instance 'general reference to SDGs,' 'mention of SDG indicator,' or 'mention of SDG political salience.' After a first coding, we created more succinct categories by combining codes, focusing on observations about the conceptual framework. Finally, we counted the frequency of each discourse category to see how strong the categories were vis-à-vis one another. In total, we analyzed 25 lengthy negotiation documents. An overview of analyzed documents is included in the supporting material, table S8.1. In-text references are denoted as "CBD Document [number]," with the number referring to the list in the supporting material table S8.1.

8.2.2. Open-public sphere

In addition to the public-authoritative sphere, we studied discourses in the open-public sphere, which we define as the informal discussions open to most individuals and organizations, with much fewer access restrictions. We add this sphere for two reasons. First, a combination of discourses from both spheres helps gain a broader picture of the discourse around the biodiversity framework; second, the accessibility of the open-public sphere allows for more and other actors to take part as compared to the public-authoritative discourse. The discourses of the groups for which participation in the public-authoritative sphere is limited, may thus be found more often or even only in the open-public sphere.

To study the open-public sphere we relied on data from Twitter. The short-messaging platform Twitter has become one of the most popular social media platforms globally. By 2021, over 200 million accounts were active on the platform daily (Twitter, 2021), including numerous heads of state, ministers, NGO leaders, and international organizations (BCW Global, 2020; Ecker-Ehrhardt, 2021). Twitter is an increasingly important and widely used place of international political discussion and diplomacy that allows partici-

pation of a broad group of individuals and organizations: anyone with internet access can create a Twitter account, share their views, and seek to influence others and the general discourse (Ecker-Ehrhardt, 2018a, 2021; Goritz et al., 2020; Kolleck et al., 2017). Since the conference of the parties in October 2021 was held online due to the Covid-19 pandemic, this makes it a particularly interesting case to study online communication. We thus assess Tweets related to biodiversity during this conference, where the draft framework was discussed.

We collected Tweets from 9 October until 17 October 2021, covering the first part of the 15th conference of the parties itself and 2 days before and after. Using Twitter's application programming interface, we collected all tweets that had specific keywords related to biodiversity and the conference of the parties, such as "COP15" and "Post2020". For a full list of keywords, see the supporting material, table S8.2. A total of 108,959 Tweets were collected from 54,036 unique accounts. For a schematic overview of the data collection and pre-processing, see figure 8.2.

Following a keywords-based approach (Baker & McEnery, 2015), tweets were filtered to select only those that also mention a keyword related to the SDGs, such as "SDG" or "2030 Agenda." For a full list of keywords, see the supporting material, table S8.3. The final set of 285 SDG-related Tweets we then inductively coded to assess how the SDGs feature in the discussions on the post-2020 biodiversity framework. In addition, we manually categorized the 200 unique accounts that created the SDG-related tweets into distinct actor groups, identifying inductively the following actor groups: International organizations, governmental actors, non-governmental organizations (NGOs), business and business networks, research and academic organizations, media, individual activists, and 'unknown'. The group of "individual activists" consists of individual accounts

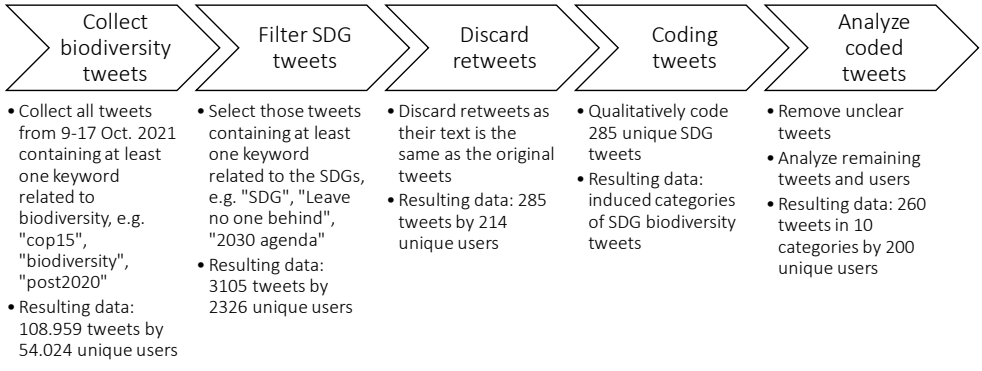


Figure 8.2. Collection and pre-processing of Twitter data
From left to right, the sequential steps in collecting, filtering, and analyzing tweets to assess the discourse around the SDGs and the new global biodiversity framework in the open-public sphere.

(people) who are active on Twitter in biodiversity activism. These can be people with many or few followers. Examples of active Twitter accounts include @ClimateBen, who presents themselves as a "Literature Teacher providing information on the Extinction-Climate Catastrophe," with more than 110,000 followers, which is a very large account; but also @ABSiddiki, self-described as a "Coffee Lover, Architect + International Planner, Community Activist + Cyclist" with only 250 followers. As usual in Twitter analysis, we also found accounts where we could not verify their identity because no description, name or website was provided. These we categorized as 'unknown.'

8.3. Results

Based on this approach, we identified overall 13 discourse categories in the public-authoritative and open-public spheres. In the public-authoritative sphere, we found seven categories, see figure 8.3. Out of the 25 extensive documents that we analyzed from the OWG process and the 15th conference of the parties (part 1), 21 refer at least once to the SDGs. The number of these references, however, varies from 1 to 28 per

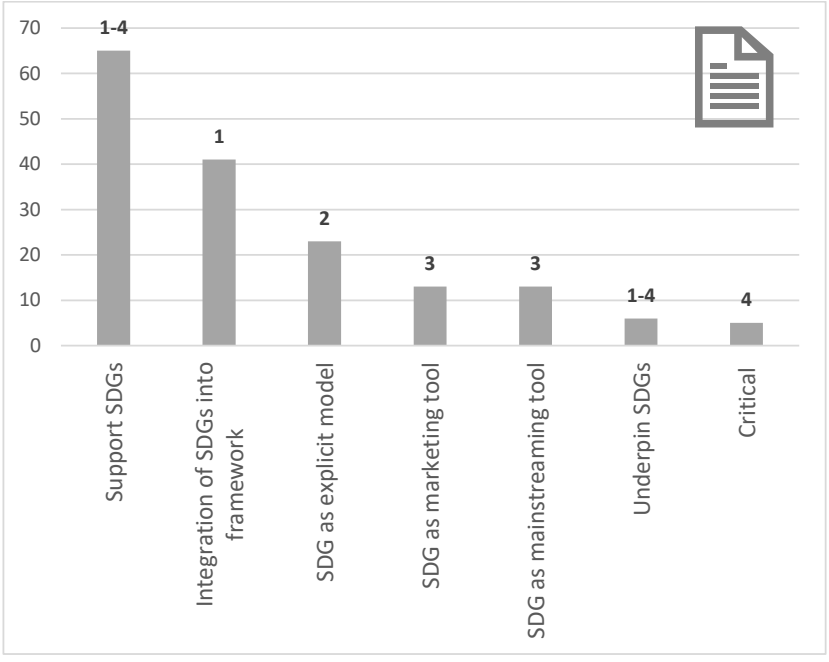


Figure 8.3. Discourse categories induced from public-authoritative discourse
Discourse induced from 25 documents from the CBD Open-ended Working Group process on forming the post-2020 biodiversity framework. The y-axis indicates the frequency of the category. The numbers at the top of the bar indicate which of the four identified functions the category is associated with.

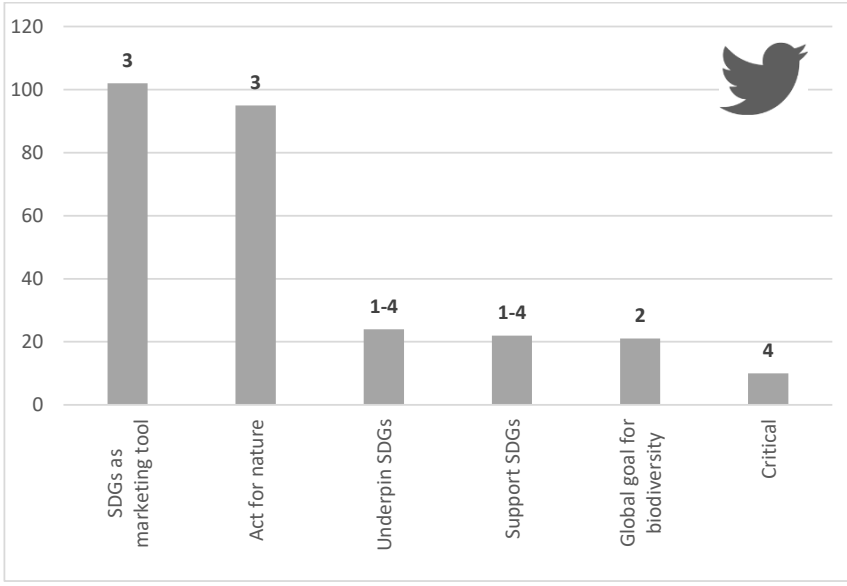


Figure 8.4. Discourse categories induced from open-public discourse
Discourse was induced from 260 tweets. The y-axis indicates the frequency of the category. As tweets can be in multiple categories, the sum of counts is higher than 260. The numbers at the top of the bars indicate which of the four identified functions the category is associated with.

document, with a total of 173 references across all documents. In the open-public sphere, that is, our Twitter analysis, we found six discourse categories, see figure 8.4. The two account types most present in the debate are non-governmental organizations (NGOs) and intergovernmental organizations, followed by business (networks) and individual activists, see table 8.1. The strong presence of intergovernmental organizations aligns with earlier research on the strong positions of these organizations on Twitter in international political debates (Goritz et al., 2020). Governmental accounts, however, are largely absent, with only few governmental actors tweeting about biodiversity by using the SDGs. When comparing the public-authoritative and open-public spheres, some actors – especially international organizations – are involved in both spheres by taking part in negotiations under the OWG and in debates on Twitter. Also, several business networks and NGOs that are active on Twitter have been present at meetings of the OWG.

While the public-authoritative and open-public spheres differ, notably in the strength of discourse categories, the categories that we identified also substantially overlap. We therefore combined these 13 discourse categories to describe only four core functions of the SDGs in the formation of a new global agenda for biodiversity. We now discuss

Table 8.1. Summary statistics of the tweets, divided per actor group

Twitter accounts and tweets	Accounts (%)	Tweets (%)
Total	200 (100.0%)	260 (100.0%)
		By actor group
Government	8 (4.0%)	9 (3.5%)
Intergovernmental organizations	44 (22.0%)	58 (22.3%)
NGOs	44 (22.0%)	59 (22.7%)
Media	14 (7.0%)	15 (5.8%)
Research	20 (10.0%)	22 (8.5%)
Business (networks)	37 (18.5%)	50 (19.2%)
Individual activists	28 (14.0%)	37 (14.2%)
Unknown	5 (2.5%)	10 (3.8%)

The "Accounts" column shows how many absolute and relative (%) of the 200 unique accounts in the dataset are in each actor group. The "Tweets" column shows many tweets, absolute and relative (%), were made by each actor group in the time observed. The "Tweets / account" column divides the Account column by the Tweet column to show the average tweets per account for each actor group.

these four functions of the SDGs in the formation of the global biodiversity framework one by one.

8.3.1. Agenda alignment to the SDGs

The first function that we identified is the alignment of global policy agendas. In both the public-authoritative and the open spheres, but especially in the public-authoritative sphere, many statements refer to how the global biodiversity framework should *support the SDGs*.

In the documents of the Open-ended Working Group, this discourse category is even the strongest of the seven categories that we identified, see figure 8.3. Of all references to the SDGs, 38% are in this category, and 20 of the 25 analyzed documents make such a supporting statement at least once. The documents describe that the global biodiversity framework should be "coherent," "synergistic," "aligned," "linked" or "integrated" with the SDGs, and that the framework should "contribute" to the achievement of the goals. A separate but a bit weaker category contains even statements that the global biodiversity framework *underpins the SDGs*, emphasizing that biodiversity protection is essential to achieve the SDGs. The statements in these categories are rather broad and do not specify how this support or underpinning should work concretely. Nevertheless, the frequent reference to support the SDGs shows a general sense of the importance of the SDGs in formulating the global biodiversity framework.

The alignment of the framework to the SDGs is further shown by the discourse category *'integration of SDGs into framework'* from the documents. This category refers to statements on the use of SDG targets or indicators in the post-2020 global biodiversity framework. 24% (41) of the SDG references in the documents are in this category. SDG targets and indicators are described in the context of using them by direct incorporation into the global biodiversity framework or by communicating a link between these SDG targets and targets in the biodiversity framework. Among others, it is suggested to incorporate indicators from SDG 5 (gender) and SDG 16 (peace) in the global biodiversity framework. The use of indicators for SDG 12 (consumption) is discussed as well. Notably, SDG targets and indicators under SDG 15 (land), where biodiversity is centrally embedded, are mentioned only twice. A possible explanation for this is that the targets under SDG 15 are described in the documents not as "SDG targets" but rather as "Aichi targets," which they in fact were before they have been incorporated into the SDGs in 2015. In addition, statements suggest harmonizing the reporting for the global biodiversity framework with reporting for the SDGs. For example, it is suggested to include the SDGs in National Biodiversity Strategies and Action Plans and to create similar reporting requirements.

In the open-public debate on Twitter, this discourse on the supporting function of the SDGs withing the global biodiversity framework is present as well, though much weaker. Here, we find 22 tweets (8.5%) stating how nature and the post-2020 framework can support the SDGs. But the core message is the same as in the public-authoritative sphere: biodiversity protection and the post-2020 framework *support* SDG achievement. In addition, we find another 24 tweets (9.2%) on how nature *underpins* the SDGs. Most of these tweets are by accounts of intergovernmental organizations, showing that especially these organizations intend to link biodiversity policies to the SDGs. This aligns with the strong discourse on supporting the SDGs through the post-2020 global biodiversity framework as found in the documents of the Open-ended Working Group. The intergovernmental organizations on Twitter that make these statements include the CBD Secretariat (@UNBiodiversity), the UN Environment Programme (@UNEP, @UNEPWCMC) and the UN Development Programme (@UNDP, @UNDPClimate). Some examples are as follows:

> *Without nature, there is no future. From the foods we eat and the air we breathe to the water we drink, it all comes from nature, which underpins the #SDGs. At #COP15, the world must commit to taking action #ForNature to protect the biodiversity we all depend on. --@UNDP*

> *Action #fornature and for the #globalgoals go hand-in-hand. From 11 to 15 October the first part of #cop15 brings governments together to demonstrate commitments*

to strengthening the sustainable use of biodiversity for meeting the needs of people.
--@UNBiodiversity

As for agenda alignment, we thus find evidence that the SDGs as a *systemic agenda* have influenced the discourse on the global biodiversity framework as an *institutional agenda* (Birkland, 2007). This is shown by discourses on how the framework should support the SDGs, and by incorporating SDG targets and indicators into the global biodiversity framework. It thus appears that the SDGs have some self-regulatory effects on international institutions, through the uptake of targets and indicators (Freistein, 2017; Fukuda-Parr, 2014), similarly as observed at the national level (Raszkowski & Bartniczak, 2019; Sachs et al., 2018; Sanfeliú et al., 2020).

This is especially the case for non-biodiversity SDGs – that is, SDG 5 (gender) and SDG 16 (peace), which would point towards the SDGs leading to an increased attention on a broader scope of connected issues (Finnemore & Jurkovich, 2020). However, this attention for non-biodiversity issues is not entirely new. Before the advent of the SDGs, there was already increasing attention for gender issues (SDG 5) and inclusive and participatory decision-making (SDG 16) at the CBD (Pickering et al., 2022). For example, the CBD already adopted a Gender Plan of Action to address issues of gender and biodiversity in 2008 (CBD, 2008; Jenkins, 2016). The use of SDG indicators is also not new for the CBD. Shortly after adoption of the SDGs, the indicators for the Aichi targets were updated to include 41 of the SDG indicators across ten SDGs (CBD, 2016).

Nevertheless, the focus on SDG indicators appears stronger, and the inclusion of SDG indicators is expected to increase. While the accompanying indicators for the Kunming-Montreal global biodiversity framework are still to be established (CBD, 2022), the latest proposed monitoring framework includes 53 SDG indicators across 13 SDGs (CBD, 2020b). In this proposed framework, SDG indicators for SDG 13 (climate), SDG 16 (peace) and SDG 17 (partnerships) are entirely new for the biodiversity agenda, and the number of indicators used from SDG 12 (consumption) and SDG 6 (water) will double as compared to the Aichi targets. While more research on other issue-specific global agendas would offer more insights, the inclusion of more SDG indicators in the global biodiversity framework shows that the SDGs as aspirational goals may indeed broaden institutional agendas (Finnemore & Jurkovich, 2020). The inclusion of more SDG indicators also points towards a shaping influence of the SDGs through the self-regulation effect (Freistein, 2017; Fukuda-Parr, 2014).

8.3.2. SDGs as governance model

The second function we found is that some actors advocate the SDGs as a *governance model* for the global biodiversity framework. For example, many discussions on the

global biodiversity framework have centered on creating a set of new goals with targets that are all interrelated, with 'cross-cutting themes' such as gender. This is very much influenced by the SDG approach. It was also suggested to include a goal on partnerships, for which SDG 17 (partnerships) has explicitly been mentioned as the example. Also, the need for indicators is emphasized throughout the documents on the global biodiversity framework, both with the suggestion to include some of the SDG indicators or to set up own biodiversity-related indicators. To select these indicators, some actors suggested to set up an expert group, and here again, the Inter-Agency Expert Group on indicators for the SDGs was mentioned as an explicit example to copy. There has also been suggestions to consider a review process that would be similar to that of the Voluntary National Reviews for the SDGs, and to set up a high-level political forum for biodiversity, which is inspired by the High-level Political Forum on Sustainable Development (HLPF) that reviews the SDGs.

In the open-public sphere, the influence of the SDGs as a governance model is also visible, even though differently. Here, tweets call for a *Global goal for biodiversity*, as a single apex goal or target for nature and biodiversity protection (see examples for such tweets below). An apex target has also been part of the discussions in the OWG process (CBD Documents 3, 5 and 6), though opinions differ on whether such a target is beneficial to biodiversity protection as it may lead to an insular focus. On Twitter, it is noticeable that none of the accounts of international organizations tweet about such a single global goal for biodiversity. Rather, the idea seems to be pushed by NGOs and businesses, including the World Wildlife Fund (@WWF_DG and @NatureDeal) and Capitals Coalition, a business network for changing capital investments (@CapsCoalition).

> *Halt destruction of nature or risk dead planet, leading businesses warn. CEOs urge world leaders to commit to a global goal for nature to redirect harmful subsidies and to embed the economic value of nature in decision-making --@CapsCoalition*

> *Honored to address @unbiodiversity #cop15. We know what we need to do for climate #netzero emissions by 2050. We need an equally clear and measurable global goal for nature #naturepositive by 2030 so that we end this decade with more nature than today not less. --@WWF_DG*

Though the preferred goals differ in the public-authoritative and open-public spheres, both suggest a much stronger *preference for goal setting* as a strategy in global biodiversity governance, which differs from an earlier emphasis on the legally binding convention and its protocols. The SDGs have then functioned, especially in the public-authoritative sphere, as a "best governance practice" to follow in terms of how the new global biodiversity framework can and should be formulated. The SDGs function

as a "blueprint" for the formation of global institutional agendas (Thérien & Pouliot, 2020), thereby strengthening goal setting as a main model of global governance (F. Biermann et al., 2017). While the CBD is a legally binding treaty, the increasing use of goals within such binding treaties may be indicative of a further shift from rules-based to goals-based governance (Kanie et al., 2019). While the use of goals itself is not entirely new to the CBD, with the 20 Aichi targets as most recent example, the CBD now seems to incorporate more and more elements from the SDGs than just goals. For example, while the Aichi targets had no sub-targets, no high-level political forum for biodiversity nor an established voluntary national review mechanism, such mechanisms are now discussed, as a direct influence by the parallel SDG experience.

As the overall process of formulating the SDGs was widely perceived as successful by the international community and the SDGs are broadly used at the international level (Chasek et al., 2016; see also chapter 6), it is not surprising that the SDGs are now used as a model for establishing new agendas in other areas, such as biodiversity protection. We thus find that the SDGs as a systemic agenda are not only influential in steering the content, but also shaping the very form of institutional agendas.

8.3.3. The SDGs as a relational tool

The third function we identified is the use of the SDGs as a relational tool to connect with others. Often, this is about seeking attention from other actors, especially in the open-public sphere, where Twitter naturally serves as an attention-seeking medium. However, also in the public-authoritative sphere, the SDGs are perceived as a tool to capture attention of and build connections with other actors.

On Twitter, *SDGs as marketing tool* was the most-identified category of tweets, with 102 (39%) tweets classified as such. Tweets in this category state how the activities, actions, or programs of the account holder contribute to nature and the SDGs, often including a hyperlink to reports or other information on the account holder's website. They are in essence self-promotional tweets. Three examples of such tweets are given below. Notably, all groups of account holders make these tweets, though business and government accounts do relatively more self-promotion, and media and individual activists less.

Our target at Metsä Fibre is to actively promote sustainable forest management and biodiversity we always regenerate forests after felling #metsäfibre #sustainabledevelopmentgoals #sdgs #sdg15 #sustainableeveryday --@MetsaFibre

Today is world migratory bird day. Ichikai in Tochigi provides migratory birds with nesting and hunting sites since 2014. Groups in the area have been creating

biodiversity-rich habitats and green tourism plans for future generations #global-goals --@JapanGov

Our #UNBiodiversityLab supports nations to monitor nature in new ways. Learn how @UNDP & @NASA work w/ leaders in Colombia, Ecuador & Peru to calculate & validate indicators for SDG15 reporting via UNBL. Story map here > #NatureforLife --@UNDPClimate

Almost equally often we find that the SDGs are used on Twitter as a call to *act for nature* (95 tweets, 37%). Here we find tweets that call to protect nature or biodiversity and for achieving the SDGs more broadly. Similar to above, the SDGs are used as an attention-seeking tool, yet this time for the protection of nature. Tweets in this category are mostly created by NGOs and individual activists, for example tweets from Bird Life (@BirdLife_Policy) and a small French NGO Beemouv (@beemouv) and its founder (@ MarineGOfficial).

Also in the public-authoritative discourse, the use of the SDGs as a marketing tool is recognized. In several documents, the SDGs are discussed under the header of 'communication,' where it is noted that the SDGs are highly visible. The coupling of the global biodiversity framework to the SDGs is then seen as a way to increase the political attention for biodiversity, and perhaps increase funding for biodiversity. *"It was observed by some that the Sustainable Development Goals have a higher political profile than current biodiversity targets. Therefore, linking the implementation of the post-2020 global biodiversity framework to the fulfilment of the 2030 Agenda for Sustainable Development was noted as important."* (CBD Document 8).

In addition, the SDGs are seen in the public-authoritative sphere as a *mainstreaming tool* to incorporate biodiversity concerns into other sectors. This tool is also about increasing the attention for biodiversity, but in sectors not traditionally linked to biodiversity. The SDGs are seen here also as a way to connect to other actors that are not as involved in biodiversity conservation, so as way to build relations. *"Participants noted the need to continue engaging and using relevant multilateral environmental agreements, processes and agendas, such as the Sustainable Development Goals and the Paris Agreement, to point policymakers to areas where they can take action to mainstream biodiversity"* (CBD Document 9) and *"the implementation of the Sustainable Development Goals provided an opportunity, but also a challenge, to engage with other ministries which traditionally are not closely linked to biodiversity."* (CBD Document 8).

We thus observe that the SDGs serve as a tool to attract the attention of and to connect to other actors. We find this effect across the different actor groups that we studied,

including governments, international organizations, NGOs, businesses and individuals. These results are in line with earlier studies that suggested that the widespread use of the SDGs enables them to serve as a 'shared language' and possibly to strengthen collaboration (Florini & Pauli, 2018; Ordóñez-Llanos et al., 2022; Sturman et al., 2020; see also chapter 6). While all actor groups use the SDGs as a relational tool, they appear to do so for different reasons. Businesses focus on self-promotion. While some businesses are legitimately interested in providing public value, most business engagement with the SDGs has been criticized as symbolic or more critically as 'greenwashing' (Waal & Thijssens, 2020). Their intent may thus stand in opposition to that of NGOs and individual activists, who use the SDGs primarily for advocacy (Hege & Demailly, 2018), in this case to increase attention for biodiversity protection. Finally, intergovernmental organizations and governmental actors see opportunities in using the SDGs to increase attention for biodiversity in non-biodiversity sectors. As a systemic agenda, the SDGs thus also function as a way for different actors to connect. While this does not directly relate to institutional agenda building, it indirectly is a way for actors to expand their issue areas through cooperation and attention-seeking behavior. This possibility appears an incentive to include the SDGs in an institutional agenda.

8.3.4. Framing alternative perspectives on biodiversity in the SDGs

Fourth, we find that the SDGs function to frame alternative perspectives on how biodiversity fits into the SDGs.

As described in section 8.3.1., both in the public-authoritative and open-public spheres, we find data on how biodiversity and the post-2020 framework *support* or *underpin* the SDGs. While both connect biodiversity and the SDGs, their interpretation is slightly different. *Support* puts biodiversity on equal footing with all other SDG targets. In these statements, biodiversity protection is said to go "hand-in-hand" with economic and societal development. Contrary, *underpin* implies the prioritization of biodiversity and nature more broadly as the basis of achieving all other SDGs. These two different interpretations are reflective of two distinct models of sustainable development. *Support* and *underpin* reflect, respectively, a 'balanced' model where economic, social, and environmental concerns take equal priority, and a 'nested' model where the environment forms the basis of economic and societal development (Giddings et al., 2002). The SDGs themselves emphasize the interconnectedness of social, economic, and environmental concerns, where none should be prioritized over the other, thus propagating the balanced model of sustainable development (F. Biermann et al., 2017; UN, 2015).

Within the public-authoritative sphere, the *support* discourse is much stronger than the *underpin* discourse, with the former being mentioned six times as often as the latter. Here we thus see the SDGs' overarching principle of balanced development reflected in

the negotiations of the global biodiversity framework. The principles embedded in the SDGs as a systemic agenda are thus also reflected in the institutional agenda of the CBD.

In the open-public discourse, the discourses are more equal in strength, with *underpin* being slightly stronger. The results thus point towards a difference between the open-public and public-authoritative spheres regarding the position of biodiversity in the SDGs. The public-authoritative sphere is dominated by the government parties to the CBD, which may favor the *support* position of biodiversity in the SDGs. In the open-public discourse, it is mainly accounts of international organizations that convey the *underpin* message, although slightly less frequent than they convey the *support* message. Also, NGOs convey both discourses, but more frequently the *underpin* message. Thus, intergovernmental organizations and NGOs seem to favor the *underpin* position, that is, that biodiversity is fundamentally needed to achieve the SDGs, including the more economically or socially oriented SDGs. One might be surprised that the SDGs are referred to in this way, as this implicit hierarchization, with a central role for biodiversity, contradicts the very principle of non-prioritization that underlies the SDGs. Actors might seek here to increase attention for biodiversity by underlining its importance (Erdelen, 2020; Pickering et al., 2022), but could also raise an implicit criticism of the SDGs and their "balanced" approach towards sustainability.

The differences between *underpin* and *support* become clearer in some of the more *critical* statements on the SDGs. Critical statements are more frequent in the open-public than in the public-authoritative discourse. While there are not enough criticisms to draw broad conclusions, they still offer some interesting insights on the tension between SDGs and biodiversity. For example: *"The achievement of the Sustainable Development Goals [is] not enough for a sustainable world, as the problems [have] moved from environmental to developmental to existential."* (CBD Document 12) and *"CBD in not the only driver for ecosystem restoration. UNFCCC and SDG drive [it] in different direction."* (CBD Document 15) Similarly we find tweets that criticize the SDGs and their ability to protect biodiversity, as we show in the three examples below. These tweets are mostly by individual activists who criticize in essence the design of the goals, including the principle of balanced sustainable development.

> *Some range shifts create feedbacks, altering the pace of climate change. "Consideration of these effects of biodiversity redistribution is critical yet lacking in most mitigation and adaptation strategies, including the UN's Sustainable Development Goals."--@ClimateBen*

> *The @UN @UNEP @UNFCCC @UNBiodiversity exists in an alternate universe, a universe where economic growth & globalism is apparently good for both the*

climate & biodiversity. That's the foundation of their "Sustainable Development Goals". It's not the same as this universe. --@Karmageddon67

@philomathyjen @CapsCoalition @BfNCoalition @IPBES @UNBiodiversity @SDG2030 @TonyJuniper @wbcsd @WMBtweets @SonyKapoor @planamikebarry @PaulPolman @EU_ENV The same groups who've destroyed nature now want to save it? Hardly anyone is buying this narrative, thankfully! 😊 --@nodealfornature

The strength of the *support* discourse indicates that the institutional agenda is also influenced by the overarching principle of balanced sustainable development as embedded in the SDGs. Balanced sustainable development is not entirely new to the CBD, as previous agendas have also recognized the importance of biodiversity to support human needs, both economic and social (Moranta et al., 2022). Yet the SDGs are used to re-emphasize that message, mainly in the public-authoritative discourse. As a systemic agenda, the SDGs thus propagate a specific vision on what sustainable development means, and this permeates into the institutional agenda. This fits with earlier findings that global goals shape how sustainable development or progress is defined, and that these definitions permeate, at least to some extent, international institutions (Finnemore & Jurkovich, 2020; Fukuda-Parr, 2014).

8.4. Discussion and conclusion

This study investigated the role of the SDGs in the formation of the Kunming-Montreal global biodiversity framework. We found that the SDGs have had some steering effects in the formation of the new institutional agenda and we identified four main functions of the SDGs.

First, the discourse shows the political intent of actors to align the global biodiversity framework to the SDGs, including by incorporating SDG targets and indicators into the framework. Second, we found that the SDGs serve as a dominant governance model for future global agendas also in global biodiversity protection. Third, we found that the SDGs serve as a relational tool, to attract the attention of and to connect to other actors, also with the intention of expanding issue areas. Fourth, we found that actors use the SDGs to frame their preferred model of sustainable development. Altogether, our results indicate that the SDGs, as a global systemic agenda, shape a newly created institutional agenda in its content and form.

While we are confident that our study offers important novel insights about the effects of governance through global goals and the shaping of biodiversity governance, there

are several limitations to this study, and several areas where more research is needed. First, the study focused on discourse and not on implemented policies or results. In the future, the influence of the SDGs on the actual policies and activities flowing from the Kunming-Montreal global biodiversity framework must be investigated closely. Second, since the CBD documents do not explicitly mention who said what, it was not possible to obtain individual actor positions based on these documents. Yet from the Twitter data we saw that different user groups use the SDGs in different ways. Future research should study such shared or different interpretations of the SDGs, to elucidate their role in communication and relation building further. Third, the use of Twitter data in global governance research is still relatively new, and the interpretation of its results must be seen with caution.

With a view to broader political considerations, we conclude that the alignment of the CBD agenda to the SDGs can be considered a sign of success of the approach of governing through global goals. The vision underlying the SDGs is that their goals, targets, and indicators are taken up by other governance actors, and in the Kunming-Montreal global biodiversity framework, that seems indeed to be the case to some extent. For biodiversity protection, however, the alignment of the framework to the SDGs may have mixed effects. Connecting biodiversity to the SDGs could lead to increased attention for protecting it, including from actor groups that are not traditionally involved. This is also the intention of those who propose connecting biodiversity protection to human well-being and livelihoods (Bhola et al., 2021; Pickering et al., 2022). Having clearly communicable targets in the global biodiversity framework, including targets from the SDGs, may indeed convey a strong ambition leading to increased attention (Bhola et al., 2021; Carroll & Noss, 2022).

Yet the steering effects of the SDGs on the global biodiversity framework may also affect biodiversity protection negatively. While transformative change is urgently needed to combat biodiversity loss (Bhola et al., 2021; Visseren-Hamakers & Kok, 2022), the SDGs have so far not led to transformative change (F. Biermann, Hickmann, Sénit, et al., 2022; Weiland et al., 2021). Some observers have even argued that progress on the environmental targets and indicators in the SDGs could worsen outcomes for biodiversity (Barnes et al., 2018; Clémençon, 2021; Dudley et al., 2018; Zeng et al., 2020). While the 2030 Agenda claims to seek balance between economic, environmental, and social needs, the SDGs have been criticized for not truly integrating the three dimensions of development, and for prioritizing economic growth over environmental integrity, with nature being instrumentalized to fulfil human needs (Bhola et al., 2021; Lyytimäki et al., 2022; Moranta et al., 2022; Otero et al., 2020; Vasseur et al., 2017). While other views exist on the intrinsic and cultural value of biodiversity and what is needed to protect it,

discussions on alternative views are obscured by the use of simplified targets (Bhola et al., 2021; Carroll & Noss, 2022; Sayer et al., 2021).

A stronger alignment of the Kunming-Montreal global biodiversity framework with the SDGs is thus unlikely to create space for discussions on alternative views or the prioritization of nature. It is thus well possible that this alignment with the SDGs could damage biodiversity protection in the long run.

Part IV

Conclusion

The impact of the SDGs on international organizations

Parts of this chapter are based on:

Bogers, M., Biermann, F., Kalfagianni, A., & Kim, R.E. (2023). The SDGs as integrating force in global governance? Challenges and opportunities. *International Environmental Aagreements: Politics Law and Economics,* 23, 157-164.
https://doi.org/10.1007/s10784-023-09607-9

9.1. Introduction

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) are the broadest and most ambitious agenda ever adopted at the global level. With the intent to "transform our world" the 2030 Agenda calls upon all actors to act "in collaborative partnership" to achieve the "integrated and indivisible" goals (UN, 2015). By recognizing the need for extensive collaboration, and the need to address the interconnectedness between the economic, social, and environmental dimensions of sustainable development, the 2030 Agenda and its SDGs call implicitly for increasing institutional and policy integration at all levels of governance. While this call is not new, policymakers have given it a renewed impetus with the adoption of the SDGs in 2015. Yet, from the outset, little empirical evidence was available on whether non-legally binding global goals could actually facilitate the increase of institutional and policy integration. This thesis set out to contribute to this research area, focusing on international organizations as key actors in global governance. Specifically, this thesis set out to answer the following research question, as posed in section 1.5:

To what extent, and how, are the SDGs affecting institutional and policy integration at the international level?

I investigated this question specifically for institutional and policy integration across the 17 SDG issue areas and between the economic, social, and environmental dimension of sustainable development, among and within international organizations. I posed the following sub questions to support answering the main research question:

1. Are international organizations adopting the SDGs as a framework?
2. Which of the 17 SDG policy domains are most and least integrated by international organizations?
3. How do the SDGs affect institutional integration among international organizations?
4. How do the SDGs affect policy integration within international organizations?

As described in section 1.5, an additional goal of this thesis was to reflect on the usability, advantages, and disadvantages of different quantitative, novel methods in global sustainability governance research.

To recall, I define institutional integration as a characteristic of governance system that is about interactions between international organizations (see section 1.2.1). I consider two distinct forms of institutional integration: structural and functional. Structural integration says something about the overall structure of the system of governance actors based on their interactions, that is whether the system is well-connected or not, clus-

tered or disperse, or whether it has one central actor or multiple local hubs. Functional integration says something about how well-connected governance actors are that work on different policy domains. The concept of institutional integration, both structural and functional, is also commonly referred to in literature by its opposite term: institutional fragmentation. Lastly, functional integration is closely related to the concept of 'siloes.' Siloes commonly refers to governance actors working in policy-domain based siloes, with less interactions occurring between actors working on different policy domains. In other words, siloes are indicative of high functional fragmentation.

While institutional integration says something about interactions *between* international organizations at the level of governance systems, I conceptualize policy integration as a process taking place *within* individual international organizations, at the level of policies. I define policy integration as integrating aims or concerns from one policy domain into another within one organization (see section 1.2.2).

In this chapter, I reflect on the answers to the research questions and on the research aims, combining the insights from all chapters in this book. First, I reflect on the role of the SDGs in institutional and policy integration in international organizations. I first answer each of the sub questions, and then reflect on the main research question. Second, I discuss the theoretical implications, reflecting on what my findings mean for governing through goals more broadly. Third, I discuss methodological implications, by reflecting on the different research methods used in this thesis and how they may be further used in global governance research. Then, I propose avenues for future research. Last, I discuss policy implications, reflecting both on what can be done to accelerate action for the SDGs until and what a post-2030 global agenda could look like.

Based on the empirical insights gathered, I will now answer the four sub questions one by one and then reflect on the main research question.

9.1.1. Are international organizations adopting the SDGs as a framework?

The short answer is yes. Out of all international organizations examined in this thesis, 72.3% was using the SDGs on their websites in 2019, and the SDGs are more and more frequently mentioned over time (see chapter 6). Thus, a large majority of the international organizations seems to adopt the SDGs as a framework. The wide-spread and increasing use of the SDGs could be mere window-dressing. Given that there are no strong compliance mechanisms for the SDGs in place (F. Biermann et al., 2017), an international organization can mention the SDGs frequently on their website without committing to any real change towards implementing the goals. However, the case study on the Convention on Biological Diversity (CBD) shows that the SDGs are quite

extensively referred to in the process of formulating a novel global agenda and have at least some effects in terms of aligning a new global agenda to the goals (see chapter 8). This supports the idea that the overall increasing use of the SDGs is not mere window-dressing. Rather, it seems reflective of international organizations – at least to some extent – aligning their policies and programs towards the goals (Fukuda-Parr & McNeill, 2019; P. M. Haas & Stevens, 2017; Young, 2017).

However, the use of SDGs is not spread equally throughout the population of international organizations. International organizations that are larger in size, that work on many different issue areas, and that are part of the United Nations (UN) system, mention the SDGs more frequently in their website communication. The extensive use of the SDGs throughout the UN system seems to reflect efforts within the UN to establish the SDGs as main objective for all UN entities (Beisheim et al., 2022; UN Sustainable Development Group, 2019). Also, many international organizations, especially the larger ones, have been extensively involved in the formulation of the SDGs (Kamau et al., 2018). It is thus not entirely surprising that the use of the SDGs is common in this group. On the other hand, the remaining 27.7% of international organizations examined does not mention the SDGs at all on their websites (see chapter 6). While it could be that more time is needed before the SDGs diffuse to more international organizations, the proportion of organizations using the SDGs did not increase from 2017 to 2019 (see chapter 6). It thus seems that there is a group that uses the SDGs and uses them increasingly over time, and another group where the SDGs are not gaining any traction. Possibly, those involved in the formulation of the goals are now also more interested in using the SDGs, resulting in the SDGs remaining mainly a language of the larger, UN system of international organizations. The SDGs then reflect earlier commitments and consensus among a specific group of actors, which are unsurprisingly subsequently also committed to working on the SDGs (Kotzé et al., 2022). This would mean that the SDGs are not a truly global agenda, but rather an agenda of the larger, UN system of international organizations.

Another noticeable finding is that international organizations working mainly on environmental issues use the SDGs less than international organizations working mainly on economic or social issues (see chapter 6). There could be several reasons. For example, international organizations working mainly on the environment may not view the SDGs as a relevant agenda for their work. Several scholars have criticized the lack of a mention of "planetary boundaries" or "planetary integrity" in the SDGs (Brandi, 2015; Craig & Ruhl, 2019), and others have raised concerns that the environmental indicators in the SDGs are not adequate to ensure environmental sustainability (Elder & Olsen, 2019; Zeng et al., 2020). As a result, it could be that international organizations working mainly on environmental issues do not see the need to align their activities with the SDGs. At one

of the main international bodies governing biodiversity, the CBD, the SDGs are mentioned quite extensively in the formulation of a new agenda (see chapter 8). Yet the CBD secretariat also played a role in the formulation of the SDGs (Convention on Biological Diversity, 2015; Kamau et al., 2018) and the SDG indicators for biodiversity, mainly under SDG 14 (oceans) and SDG 15 (land), lean heavily on previous targets set at the CBD (Krauss, 2022). In addition, in the formulation of the new biodiversity agenda the SDGs are mostly referred to regarding topics that were also part of previous agendas and programs of the CBD (see chapter 8). This points again to a strong path-dependency in the use of the SDGs by international organizations.

9.1.2. Which of the 17 SDG policy domains are most and least integrated by international organizations?

Results from chapter 7 show that all combinations of SDG issue areas are mentioned together at least sometimes on the websites of international organizations, indicating that policy integration is taking place between all 17 policy domains that the SDGs cover. However, especially the goals for economic issue areas – decent work and economic growth; industry, innovation, and infrastructure; responsible consumption and production – and the goal on partnerships are frequently discussed together. Over time, I observe an increase in policy integration, especially so for SDG 13 (climate), SDG 5 (gender) and SDG 12 (consumption), with other policy domains (see chapter 7). International organizations also increasingly discuss the concept of policy integration (see chapter 6). Together, the empirical findings from chapters 6 and 7 thus point towards an overall increase in attention for policy integration as a concept and towards an increase of policies for the 17 SDG issue areas, at least as conveyed on international organizations' websites.

Yet, policy integration is not equal for all international organizations. For international organizations working mainly on economic and social issues, the environmental SDG issue areas are much less frequently discussed with any of the other SDG issue areas. Despite an increase in policy integration of SDG 13 (climate) with other issue areas, this remains the case in the last year assessed. For international organizations working mainly on environmental issues, their policies for the environmental SDGs are much more strongly integrated, especially with one another and – to a lesser extent – with policies for the other, non-environmental SDGs. Results from chapter 8 also indicate that the SDGs are seen by policymakers as a way to connect environmental issues to one another and to some socio-economic goals. However, over time, I mainly observe an increase in policy integration among the environmental SDGs, so among SDG 6 (water), SDG 13 (climate), SDG 14 (oceans) and SDG 15 (land). This signifies a strong policy integration *within* the environmental dimension of sustainability among environmental

international organizations. Thus, overall, a strong 'integration gap' remains between the environmental issues and socio-economic issues.

9.1.3. How do the SDGs affect institutional integration among international organizations?

As chapter 6 demonstrates, overall structural integration has varied slightly in the period studied, first increasing (decreasing fragmentation) from 2012 until the SDGs were adopted in 2015 and then slightly decreasing (increasing fragmentation) again. This points towards the overall system of international organizations becoming more cohesive until 2015, but thereafter losing some of that increased cohesiveness again. These are, however, relatively small changes, and the different network measures used to operationalize structural integration sometimes point in different directions. It is therefore difficult to infer a clear direction of structural integration in the period studied. Functional integration, however, shows a clearer direction: functional integration is decreasing. International organizations connect relatively more and more to other international organizations that work in the same SDG issue area and/or on the same dimension of sustainable development – that is, economic, social, or environmental – as themselves. The result at the network level is a strengthening of domain-based, or functional, siloes around the 17 goals and around the three dimensions of sustainable development.

Thus, while not in the direction of 'breaking down siloes' that was called for by the UN, the SDGs do appear to have an effect on inter-organizational relations. More specifically, the SDGs seem to be a relational tool for actors to align their activities, sometimes even across issue areas, but due to the broadness of each goal, this could still lead to stronger siloes around each SDG. This becomes apparent from chapter 8, where the SDGs are considered a tool to connect to others, and from chapter 7, where the partnerships goal is considered highly important by many international organizations. The SDGs thus do facilitate connections, though mainly *within* the own SDG working area of international organizations. This contradicts the results in chapter 8, where the SDGs are also explicitly referred to as a relational tool to increase the awareness of biodiversity issues in non-biodiversity sectors. There are, however, two ways to explain this apparent contradiction. First, in chapter 8 I studied the development of an agenda and not its actual implementation. In other words, actors may *intend* to use the SDGs to connect to actors working in other issue areas, but this does not reflect on whether they end up doing so, or whether they do so more than connecting to actors *within* their own issue area. Second, actors in non-biodiversity sectors may very well include actors in desertification, forestry, or poaching. Yet all these issues are covered under SDG 15 (land). An increase in connections *between* these specific issue areas would thus mean a stronger connection *within* SDG 15 (land). A similar reasoning can be made for the strengthening of

siloes around the three dimensions of sustainable development, economic, social, and environmental. Over time, international organizations integrate environmental issues more with one another, but to a lesser extent with socio-economic issues, as observed in chapter 7. This process is also reflected in an increasing functional silo around the environmental dimension as observed in chapter 5.

9.1.4. How do the SDGs affect policy integration within international organizations?

While evidence points towards an overall increase in policy integration in the period investigated, this does not appear to be an effect of the SDGs, as the SDGs only appear to play a role in advancing policy integration for those international organizations already pursuing further integration.

In chapter 6, I find that policy integration is increasing from 2013-2019, at least within the international organizations included in this analysis. Policy integration is highest in international organizations with more member states, that are part of the UN system and that work on multiple issue areas. This is also the group where the SDG use is highest. In chapter 7, I also find that the policy domains as embedded in the SDGs are more frequently linked, indicating more policy integration. There is especially an increase from 2015 onwards, which would suggest some effect of the SDGs. However, the time-lagged variable analysis in chapter 6 demonstrates that rather than the SDGs triggering an increase in policy integration, it is the other way around. The SDGs are mostly used by those international organizations who were already working on policy integration more, suggesting that the SDGs provide a useful framework for those organizations working on multiple issue areas and integrating those. Similarly, in chapter 8, in the formation of the Kunming-Montreal biodiversity framework, the SDGs are explicitly referred to as a tool to further advance the integration of biodiversity issues into non-biodiversity domains and vice-versa. However, the idea of integrating biodiversity into non-biodiversity domains is not new to the CBD or biodiversity agenda. Biodiversity "mainstreaming," as it is commonly referred to, was already part of the Aichi targets and on the agenda of the CBD before the advent of the SDGs. Thus, it appears the SDGs are used as a tool to frame and legitimize previous efforts towards policy integration, yet only for those issue areas that were already on the agenda.

9.1.5. Answering the main research question

Now I turn my attention to the main research question: *To what extent, and how, are the SDGs affecting institutional and policy integration at the international level?*

As described in chapter 1 and visualized in figure 1.1, this thesis set out to identify several possible relations between the SDGs, the use of the SDGs by international or-

ganizations, and institutional and policy integration in international organizations. I specifically focused on how institutional and policy integration across the 17 SDGs and across the economic, social, and environmental dimension of sustainable development was affected by the SDGs.

The SDGs appear to have some effect on institutional integration, yet mainly within rather than across the 17 SDG issue areas and the economic, social, and environmental dimension of sustainable development. In the run-up to the adoption of the SDGs, structural integration was slightly increasing, indicative of overall more cooperation and a more cohesive system of international organizations. Such cooperation was already taking place increasingly within the 17 SDG issue areas, leading to a decrease in functional integration in the network. After the adoption of the SDG in 2015, functional integration showed a further and stronger decrease, and structural integration also decreased slightly. Functional integration was thus already decreasing slightly before the adoption of the goals, yet there was an acceleration of this decrease after 2015. While causality is difficult to establish in this research, (see section 4.6), the acceleration indicates a likely effect of the SDGs on functional integration. The SDGs thus are a relational tool, yet the sectoral nature of the SDGs strengthens mostly sectoral cooperation among international organizations. This is both the case for SDG issue areas and for the three dimensions of sustainable development, economic, social, and environmental. While social and economic international organizations cooperate relatively more within their sustainability dimension than environmental organizations do, all three show an increasing trend. The exception here are UN system international organizations, where sectoral cooperation appears to have slightly decreased after 2015, indicative of more functional integration within the UN. I give a schematic visualization of these empirically identified trends in institutional integration over the period studied (2012-2019) in figure 9.1.

On policy integration, the SDGs appear to have very little or possibly even no effect. While the SDGs are considered a tool for policy integration, this is mainly the case for those international organizations that are already working on policy integration, and mainly for those issue areas that were already of interest. Overall, policy integration is increasing, especially for SDG 5 (gender), SDG 12 (consumption), and SDG 13 (climate), and among the environmental SDGs. This increase is especially sharp after 2015, as observed in chapter 7, which would point towards an effect of the SDGs. However, the time-lag analysis in chapter 6 shows no significant effect of SDG use on policy integration. Here, it could be that the SDGs still have an overarching effect of raising the salience of the need for policy integration, while the SDGs themselves are not explicitly mentioned (more) by international organizations. Alternatively, and perhaps more likely, is that the overall trend of increasing attention for policy integration over the last decades has continued

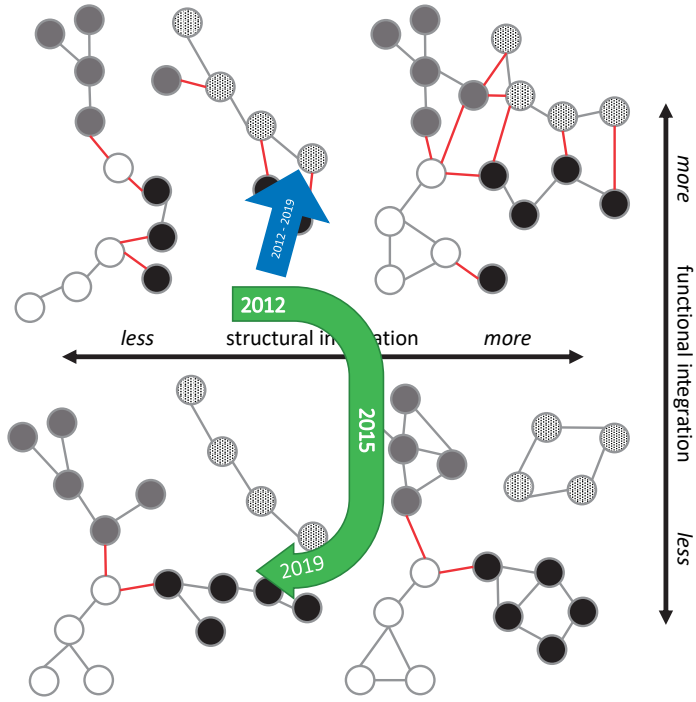


Figure 9.1. Structural and functional fragmentation before and after adoption of the SDGs
Schematic representation of general trend of change from 2012 to 2019 in institutional integration for the group consisting of UN system international organizations (blue) vs. the group consisting mainly of regional, non-UN system international organizations (green). The starting point for the arrows is artificial, as no set value of integration can be determined.

in the SDG era. While the SDGs may offer a useful framework, they did not spur policy integration.Overall, I find support for an impact of the SDGs on institutional integration, though not in the direction of breaking down the domain-specific siloes that the SDGs called for. Rather, I find that the SDGs have an impact on institutional integration in the direction of functional fragmentation. I find no support for an impact of the SDGs on policy integration. While I observe an uptake of the goals in many international organizations, this is not resulting in an increase in policy integration. Rather, I find that it is the other way around. International organizations who were already working more on policy integration are also more likely to use the SDGs. These relationships empirically identified in this thesis between the SDGs, the use of the SDGs, institutional integration and policy integration are schematically visualized in figure 9.2. The evidence found in this thesis thus supports earlier findings on the Millennium Development Goals (MDGs), that showed that domain-specific policy goals likely lead to a realignment of governance actors around those goals in a siloed manner (see section 1.4.2). The SDGs are more holistic set of goals as compared to the MDGs, with more cross-references

Figure 9.2. Relations identified between the SDGs and institutional and policy integration
The arrows indicate the direction of the relations identified between the SDGs and the concepts investigated in this thesis.

between goals and more explicit attention for their integrated nature. Yet this has not been enough to overcome institutional siloes in global governance.

9.2. Theoretical implications

Now I turn my attention to the theoretical implications of my findings for governing through goals more broadly at the international level.

The academic interest in the SDGs has quickly expanded over the past years, and there is now a significant and growing body of literature on global goals (see for example F. Biermann, Hickmann, & Sénit, 2022b; Finnemore & Jurkovich, 2020; Freistein et al., 2022). To recall, global goals are characterized by their non legally binding nature, weak accountability mechanisms, broad scope – both in terms of geography and policy domains and leaving leeway to interpretation (see chapter 2). These characteristics make global goals a unique global governance mechanism, and this mechanism is still far from understood. In an effort to build towards a theory of global goals, the rapidly expanding literature on global goals examines several key shared questions. I focus here on three of these questions. Firstly, whether global goals can galvanize action,

despite their non legally binding nature (Finnemore & Jurkovich, 2020; Freistein et al., 2022). Second, whether global goals can offer an overarching framework for governance actors to work towards in a cooperative manner (Beisheim et al., 2022; Nilsson et al., 2022). Third, whether global goals are taken up into the policies and programs of actors at multiple levels of governance (Croese et al., 2021; Ordóñez-Llanos et al., 2022). The accumulated insights from recent literature and this thesis offer theoretical implications for each of these questions. I thus offer three main implications for theory on global goals, and more specifically how governing through goals functions, at the international level. I argue in section 9.2.1. that while global goals may galvanize action, they do so only within the scope of individual goals. This would not be problematic if goal conflicts did not exist. Yet, they do, as I argue in 9.2.2., and goal-based governance makes it less likely for governance actors to address these goal conflicts. Finally, as I argue in 9.2.3., global goals are mostly used by those involved in setting the goals, and mostly reflect the interests and views of those setting the goals. In section 9.2.4. I bring the theoretical implications together with literature and empirical findings to give a provisional perspective on how global goals may affect global governance structures.

9.2.1. Global goals galvanize action within the scope of individual goals

Whether or not global goals can galvanize action has been a topic of debate in the academic literature. Some scholars have argued that the SDGs are unlikely to have any effect, as they reflect weak multilateralism and lack strong oversight for their implementation (Dimitrov, 2019; Espey et al., 2015; Vandemoortele, 2018; see also section 1.4). However, some scholars have been more optimistic, arguing that the SDGs can steer attention and mobilize governance actors to work towards the goals (Abbott & Bernstein, 2015; Beisheim & Fritzsche, 2022; Finnemore & Jurkovich, 2020; see also section 1.4).

I find that despite their non-legally binding nature, global goals do appear to galvanize action. Global goals can, at least to some extent, direct attention to the issues at hand (see chapters 6 and 7), facilitate collaborations (van Driel et al., 2022; Ningrum et al., 2023; see also chapter 5), and steer agendas (Valencia et al., 2019; chapter 8 of this thesis). Global goals also are adopted by a broad group of governance actors, including international organizations (see chapters 6 and 8), national governments (Allen et al., 2018; Lepenies et al., 2023; Okitasarai & Katramiz, 2022), municipalities (Annesi et al., 2021; Gustafsson & Ivner, 2018; Valencia et al., 2019), and businesses (Bose & Khan, 2022; Cordova & Celone, 2019; Kornieieva, 2020). Global goals thus seem effective in directing attention and energy from a range of governance actors, which can mobilize actors to work towards a global goal (Finnemore & Jurkovich, 2020; Freistein et al., 2022; Locke & Latham, 2002).

However, the action generated by global goals is mainly within the scope of each individual goal, rather than for a set of goals. For international organizations, this is evident from chapters 5 and 7 of this thesis, and work by other authors. For example, in global energy governance the advent of the SDGs has led to more coordination efforts *within* the scope of SDG 7 (Downie, 2020a); and the international organizations that have been appointed as SDG indicator custodians have increased efforts for data collection, also mostly *within* the domain of individual goals (van Driel et al., 2022). International organizations thus focus on the goals in line with their previous policy priorities. They may consider some elements of new goals, as for example shown by the increase in linking of SDG topics overall (see chapter 7), and by the inclusion of non-biodiversity topics into the biodiversity agenda (see chapter 8). However, these inclusions often also build on pre-standing activities (see chapter 8), or new policy topics may be included in an instrumental way to advance the main policy priorities of organizations (Montesano et al., 2021). The prioritization – or cherry-picking – of global goals that fit policy priorities has also been observed at other levels of governance, including at the national level (Allen et al., 2018; Forestier & Kim, 2020; Lepenies et al., 2023) and municipal level (Bisogno et al., 2023; Oseland & Haarstad, 2022; Valencia et al., 2019).

Cherry-picking of global goals at the actor level is not necessarily an issue. Cherry-picking could work as a 'divide and conquer' strategy if governance actors collectively divide their attention across all goals and if the goals are internally consistent and cohesive. In such a case, cherry-picking may very well lead to progress towards all goals. Given their broad scope, global goals could then lead to many small changes in many issue areas across society. Yet, as I will argue in the next section, cherry-picking may also lead to a decrease in functional integration of governance systems, especially so when there are goal conflicts, which in turn makes it harder to address those goal conflicts.

9.2.2. Global goals do not facilitate the navigation of goal conflicts

Shortly after the adoption of the SDGs, several scholars argued that the SDGs provided a relatively integrated framework to work towards, which would encourage governance actors to think about synergies and trade-offs – or goal conflicts (Le Blanc, 2015; Nilsson & Persson, 2017; Stevens, 2017). Other scholars were more critical, emphasizing the fragmented nature and internal inconsistencies in the SDGs (Boas et al., 2016; R. E. Kim, 2016), and sometimes explicitly noting the risk of cherry-picking (Vandemoortele, 2018; see also sections 1.2.2 and 2.2). Indeed, recent literature shows that cherry-picking has become a key concern for the SDGs (Abshagen et al., 2018; Forestier & Kim, 2020; Heras-Saizarbitoria et al., 2021), and my findings point to cherry-picking also at the international level. I argue here that cherry-picking is inherent to global goals and that through cherry-picking, global goals ultimately lead to less institutional integration and an avoidance of navigating goal conflicts.

Global goals present two main issues that lead to cherry-picking and, ultimately, a lack of navigation of goal conflicts. First, the broadness of global goals itself stimulates cherry-picking directly. Setting (too) many goals invites the cherry-picking of the easy goals, at the expense of making progress on the harder goals (Latham, 2003). At the system level, this would result in many actors working on few of the easier goals, and the more difficult goals being left behind (see chapter 7). Second, the more goals are set, the more likely that there are conflicts between the goals, that is that the achievement of one goal negatively affects the achievement of another goal. For policy-domain specific global goals such as the SDGs and MDGs, goal conflicts are likely to arise given the increasingly domain-crossing nature of global issues. For the SDGs specifically, ample studies have demonstrated the existence of conflicts, or trade-offs, among the goals (Pradhan et al., 2017; Warchold et al., 2021). Ideally, when goal conflicts arise, this would lead to a collective consideration of the conflicting goals and a collective decision on which goal to pursue (Piatak et al., 2018). In the context of the SDGs, this is often referred to as 'navigating trade-offs and synergies.' Yet, paradoxically, the presence of conflicting goals makes the likelihood of collective consideration of goal conflicts less likely. When faced with conflicting goals between policy domains, governance actors tend to focus on the goals of their policy domain first and foremost, rather than navigating goal conflicts (Oseland & Haarstad, 2022; Piatak et al., 2018). In other words, governance actors evade goal conflicts, which results in more cherry-picking.

The cherry-picking, in turn, results in action within the scope of individual goals as described in the previous section. Governance actors prioritize efforts on their 'own' global goal, including efforts for collaboration, which leads to a strengthening of siloes in governance structures. As described in the previous section, the advent of SDG 7 (energy) led to more coordination efforts within the energy domain (Downie, 2020a). For ocean protection, the increased prominence of SDG 14 (oceans) has resulted in a more integrated system of governance *within* the domain of oceans (Fanning and Mahon, 2020). While not relating their results to the SDGs, several authors have noted a further institutional integration within the scope of both these policy domains, including for global energy (Tan, 2023) and oceans governance (Barirani, 2022). Some have argued that it is the complexity of the SDGs leads actors to break down the SDGs into single goals and targets to focus on, which ultimately leads to a less institutionally integrated system of governance as a whole (Monkelbaan, 2019: 167).

These strengthening siloes make it exceedingly harder to address any goal conflicts, as it is the collaborations that cross policy domains that facilitate a better understanding of integrated approaches (R. Biermann & Koops, 2017; Montesano et al., 2023; Nilsson et al., 2009). There is thus somewhat of a 'global goals trap'. Their broadness leads to cherry-picking and a higher likelihood of goal conflicts. Goal conflicts exacerbate cherry-

picking. Cherry-picking results in further siloization of governance structures along the lines of the goals. This then lessens the opportunities for interaction across the actor groups working on the different goals, which are needed to solve the goal conflicts.

To escape this trap and overcome goal conflicts, trust, similar normative views, and low competition between governance actors are needed to facilitate interaction (R. Biermann & Koops, 2017; Piatak et al., 2018). This may also explain why I observed that within the UN system, there is more integration of the different SDG policies (see chapters 6 and 7) and more cooperation across policy domains (see chapter 5), as compared to international organizations outside the UN system. While competition within the UN system exists, there is a relatively clear division of tasks and there are organizational structures and processes in place to facilitate interaction and trust-building (Oliveira, 2016). In addition, notwithstanding that there are different normative visions also within the UN system, there is likely more normative agreement within the UN system than among the larger group of international organizations. More normative agreement on goals, and how to achieve them would lead to less goal conflicts overall, and an easier navigation of goal conflicts when they do arise. Thus, among UN entities it may be relatively easier to navigate goal conflicts than among the many smaller and larger international organizations outside the UN system. Outside the UN system though, the global goals trap remains.

Ultimately, global goals may also end up hiding competing normative visions on what goals should be achieved. As described, goal conflicts are likely present in any broad sets of global goals. Yet addressing these goal conflicts is evaded. In addition, many governance actors participate in the implementation of the goals. These actors also have their own perspectives on which goals should be prioritized (see chapter 7), for example to principally prioritize the goals for the environment or not (see chapter 8). Due to the non-legally binding nature of goals, governance actor can prioritize freely those goals that fit their normative vision. In the end then, global goals appear to provide an overarching framework, but in reality, remain normatively ambiguous (see also section 2.4.) and hide competing visions on what sustainable development should look like (Bernstein, 2017; Thérien & Pouliot, 2020). In the SDGs themselves, the existence of goal conflicts is hardly recognized. In the preparation phase of the 2030 Agenda for Sustainable Development (2030 Agenda), the advisory High-level Panel wrote "We do not believe that [such] trade-offs are necessary," leaving any conflicts to be settled by "mankind's capacity for innovation" (HLP, 2013). In the 2030 Agenda itself there is also no mention of navigating trade-offs, only of the creation of synergies (UN, 2015). Thus, rather than facilitating a discussion on competing ideas, global goals allow governance actors to focus on contributing to the SDGs in a way that fits their own vision. The navi-

gation of goal conflicts is avoided, which is a key barrier to achieving all goals (Haack et al., 2022; Oseland & Haarstad, 2022).

9.2.3. Global goals are mostly used by those involved in their formulation

Policymakers intended for the Sustainable Development Goals to be taken up into the programs and policies of all governance actors (UN, 2015). To facilitate this, an extensive stakeholder participation process was conducted to increase the legitimacy of the goals (see section 2.3.3). Yet, some scholars have argued that the non-bindingness of the SDGs reduces the likelihood of governance actors accepting and committing to the goals (Bodansky, 2016; Franck, 1990; Raustiala, 2005; Young, 2017; see also section 2.3.1).

For international organizations, I find that the uptake of the SDGs is uneven (see chapter 6). This aligns with empirical evidence from national and local levels (Allen et al., 2018; Haack et al., 2022; Heras-Saizarbitoria et al., 2021). A possible explanation for this unbalanced adoption of the SDGs at the international level relates to the creation of the goals themselves. When the goals were set, more resourceful and powerful international organizations were able to leave a strong mark on the goals (Chasek et al., 2016; Fukuda-Parr, 2019; Montesano et al., 2021). Such involvement in formulating the goals, in turn, may have created more ownership and more interest among these organizations to later use the goals as an overarching framework (Locke & Latham, 2002). For example, the World Bank strongly influenced the definition of the targets under SDG 10 on reduced inequalities, and the bank remains here a key actor in its implementation, including by serving as SDG 'indicator custodian' (van Driel et al., 2022); and, the International Labour Organization (ILO) was a driving force in the formulation of SDG 8 (work) and considers itself an "active manager" of the current 2030 Agenda (Montesano et al., 2021).

Within the UN system also, there is evidence of higher commitment to the SDGs. This is evidenced by their high use of the SDGs (see chapter 6). While it could be that UN entities are simply better at 'using the SDG language' than others, which could point towards window-dressing, it is also likely that the UN entities are indeed more committed to achieving all SDGs simultaneously. As described, institutional and policy integration are higher for UN system entities as compared to international organizations outside the UN system. Moreover, both institutional (see chapter 5) and policy integration (see chapter 6) have increased within the UN system since the adoption of the SDGs.

9.2.4. A provisional perspective on global goals and global governance structures

Bringing the sections above together, I offer here a broader perspective on how global goals may change governance structures, see figure 9.3. The perspective revolves around

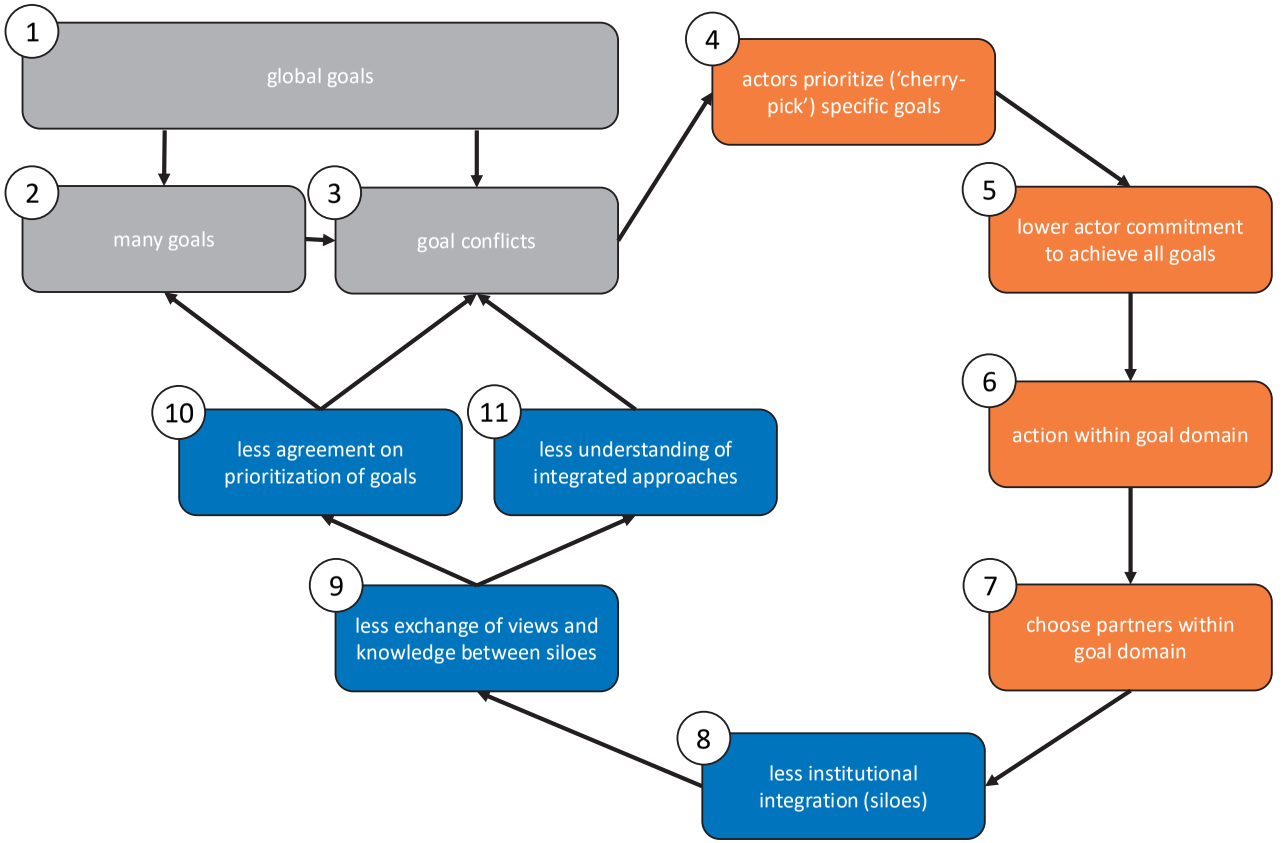


Figure 9.3. A provisional perspective on global goals and global governance structures

A provisional perspective of how global goals and their characteristics (grey boxes) may influence processes within individual international governance actors (orange boxes) and at the system level of international governance actors (blue boxes). The arrows indicate the direction of influence.

how global goals and their characteristics (grey boxes) may affect several processes at the level of individual international governance actors (orange boxes) and how this may subsequently affect interaction processes at the system level between many international governance actors (blue boxes). Some of the characteristics and processes relate to the empirical findings of this thesis and are thus similar to those in figure 9.2. Yet, here I expand on the potential processes taking place in between the empirical observations made in this thesis. The processes are connected by arrows indicating the potential relations between the processes. It should be noted that the processes, characteristics and relations in this perspective, while based on literature, are currently tentative. Future research is needed to investigate the validity of these processes. Moreover, the perspective here is intended to offer one view on how global goals may affect governance structures, to further guide empirical research and theory development. However, I do not intend to suggest that the perspective offered is the only perspective, nor that the processes and characteristics mentioned here are exhaustive, or that the potential relations mentioned here are monocausal explanations. Certainly there are many forces at play in shaping global governance structures (F. Biermann & Kim, 2020), and global goals may have many more effects than only shaping global governance structures (F. Biermann, Hickmann, & Sénit, 2022b). This perspective should thus be considered provisional, offering not a final answer but rather a starting point for future questions. I will now shortly explain this perspective.

Starting at the global goals (box 1), one characteristic of global goals is that they have a broad scope, in order to include the concerns of many countries and be widely, in the case of the MDGs, or even universally, in the case of the SDGs, applicable (see chapter 2). Yet this broad scope also means that there are many global goals (box 2), as the goals are a collection of many countries' concerns. Moreover, as global issues are increasingly interconnected, it is likely that the more issues are included in global goals, the likelier it is that these goals are connected and include at least some goal conflicts (box 3), though also with few goals, goal conflicts may arise. There were certainly goal conflicts in the MDGs (Fehling et al., 2013; Waage et al., 2010) and, while the exact nature of trade-offs within the SDGs is still an on-going topic of research, most scholars agree that trade-offs within the SDGs exist (Bennich et al., 2022; Pradhan et al., 2017; Warchold et al., 2021; see also sections 3.3.2. and 7.1).

Both having many goals (box 2) and the existence of goal conflicts (box 3) possibly lead to the prioritization, or cherry-picking of specific goals (box 4). From goal-setting theory at the individual and firm level, it is known that having (too) many goals invites a focus on easier goals at the expense of making progress on the harder goals (Latham, 2003; see also section 9.2.2.). Also at the municipal level, goal conflicts leads to prioritization of the own goals (Oseland & Haarstad, 2022; Piatak et al., 2018). At the international

level, it is also observed that some of the arguably more difficult SDGs to achieve are left behind, for example SDG 14 (oceans) and SDG 15 (life on land) (Sachs et al., 2022; see also chapter 7). Indeed some authors have warned about the risk of cherry-picking in absence of a single overarching goal that all governance actors must take into account (Nilsson & Costanza, 2015; Underdal & Kim, 2017). Thus, international governance actors are likely to prioritize the easier goals, and goal conflicts could play a role in this, though the exact relation between goal conflicts and goal prioritization at the international level requires further investigation. As certain goals are prioritized (box 4), this could lead to a lower commitment to all other global goals (box 5). While there is not much knowledge available on goal prioritization and commitment by international governance actors, evidence from organizational studies provide some insights. When an organizational goal is prioritized from a set of multiple goals (box 4), subsequently other goals, especially those that are perceived as conflicting, are de-prioritized (Unsworth et al., 2014). Action on lower priority goals is only taken once success – however that is defined by an organization – on higher priority goals is achieved (Gaba & Greve, 2019). Organizations thus create their own goal hierarchy (Cyert & March, 1963). For a set of goals then, this results in a lower commitment to achieve all goals (box 5), as only specific goals are prioritized. Action on the goals is then taken sequentially, starting with the action for the highest priority goal (box 6) (Gaba & Greve, 2019). Whether these insights on goal prioritization and hierarchization also hold true for international governance actors remains to be further investigated. One point of evidence for international governance actors specifically, is that ambiguous or contradicting organizational goals can lead to self-interpretation of goals by international organizations, including on which goals are more or less important (Gutner & Thompson, 2010). The same may hold true for global goals.

As described in section 9.2.1., empirical evidence indicates that global goals facilitate mainly action within a goal domain (box 6), at multiple levels of governance, including at the international level (Downie, 2020a; van Driel et al., 2022; Finnemore & Jurkovich, 2020; see also chapters 5 and 7). These efforts may include choosing to interact with partners that share a similar goal (box 7). Sharing a goal is generally a facilitator of further collaboration (R. Biermann & Koops, 2017; Provan & Kenis, 2008), including at the level of international organizations (Biscop et al., 2005; Downie, 2020a). The choices of individual governance actors for partners within the same goal domain (box 7), result in an alteration of the governance structure at the system level: siloes of collaboration form around the goals. Such siloes reduce the overall institutional integration in the system (box 8). For both the MDGs and SDGs, the global goals were and are policy domain based, resulting in stronger functional siloes within global governance systems (Fukuda-Parr et al., 2014; Waage et al., 2010; see chapter 5).

In the new governance structure, these siloes (box 8), there is less interaction across siloes, which hampers the exchange of views, knowledge, and normative views (box 9) between those siloes (R. Biermann, 2008; Shawoo et al., 2022). Yet, it is these exchanges across domain-based policy siloes that are, according to many scholars, needed to gain a better understanding and implementation of integrated approaches (box 10) (Bodin, 2017; Borgatti & Halgin, 2011; E. B. Haas, 1980; P. M. Haas 1992; P. M. Haas & Ivanovskis, 2022). In addition, these same interactions are considered needed to build trust and start building a normative agreement on which goals should be prioritized (box 11) (R. Biermann & Koops, 2017; Piatak et al., 2018). In other words, interaction is needed to overcome the myopic tendencies of international governance actors (Lipson, 2010). While the studies cited here show that there is likely some connection between siloes in governance structures, and the understanding and agreement on integrated approaches and prioritization of global goals, these relations require further empirical elucidation, especially at the level of international governance actors.

Finally, if there is less collective understanding of integrated approaches (box 10), goal conflicts are likely to remain (box 3). If there is less agreement on goal prioritization (box 11), this could even lead to an exacerbation of goal conflicts (box 3). Only if there is consensus on sustainability goals are actors likely to take on integrated approaches (P. M. Haas & Stevens, 2017), so if there is no consensus on goal prioritization, actors are likely to keep taking action within the scope of their cherry-picked goal (see above and see section 9.2.1), which may then again have a negative effect on the other global goals set. Less agreement on prioritization of global goals, could also possibly result in the setting of even more goals (box 2). The global goals are a collection of priorities of individual governance actors (see section 9.2.3 and chapter 7), so the more disperse the goals of the individual governance actors are, the more goals are to be included in a set of global goals to make it broadly applicable (see chapter 2). Also these relations between agreement on goal prioritization and understanding of integrated approaches, and how they relate to setting many global goals, should be further studied.

9.3. Methodological implications

An additional aim of this thesis was to investigate the usability, advantages, and disadvantages of different quantitative, novel methods in global sustainability governance research. The major contribution of the thesis in this regard is the use of archived websites and Twitter data as data sources and the use of network and text analysis to operationalize institutional and policy integration. In this section, I first reflect on the advantages and disadvantages of those specific methods. After that I turn towards some general limitations and opportunities for the methods used in this thesis.

9.3.1. Archival web data in global governance research

In working with archival web data from The Internet Archive, I found there to be several key benefits. First, it is a data source that is comprehensive. The archived websites are available across countries, across policy domains and over time. While this thesis focused on international organizations, websites are available for many other governance actors as well. Websites have already proven useful to track interactions among different actor groups (Atouba & Shumate, 2010; Coscia et al., 2018), and the addition of archival web data provides novel avenues for research. From other frequently used data sets in global governance research, only the Yearbook of International Organizations provides a similar level of comprehensiveness. However, the Yearbook is a costly data source, and it lacks transparency on how some of the data is collected and transformed. Second, websites are a data-source that can track changes in shorter amount of time. Especially in tracking institutional integration, often-used sources rely on co-membership in treaties and organizations (Beckfield, 2008; Greenhill & Lupu, 2017; Sopranzetti, 2018), self-reported relationships (Gest & Grigorescu, 2010; Rudnick et al., 2019; Wilson et al., 2016) or treaty citations (R. E. Kim, 2013). Notwithstanding the value of these data sources, they track changes that are generally slower to emerge, making them less useful for research focusing on recent changes. Third, specifically the hyperlink data is machine-readable and thus language independent. For example, while the coding of document citations is dependent on the research team's ability to read the documents, this is not the case for the 'reading' of website data. Lastly, the Internet Archive – and many other web archives – is an open-access resources that is well-maintained by a professional organization. It is thus freely available for researchers to use, and there is support available when working with the data.

There are, however, also disadvantages in the use of web data in global governance research. First, while the data is available open access, it is not so easily accessible. The downloading of the webpages and working with them requires some programming skills, especially when one is interested in the assessment of large sets of webpages. This has also proven challenging in the process of data collection for this thesis, ultimately requiring the support of specialized data engineers to collect the data. Second, web data is inherently messy. Websites are constructed in different ways, and some are much larger than others. While this is less of an issue for overarching inferences, any inference on a single or small group of websites must be done with caution. Third, while the language is not an issue for assessing hyperlinks, it is still a factor when assessing the texts of websites. Here, the same obstacles as with any textual data hold. Fourth, while archived web data is available for many international organizations, it is certainly not for all. As described in section 4.5.1, I originally identified 323 international organizations to study. Yet, based on availability of data, this dataset was reduced to 276 for the empirical work of chapter 5, and further reduced for the empirical work that required English

website texts. Finally, and perhaps most importantly, how exactly web data relates to the actual activities, policies, and programs of international organizations – and governance actors more generally – requires further investigation. While there have been ample studies in other fields investigating the relations between, for example, hyperlink networks and partnership networks (Hayes & Scott, 2018; Nam et al., 2014; Park, 2003; Yi & Scholz, 2016), such studies do not exist specifically for global governance actors.

In sum, while web archives certainly cannot replace existing datasets, they do offer an interesting complementary data source. Websites give a unique glimpse into what activities, policies, and programs governance actors themselves find important to share about. They thus give a more cross-cutting view of an entire actor's work, as compared to policy documents which are often on specific programs or activities. While there can be window-dressing to some extent, the same holds true for other texts published by governance actors such as year reports. Moreover, as international organizations and other governance actors engage more and more with their stakeholders via digital media (Ecker-Ehrhardt, 2018a, 2021; Goritz et al., 2021), studying their digital media communication becomes more relevant. Yet very few scholars are currently doing so. Internet archives offer some unique opportunities and benefits for global governance research going forward. While accessibility of the data remains a challenge, current initiatives to make web archives more accessible could change that in the near future (Deschamps et al., 2019; Lin et al., 2017). Finally, it should be taken into account that not all webpages are archived, with a skew towards more popular webpages. In practice, this may mean that the availability of archived webpages is limited for smaller and lesser-known governance actors.

9.3.2. Twitter data in global governance research

The use of *Tweets* has a slightly longer standing in political science research, including at the global level (Baya-Laffite & Pearce, 2016; Goritz et al., 2020, 2021; Grover et al., 2021; Harvey, 2020; Kolleck et al., 2017; Reyes-Menendez et al., 2018; Roldán-álvarez et al., 2021; Schuster et al., 2019). The advantages of using Twitter largely overlap with the advantages of using website data: Twitter data is available across domains, across sectors, and – since recently – researchers may also search the entire Twitter archive, enabling analysis also over time (Twitter, 2023b). Similar to websites, Twitter is a platform that is increasingly used for digital communication by a range of global governance actors, including international organizations (BCW Global, 2020). Twitter has two main advantages compared to archived website data. First, Twitter data is easily accessible. Using the Twitter API, large datasets can be downloaded with relatively little programming experience. Second, Twitter provides highly structured data. While website data is inherently messy, as described above, Twitter data is well-structured, always following the same format. This makes working with the data easier and inferences more reliable.

Some of the disadvantages of working with Twitter data include its fleeting nature. While websites are also continuously updated, they have a core of information that is stable: a website generally gives an overview of all organizational activities. Twitter, on the other hand, provides information that is relevant only in the moment. This means that the content tweeted may be influenced by the time of tweeting. For example, if one studies the use of the hashtag (#) "cleanwater" over a specific period, and there is, for example, an environmental scandal in the mining industry, many actors from the mining industry may start tweeting about clean water, whereas they normally would do so less, giving rise to skewed results. On the other hand, this can also be used to the researcher's advantage by focusing on specific events in time, such as COPs, but the possibility that certain events lead to sudden surges in tweets that may skew research results must be considered when designing Twitter-based studies. Another disadvantage of working with Twitter data is that it is hard to estimate beforehand exactly how much data will be available. As per the example in this thesis, while the initial dataset of collected Tweets on biodiversity was around 240,000 Tweets, the number that was left to study after applying filters was 285, in other words around 0.1% of originally collected data was relevant to the research question. This altered the type of research that could be done with the data. Finally, since Twitter only provides the data the users give as input, it can be hard to find the identity of users. While not a set rule, websites generally cost some money and time to maintain and are therefore mostly run by organizations who provide some details on who they are. On Twitter, however, anyone can make an account for free and provide little to no details on who they are. In the empirical study of chapter 8, this resulted in the inability to identify 5 users.

In sum, Twitter offers an interesting data source. Like websites, it will become a more relevant source to study as governance actors engage more and more via digital media (Ecker-Ehrhardt, 2018a, 2021; Goritz et al., 2021). It is also especially relevant for those interested in studying communication on global policy issues that is influenced by all kinds of actors (see also section 8.2.2). It should be considered that the data is sensitive to short-term changes, and that large datasets may not contain much usable data.

9.3.3. Hyperlink network analysis to measure institutional integration

I found several challenges in using hyperlink networks to assess institutional integration, both functional and structural, for international organizations. First, in using a set of network measures to assess institutional integration (R. E. Kim, 2020), I found that the different network measures used can indicate opposite different directions in terms of institutional integration. I addressed this by scaling the different measures into one measure of integration, which weighed each network measure equally. Yet, it is not clear how each of the individual network measures should be weighted in assessing institutional integration. There is no knowledge currently on whether – for example – cen-

tralization is more defining for institutional integration than modularity, or vice-versa. This points to the difficulty of quantitatively operationalizing a concept that has mostly been studied qualitatively, and it also shows that one should be cautious in interpreting a single network measure to assess institutional integration, as is quite commonly done. Here, further research and comparison of network measures could provide more insights. Second, my operationalization of functional integration relied on the manual coding of international organizations to the SDG policy domain they primarily work on. However, these SDG policy domains sometimes overlap, and do not always fit the working area of an international organization perfectly, making a distinct categorization difficult in some cases. While I addressed this issue by coding with two separate coders, other researchers could potentially assign some international organizations to different SDG policy domains. This could then have an effect on the categorization of inter-organizational ties as "within" versus "across" policy domains, and thus on the measured functional integration. Third, specifically in working with hyperlinks, there are no agreed upon thresholds for considering a certain number of hyperlinks as a relevant social tie. While I conducted robustness tests and manual validation, the thresholds are to some extent arbitrary and sometimes difficult to determine. Finally, while the hyperlink networks were useful in revealing the changes in the quantity of the relations between international organizations over time, they do not reflect on the *quality* of the relations. In previous research on institutional integration, this has been an important aspect, and this is unfortunately an aspect that cannot be revealed using hyperlink network analysis as a method.

I also found several unique benefits and opportunities. First, as described in section 9.3.1, the availability of hyperlinks across policy domains, countries, and time is a strong benefit of this method. While this thesis focused on international organizations, many more governance actors could be added – provided they have a website. This would enable the assessment of governance networks with many different types of actors and across different policy domains. This could be especially relevant for those studying transnational governance networks where many public and private actors are involved, as data collection for such a diverse group of actors remains difficult (Kalfagianni et al., 2020). Second, the use of different network measures may provide opportunities to further finetune the characterization of fragmentation. For example, the concept of centralization describes the tendency of actors to connect to 'popular' actors. If centralization proves an important driver for inter-organizational relations, this could point towards inter-organizational relations being more driven by partner choice and the partner's characteristics, than by the quality of the relationship itself, which is often the focus of qualitative studies on institutional integration. Here, statistical network models provide opportunities for research, to show how the combination of partner characteristics, relationship characteristics, and network characteristics influences the

dynamics of governance networks (Salter-Townshend et al., 2012). Network studies of governance systems could thus go far beyond what has currently been done, provided there is data. Hyperlinks may provide that data.

9.3.4. Quantitative text analysis as method

The analysis of written texts is a long-standing and important part of political science research. While such analysis has historically largely relied on qualitative analysis, the availability of faster computers and the development of more refined methods are rapidly expanding the opportunities for quantitative – or, computational – text analysis. In this thesis, I have relied on a dictionary-based approach for analyzing website texts. In doing so, I found several advantages in the use of quantitative vis-a-vis qualitative text-analysis. First, quantitative text analysis allows for the fast analysis of incredible amounts of text. Manually, the analysis of 500,000 web pages of English text would have been impossible to complete within the scope of a 4-year research project. Expansion of text analysis methods could allow for the rapid analysis of the huge amount of policy documents, for example from the UN (LaFleur, 2019). This requires, however, further expansion of quantitative text analysis methods in the context of political science. Second, and related, fast analysis gives the opportunity to include many observations. In this case, this meant the ability to include a relatively large set of international organizations in my research. This does not only allow for making statistical inferences, as for example in chapter 7, but it also allows for the inclusion of many (international) organizations that are considered less relevant and thus not frequently studied, such as more regional, smaller international organizations. As the findings from this thesis indicate, the processes ongoing in these organizations may differ substantially from the larger and UN system international organizations that are regularly researched. Third, quantitative text analysis is a reliable method as compared to qualitative text analysis. In qualitative text analysis, the coding of texts may need to be synchronized between a multitude of researchers and may still suffer from low inter-coder reliability when replicated. In quantitative text analysis, once the dictionary has been stablished, there is no longer reliance on human interpretation, allowing for the equal and comparable analysis of many different types of texts. Finally, quantitative text analysis may reveal important new research avenues. For example, as observed in this thesis, the political view on SDG interlinkages differs substantially from the natural science view on SDG interlinkages (see chapter 7). The latter constitutes an entire literature stream that is mostly driven by analyses on one SDG indicator dataset (see also section 3.3.2). There are clearly risks to that, and the high availability of text data could thus provide an important complementary data source.

There are, of course, also disadvantages of quantitative text analysis. First and foremost, making inferences from the frequency of keywords will never give the depth of under-

standing that a human gets from reading a text. For example, I use the co-mentioning of SDG topics as an indication of the two SDG topics being linked (see chapter 7). Yet, two SDG topics could, theoretically, also be described separately, or even explicitly as not connected to one another, and this would not be revealed in my methods. In the case of qualitative analysis, researchers would likely notice this. Second, quantitative text analysis as a method is not so accessible as it requires computational skills from the researcher, and some computational power. If the field of 'computational political science' is to be advanced, there is thus a need to facilitate more unusual collaborations with for example computer scientists and data engineers, and to better train students and researchers in computational skills. Third, the analysis of texts relies heavily on the keywords that are included in – and excluded from – the dictionary used in the analysis. For example, if the same topic is described over time using different words that are not part of the dictionary used for analysis, a dictionary-based approaches may falsely indicate that a certain topic is less discussed over time. Specifically for the SDGs this is less of an issue, as the SDGs have been set to remain the same goals for 15 years. However, for topics that are more prone to change, this may prove a big challenge. Fourth, dictionary approaches work best when topics are clearly delineated. For the SDGs, this is evidently not the case. Also, in the manual categorization of international organizations to SDGs, and in the manual checks on the website texts, the categorization of organizations and texts to specific SDGs can be somewhat arbitrary. For example, if a text is mainly about energy, but also mentions the affordability of energy, one could argue that it also relates to poverty. The interrelatedness of the topics in the SDGs thus makes classification of texts and organizations to specific SDGs, both manual and machine-based, challenging.

9.3.5. Limitations and opportunities

The quantitative methods explored in this thesis have several important limitations. Some of these are related to the nature of quantitative research in the social sciences. First, quantitative research is more deductive than inductive. In this thesis also, I have investigated specific expectations of the SDGs, namely changes in institutional and policy integration, within and among international organizations. While the analyses reveal important trends, they do not allow for the emergence of potential other effects of the SDGs on international organizations. For example, the notion that the SDGs are used as a governance model was discovered only through inductive, qualitative analysis of data (see chapter 8). Second, while the methods used here allow for the detection of trends over time and to reveal differences between groups of international organizations, they do not explain why this might be the case. For example, my analysis revealed that the SDGs are used less by environmental international organizations but provides no insights as to why this might be the case. While literature provides some ideas, additional qualitative research would be useful here. Third, inference is based here largely on descriptive statistics (see section 4.6). The lack of a control group makes it difficult

to discern the effects of the SDGs from other factors that are at play. Related, the effects and effectiveness of the SDGs as governance tool for international organizations may be influenced by many other factors, such as organizational culture, the structure of the international organization, funding, etc. However, collecting such factors for a large set of international organizations is a time-consuming endeavor. A comparative case study on international organizations in different categories, for example environmental, economic, and social, global, and regional, may be useful in this regard.

Nevertheless, the methods used here provide some important opportunities. First, as described, the inclusion of a large set of international organizations. Large-N studies can support qualitative research by analyzing whether findings from the latter also hold true on a larger scale. For example, the notion that global goals may strengthen siloes had emerged from small-N studies but had not yet been shown in studies on a large group of (international) organizations. By having both quantitative and qualitative approaches pointing towards comparable results, the scientific evidence base is strengthened. Second, quantitative methods may provide support as a first step for qualitative research. For example, the qualitative analysis of tweets (see chapter 8) was enabled by a quantitative filtering of those tweets. As methods develop further, for example with regards to text analysis, quantitative methods may provide more and more opportunities for the categorization of political texts. Third, quantitative methods may provide an opportunity to bring together qualitative methods. For example, the use of a network analysis framework to measure institutional integration brings together different conceptualizations of institutional integration (see section 5.3.2).

9.4. Future research

The empirical research in this thesis has given insights into some important trends on how international organizations have responded to the SDGs. However, it has also opened many avenues for more research. In this section, I propose five avenues for future research that have the potential to drive forward the field.

First, future research should focus on processes of SDG integration into the work of international organizations. My results have shown an increase in SDG use among international organizations, and some effects in terms of institutional integration and how the SDG topics are linked. Yet, how the process of internalizing the SDGs take place, and how the SDGs are perceived in international organizations has received little attention. Research in this area could focus on, for example, whether the SDGs are perceived as a set of goals or as separate goals, whether the SDGs are perceived as helpful and if so in what ways, how the SDGs relate to the own mandate. While some studies ex-

ist in this regard (see for example Censoro et al. 2020; Montesano et al. 2021), more insights are needed, likely from qualitative case studies. It is also relevant here to focus on different types of international organizations. My results show differences between groups of international organizations – within and outside the UN system, global and regional international organizations, organizations focusing mainly on economic, social, or environmental domains. Since the few existing case studies have focused on the larger, UN system, international organizations (Beisheim et al., 2022), it is relevant to expand the scope to also include other types of international organizations, perhaps especially those where I see the least effects of the SDGs, that is in the regional, smaller international organizations. In addition, future research should focus specifically on how environmental organizations view and work with the SDGs. I find that international organizations working mainly on environmental issues use the SDGs less. Given the importance of increasing the salience of environmental issues at the international level, it would be interesting to find out why this is the case.

Second, future research should focus on the role of the SDGs in facilitating cooperation. Both in my empirical work and that of others, it has been found that the SDGs are often referred to as a relational tool. Yet, how the SDGs are used to form partnerships remains somewhat unclear. Special attention should be given to how the SDGs facilitate either inter- or intra-policy domain collaborations, as this could be key to the lessening or strengthening of policy domain-based siloes. This area of study relates to boxes 7 (choosing partners) and 8 (institutional integration and siloes) in figure 9.3, where the relations between those boxes should thus be further assessed. For example, for the new global biodiversity agenda, the SDGs are viewed as a relational tool to connect to non-environmental actors. Yet, at a larger scale I do not find these effects. There seems to thus be a discrepancy here between how well the SDGs are facilitating cooperation and how well they are perceived to facilitate cooperation. This discrepancy warrants further investigation. It might be interesting here to experiment with the role of indicators in global goals. As described, multiple scholars have pointed towards indicators as problematic, as they steer towards more narrow approaches and water down the ambition of goals (Elder & Olsen, 2019; Fukuda-Parr & McNeill, 2019; R. E. Kim, 2023). It could be worthwhile to further research – or even experiment – with a global goal that does not have indicators assigned at all. If indicators water down ambition, perhaps having only an aspirational global goal could increase ambition, allowing governance actors to devise their own monitoring systems, including indicators. In national development planning, scholars have already noted the need for more dynamic and adaptive forms of monitoring to deal with complex policy problems (Mazzucato, 2017; Swanson et al., 2010). A similar approach might be useful at the global level, yet this requires further research first.

Third, future research should focus on why international organizations cherry-pick. This could be related to the ways that the SDGs are viewed, that is as an integrated set or as separate goals. Alternatively, it could be driven by differing views on what goals should be prioritized, by mandates, or by strategic behavior, or a combination. This avenue of research relates to box 4 (goal prioritization) and box 5 (lower commitment to all goals) in figure 9.3. As described in section 9.2.4, international governance actors may apply their own hierarchy to global goals, yet whether this takes place and if so how, requires further investigation. Given the presence of cherry-picking at all levels of governance, this research avenue could be highly relevant to multiple levels of governance, and not only at the international level. In addition, better insight into cherry-picking may also provide strategies to prevent the falling behind of some global goals. Going beyond cherry-picking, research could also focus on what prevents or reduces cherry-picking, or what factors influence the order of prioritization in international organizations. As a next step, research could investigate whether the use of integrated planning tools has any effect on cherry-picking. As described in section 9.1.1., the effort to use integrated planning tools seems to have had some effect in reducing policy siloes within the UN (Beisheim et al., 2022; UN Sustainable Development Group, 2019). While it would be beneficial to increase the use of such planning tools among all international organizations, as I will propose in section 9.5.4., it may also be worthwhile to first set up an experiment where one group of international organizations applies these tools, and another does not, to see whether this reduced cherry-picking or changes the perception of the SDGs within the international organizations assessed.

Fourth, as described in section 9.2.4, how global goals affect governance structures and through what processes at the level of individual international governance actors and at the system level requires further elucidation. While all processes as described in the provisional perspective (see figure 9.3) need further research, I highlight here one area that needs urgent attention, that is how the exchanging of views, knowledge, and normative views across siloes (box 9) relates to understanding of integrated approaches (box 10) and agreement on goal prioritization (box 11). As noted in this thesis, the prioritization and policy integration of the SDGs differs tremendously among international organizations (see chapter 7), which leads to some goals being left behind. To ensure achievement of all goals, processes to achieve agreement on goal prioritization and better understanding of integrated approaches is arguably needed. If interaction across siloes plays an important role in that, any insightful research findings here could benefit the achievement of the SDGs.

Fifth, future research should expand on the use of large-N methods, using different quantitative approaches. For example, the methods used here using website data could be put to further use in assessing non-government organizations, business actors, and

other governance actors. Especially useful may be methods that combine quantitative and qualitative methods. An interesting path here is to use web or Twitter data to identify the relations between governance actors, and then using interviews or survey methods to get deeper insights into those relations. This would simultaneously provide empirical insights into governance networks, and methodological insights into how online networks relate to self-reported networks specifically in governance. Specific attention here could go to the measurement of institutional integration. My findings point towards a further need for refinement of a network model of institutional integration. Here, research comparing different governance networks using multiple network measures could be beneficial.

9.5. Policy implications

With seven years left to implement the SDGs, progress on many goals is stalling (Sachs et al., 2022). While there are many challenges to achieving the SDGs, I focus here on two key challenges: collective action for the goals and moving towards holistic approaches (Bowen et al., 2017; Sachs et al., 2022). My findings point towards four actions that can be taken to address these two challenges, which I will expand on in the next four sections. I discuss these actions in order of ease of implementation: the 'low-hanging fruit' first, followed by actions that require more effort. As final section, I will shortly reflect on key take-aways for a post-2030 agenda in section 9.5.5.

9.5.1. Push the use of the SDGs across all international organizations

As described, the SDGs can galvanize action (see section 9.2.1), and the SDGs are also increasingly adopted by international organizations. However, the latter process is not balanced: it is mostly the UN-affiliated and larger international organizations that use the SDGs (Censoro et al., 2020; Montesano et al., 2021; see also chapter 7). Outside these groups, the SDGs seem to be less relevant as an overarching agenda. About 1 out of 3 international organizations outside the UN does not even mention the SDGs on their websites (see chapter 7). These are mainly smaller, regional international organizations.

Thus, while the SDGs are increasingly used, they are not yet shared by all international organizations. Instead, they are referred to mainly by larger organizations and by organizations from within the UN system. If the SDGs were a truly global agenda, this could potentially trigger more action towards the goals. Yet to become a global agenda, governments and UN agencies must make a renewed push for the uptake of the goals also into regional and smaller international organizations. One opportunity to do so is through the UN regional commissions. The regional commissions have already taken on a key role in increasing the uptake of the SDGs as an integrated framework among

countries (Georgeson & Maslin, 2018), and often collaborate with regional international organizations. They may thus play the role of broker, and as such facilitate the uptake of the SDGs throughout the network of international organizations (Provan & Kenis, 2008; Saz-Carranza, 2015).

9.5.2. Emphasize more strongly the interconnected nature of the SDGs

However, as I observed in this thesis, galvanizing action is not enough, as this action often takes place only within the scope of individual goals (see figure 9.3, box 4). The challenge of moving towards holistic approaches remains and becomes even stronger with the adoption of the SDGs. My findings indicate that international organizations mainly see the SDGs as a set of separate goals, rather than a set of integrated goals. While the SDGs are presented as integrated and indivisible in the 2030 Agenda, this presentation does not transfer to outside the 2030 Agenda. For example, the yearly reviews at the High-Level Political Forum (HLPF) are focused on specific SDGs, rather than on all SDGs (Amanuma et al., 2019). In addition, the SDG indicators and targets are very narrow, often focusing only on either economic, social, or environmental concerns (Fukuda-Parr & McNeill, 2019; R. E. Kim, 2023). Such a system of narrow targets and indicators waters down the integrated ambition of the 2030 Agenda itself (Elder & Olsen, 2019; Fukuda-Parr & McNeill, 2019). Also in visual communication, the SDGs are presented as 17 separate goals, rather than as connected goals, see figure 1.3.

I propose here two small steps that may contribute to governance actors, including international organizations, viewing the SDGs more as an integrated set of goals. An emphasis on the SDGs as integrated corresponds possibly to an in the process of global goals creating siloes at the point of cherry-picking (see figure 9.3., box 4). First, in-depth review of specific SDGs at the HLPF can be improved upon by including always at least one primarily economic, one primarily social and one primarily environmental goal for in-depth review and by reviewing not only the selected SDGs in-depth, but also their interrelatedness. Second, the way the SDGs are visually represented in communication can be changed to better reflect that the SDGs are interconnected.

9.5.3. Increase collaboration across policy domains

As described in section 9.2.2., the navigation of goal conflicts requires more effort than simply emphasizing the interconnected nature of the SDGs. As I have observed, to the extent that individual goals facilitate coordination and integration of international organizations, this is largely within their policy domains (Downie, 2020a; van Driel et al., 2022; see figure 9.3, box 4). As a result, the policy siloes that the UN wanted to break down have become even stronger (see chapter 5 and figure 9.3, box 8). International decision-making thus still occurs in siloes without a strategy to improve cooperation

across those silos (Chasek & Downie, 2021); and the current SDGs are not able to transform these institutional structures (Beisheim et al., 2022).

Increasingly strong domain-based siloes may hamper the exchange of novel ideas and knowledge that is required to navigate the interconnected problems embedded in the SDGs (Bodin, 2017; Borgatti & Halgin, 2011). Overcoming sectoral siloes is thus essential to achieve the goals (Niestroy & Meuleman, 2016). To do so, more collaboration across policy domains is needed. Importantly, the facilitation of collaborations across policy domains may be required to stop governance actors from simply avoiding goal conflicts (see section 9.2.2). An increase of collaborations across policy domains – or across the scope of global goals – means a possible intervention in the process of global goals creating siloes at the point of goals choosing partners mainly within the same goal scope (see figure 9.3., box 7).

To increase collaboration across policy domains, I propose here the establishment of 'SDG target custodians' at the international level. Custodianship of SDG indicators has already facilitated collaboration in the past (van Driel et al., 2022), yet indicator custodians often work in the same policy domain. At the target level, however, all three sustainability dimensions – economic, social, and environmental – are better covered. An extension of the custodianship system to also cover SDG targets may facilitate policy integration among international organizations from different policy domains and trigger more extensive collaboration. One form of collaboration could entail the co-developing of knowledge on how economic, social, and environmental aspects can be better balanced within an SDG target, or where important trade-offs between the three dimensions lie. The latter may lead to findings on unavoidable trade-offs between economy, society, and environment, which is vital input at the international and national levels to make political choices on which SDGs to prioritize.

9.5.4. Give soft prioritization to the SDGs that are left behind

Some goals are severely 'left behind,' especially so the environmental ones (Sachs et al., 2022; see also chapter 7). Even when the SDGs are used, most international organizations do not pay attention to all the goals but rather prioritize, or cherry-pick, those SDG(s) that best fit their long-standing policy priorities (Biermann et al., 2022; Kotzé et al., 2022; Schmidt-Traub et al., 2017; see also chapters 6 and 7). Some goals lack prioritization and are hardly integrated with others. For example, the uptake of ocean and land issues into the SDGs was expected to lead to more attention and better integration of these issues with other global concerns (Visseren-Hamakers & Kok, 2022). Broader planetary concerns such as those under SDG 14 (oceans) and SDG 15 (land) remain side-lined in global policies, including within the UN system (Kotzé et al., 2022; chapter 7 of this thesis). Global and domestic inequality only barely made it into the final set of SDGs as

SDG 10 (inequality) (Kamau et al., 2018), and this goal is still poorly supported and often marginalized (Fukuda-Parr, 2019; Sénit et al., 2022). For some goals, there is thus low overall commitment to achieve them at the international level (see figure 9.3., box 5).

To ensure commitment to all goals, it is important that all international organizations structurally assess the effects of their policies and programs on all SDGs. This could improve integrated approaches to achieve the goals (Breuer, Janetschek, et al., 2019). An assessment of policies and programs' effects on all SDGs means a possible intervention at the point of increasing commitment to all goals (see figure 9.3., box 5).Within the UN system, the Sustainable Development Cooperation Framework has been useful in this regard (Beisheim et al., 2022; UN Sustainable Development Group, 2019). The UN, including the UN regional commissions, could promote the use of this framework also outside the UN system.

However, mapping is not enough. To ensure that some SDGs do not fall further behind, new efforts at prioritization are needed. This would entail an intervention to increase the prioritization of certain goals (see figure 9.3, box 10). While a 'hard' prioritization of one goal over another (e.g., if there is a trade-off between SDG x and SDG y, SDG x must always be chosen) is politically unlikely, guidelines for 'soft prioritization' may be created. For example, the determination of minimum progress thresholds for each SDG target may prove useful. Once progress falls under the threshold, that target gets principled priority and specific policies are triggered to increase target achievement. This approach has proven valuable in adaptive policy planning (Swanson et al., 2010). The target thresholds should be set by governments with some guidance by international organizations.

9.5.5. Take-aways for a post-2030 agenda

While the focus of policymakers should be on accelerating action towards the SDGs now, it is also important to look ahead at a post-2030 agenda. It is clear that many of the challenges embedded in the SDGs will remain important challenges at the global level also beyond 2030. The question is therefore not whether the same challenges need to be addressed, but rather with what prioritization and how. I will offer two take-aways based on the empirical findings in this thesis.

First, it will remain of crucial importance to deal with the interconnectedness between global issues – whichever may appear in a post-2030 agenda. As observed, the SDGs have done little to move towards more holistic approaches in global governance. Thus, if a post-2030 agenda again consist of non-binding global goals, without clear prioritization, then it must be considered how goal conflicts will be addressed. The visualization in figure 9.3. is useful here to find points of intervention. Some scholars have argued

that the number of global goals (box 2) should be lower (Bernstein, 2017; Underdal & Kim, 2017; Young, 2017), and this could perhaps mitigate cherry-picking. Yet, the unavoidable question arises which of the SDGs should be dropped in a post-2030 agenda. There is no clear answer here, as all goals are important. I therefore do not support the idea of reducing the diversity of goals.

Rather, my suggestion is to focus on better understanding integrated approaches to ultimately reduce goal conflicts (see figure 9.3 box 11 and box 3). To increase understanding of integrated approaches, part of a novel agenda could be a commitment of nation states to map the interlinkages between issue areas for their countries. While this is currently encouraged for the SDGs in the handbook on how to conduct Voluntary National Reviews (VNR) (UNDESA, 2022), few countries have done so. For example, the Netherlands mentions the need for integrated approaches and to explore interlinkages in its most recent VNR yet does not conduct a mapping (Kingdom of the Netherlands, 2022). A more stringent approach on at least analyzing interlinkages between issue areas may be a first step in gaining a better understanding of integrated approaches and in increasing transparency on where trade-offs lie between interconnected issue areas for each country. This could, for example, be achieved by establishing a review process that is not merely voluntary, but has several mandatory elements.

Second, building on my suggestion to softly prioritize those SDGs that fall behind (see section 9.5.4), a post-2030 agenda should make bolder choices on prioritization of issue areas. As observed with the SDGs, the economic dimension of sustainable development has been most prioritized so far (Forester & Kim, 2020; Heras-Saizarbitoria et al., 2021; Smith et al., 2021; see also chapter 7), and the environmental dimension is most neglected. Attention and effort must be better divided, and that means taking some of the focus off economic development, at least in those countries with already high economic prosperity. There might be political space to do so. Several countries in the global North are increasing their focus on a 'well-being economy' (WEGO, 2023) and at the UN too there are calls to "correct a glaring blind spot in how we measure economic prosperity and progress" (UNGA, 2021). However, currently, high-income countries still prioritize the SDGs on economic development (Forestier & Kim, 2020). To prevent this, perhaps economic development should lose its status as global goal for high-income countries.

In practice, this means that if a post-2030 agenda consists of goals, goals may need to differ for low-, middle-, and high-income countries. While universality was one of the key achievements of the SDGs, it has also offered up the opportunity for high-income countries to remain focused on those goals where their achievement is already high. By removing the goals that are relatively easy to cherry-pick for high-income countries, their focus may shift towards other goals (see figure 9.3, box 4 and box 5). The Millen-

nium Development Goals were aimed only at developing countries (see section 2.3.3.), the SDGs are aimed at all countries, and here I propose that any post-2030 goals contain goals specifically directed at high-income countries. Such 'Global North goals' would focus on the areas where high-income countries score the worst: greenhouse gas emissions; nature conservation; waste generation; (fresh)water pollution; renewable energy; assistance to low- and middle-income countries; and malnutrition (Sachs et al., 2022). Similarly, middle- and low-income countries could focus efforts on areas where their challenges lie. While this idea is embedded in the SDGs as well, by means of national leeway (see section 2.3.4.), there is arguably too much national leeway for countries to proceed with 'business as usual.' As a result, the world is not living up to the transformation that was promised in the 2030 Agenda.

Part V

Supporting material

Bibliography

Abbott, K. W., & Bernstein, S. (2015). The High-Level Political Forum on Sustainable Development: Orchestration by default and design. Global Policy, 6(3), 222–233. https://doi.org/10.1111/1758-5899.12199

Abbott, K. W., Bernstein, S., & Janzwood, A. (2020). Orchestration. In F. Biermann & R. E. Kim (Eds.), Architectures of earth system governance: Institutional complexity and structural transformation (pp. 233–253). Cambridge University Press.

Abbott, K. W., Genschel, P., Snidal, D., & Zangl, B. (2012). Orchestration: Global governance through intermediaries. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2125452

Abbott, K. W., Genschel, P., Snidal, D., & Zangl, B. (2015). International organizations as orchestrators. Cambridge University Press.

Abbott, K. W., Green, J. F., & Keohane, R. O. (2016). Organizational ecology and institutional change in global governance. International Organization, 70(2), 247–277. https://doi.org/10.1017/s0020818315000338

Abshagen, M.-L., Cavazzini, A., Graen, L., & Obenland, W. (2018). Highjacking the SDGs? The private sector and the Sustainable Development Goals. Brot für die Welt - Evangelisches Werk für Diakonie und Entwicklung e. V.

Adesina, O. S. (2017). Foreign policy in an era of digital diplomacy. Cogent Social Sciences, 3(1), 1297175. https://doi.org/10.1080/23311886.2017.1297175

Adger, W. N., Benjaminsen, T. A., Brown, K., & Svarstad, H. (2001). Advancing a political ecology of global environmental discourses. Development and Change, 32(4), 681–715. https://doi.org/10.1111/1467-7660.00222

Aggarwal, V. K. (2000). Analysing NATO expansion: An institutional bargaining approach. Contemporary Security Policy, 21(2), 63–82. https://doi.org/10.1080/13523260008404255

Ainsworth, S. G., Alsum, A., SalahEldeen, H., Weigle, M. C., & Nelson, M. L. (2011). How much of the web is archived? Proceedings of the 11th annual international ACM/IEEE joint conference on digital libraries, 133–136.

Akuraju, V., Pradhan, P., Haase, D., Kropp, J. P., & Rybski, D. (2020). Relating SDG11 indicators and urban scaling - An exploratory study. Sustainable Cities and Society, 52, 101853.

Ala-Uddin, M. (2019). 'Sustainable' discourse: a critical analysis of the 2030 agenda for sustainable development. Asia Pacific Media Educator, 29(2), 214–224.

Alcacer, J., & Ingram, P. (2013). Spanning the institutional abyss: The intergovernmental network and the governance of foreign direct investment. American Journal of Sociology, 118(4), 1055–1098. https://doi.org/10.1086/668692

Allen, C., Metternicht, G., & Wiedmann, T. (2016). National pathways to the Sustainable Development Goals (SDGs): A comparative review of scenario modelling tools. Environmental Science & Policy, 66, 199–207.

Allen, C., Metternicht, G., & Wiedmann, T. (2018). Initial progress in implementing the Sustainable Development Goals (SDGs): A review of evidence from countries. Sustainability Science, 13(5), 1453–1467. https://doi.org/10.1007/s11625-018-0572-3

Allen, C., Metternicht, G., & Wiedmann, T. (2019). Prioritising SDG targets: Assessing baselines, gaps and interlinkages. Sustainability Science, 14(2), 421–438. https://doi.org/10.1007/s11625-018-0596-8

Andersen, L. E., Canelas, S., Gonzales, A., & Peñaranda, L. (2020). Atlas municipal de los Objetivos de Desarrollo Sostenible en Bolivia 2020. Universidad Privada Boliviana.

Anderson, C. C., Denich, M., Warchold, A., Kropp, J. P., & Pradhan, P. (2022). A systems model of SDG target influence on the 2030 Agenda for Sustainable Development. Sustainability Science, 17(4), 1459–1472. https://doi.org/10.1007/s11625-021-01040-8

Angst, M. (2018). Bottom-up identification of subsystems in complex governance systems. Policy Studies Journal. https://doi.org/10.1111/psj.12301

Angst, M., Widmer, A., Fischer, M., & Ingold, K. (2018). Connectors and coordinators in natural resource governance. Ecology and Society, 23(2). https://doi.org/10.5751/ES-10030-230201

Annesi, N., Battaglia, M., Gragnani, P., & Iraldo, F. (2021). Integrating the 2030 Agenda at the municipal level: Multilevel pressures and institutional shift. Land Use Policy, 105, 105424. https://doi.org/10.1016/j.landusepol.2021.105424

Ansong, J. O., McElduff, L., & Ritchie, H. (2021). Institutional integration in transboundary marine spatial planning: A theory-based evaluative framework for practice. Ocean & Coastal Management, 202, 105430. https://doi.org/10.1016/j.ocecoaman.2020.105430

Anthes, C. (2019). Institutional roadblocks to human rights mainstreaming in the FAO: A tale of silo culture in the UN system. Springer Nature.

Apergis, N., Jebli, M. B., & Youssef, S. B. (2018). Does renewable energy consumption and health expenditures decrease carbon dioxide emissions? Evidence for sub-Saharan Africa countries. Renewable Energy, 127, 1011–1016.

Armstrong, C. (2020). Ocean justice: SDG 14 and beyond. Journal of Global Ethics, 16(2), 239–255. https://doi.org/10.1080/17449626.2020.1779113

Asselt, H. V. (2014). The fragmentation of global climate governance: Consequences and management of regime interactions. Edward Elgar Publishing.

Atouba, Y. C., & Shumate, M. (2010). Interorganizational networking patterns among development organizations. Journal of Communication, 60(2), 293–317. https://doi.org/10.1111/j.1460-2466.2010.01483.x

Atouba, Y. C., & Shumate, M. (2015). International nonprofit collaboration. Nonprofit and Voluntary Sector Quarterly, 44(3), 587–608. https://doi.org/10.1177/0899764014524991

Azizi, D., Biermann, F., & Kim, R. E. (2019). Policy integration for sustainable development through multilateral environmental agreements: An empirical analysis, 2007–2016. Global Governance: A Review of Multilateralism and International Organizations, 25(3), 445–475. https://doi.org/10.1163/19426720-02503005

Bäckstrand, K. (2006a). Democratizing global environmental governance? Stakeholder democracy after the World Summit on Sustainable Development. European Journal of International Relations, 12(4), 467–498.

Bäckstrand, K. (2006b). Multi-stakeholder partnerships for sustainable development: rethinking legitimacy, accountability and effectiveness. European Environment, 16(5), 290–306. https://doi.org/10.1002/eet.425

Bäckstrand, K., Campe, S., Chan, S., Mert, A., & Schäferhoff, M. (2012). Transnational public-private partnerships. In F. Biermann & P. Pattberg (Eds.), Global environmental governance reconsidered (pp. 123–147). The MIT Press.

Bäckstrand, K., & Kylsäter, M. (2014). Old wine in new bottles? The legitimation and delegitimation of UN public–private partnerships for sustainable development from the Johannesburg Summit to the Rio+20 Summit. Globalizations, 11(3), 331–347. https://doi.org/10.1080/14747731.2014.892398

Baker, P., & McEnery, T. (2015). Who benefits when discourse gets democratised? Analysing a Twitter corpus around the British Benefits Street debate. In Corpora and discourse studies (pp. 244–265). Palgrave MacMillan.

Barirani, D. (2022). A UN treaty for marine biodiversity: Establishing environmental policy integration in global governance. Global Policy, 13(3), 390-400.

Barnes, M. D., Glew, L., Wyborn, C., & Craigie, I. D. (2018). Prevent perverse outcomes from global protected area policy. Nature Ecology & Evolution, 2(5), 759–762. https://doi.org/10.1038/s41559-018-0501-y

Barnett, M. N., & Finnemore, M. (1999). The politics, power, and pathologies of international organizations. International Organization, 53(4), 699–732. https://doi.org/10.1162/002081899551048

Bauer, S., & Biermann, F. (2004). Partners or competitors? Policy integration for sustainable development between UN agencies. Conference on the Human Dimensions of Global Environmental Change.

Baya-Laffite, N., & Pearce, W. (2016). How is the topicalspace of COP21 shaped on Twitter and Youtube? From issue climatisation to issuedrift. University of Amsterdam : Digital Methods Initiative.

BCW Global. (2020). Twiplomacy study. https://www.twiplomacy.com/twiplomacy-study-2020

Beck, S., & Mahony, M. (2018). The IPCC and the new map of science and politics. Wiley Interdisciplinary Reviews: Climate Change, 9(6), e547.

Beckfield, J. (2008). The dual world polity: Fragmentation and integration in the network of intergovernmental organizations. Social Problems, 55(3), 419–442. https://doi.org/10.1525/sp.2008.55.3.419

Beckfield, J. (2010). The social structure of the world polity. American Journal of Sociology, 115(4), 1018–1068. https://doi.org/10.1086/649577

Beisheim, M., Bernstein, S., Biermann, F., Chasek, P., Driel, M. van, Fritzsche, F., Sénit, C.-A., & Weinlich, S. (2022). Global governance. In F. Biermann, T. Hickmann, & C.-A. Sénit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 33–68). Cambridge University Press.

Beisheim, M., & Fritzsche, F. (2022). The UN High-Level Political Forum on Sustainable Development: An orchestrator, more or less? Global Policy. https://doi.org/10.1111/1758-5899.13112

Bell, E., & Scott, T. A. (2020). Common institutional design, divergent results: A comparative case study of collaborative governance platforms for regional water planning. Environmental Science & Policy, 111, 63–73. https://doi.org/10.1016/j.envsci.2020.04.015

Ben-David, A. (2016). What does the Web remember of its deleted past? An archival reconstruction of the former Yugoslav top-level domain. New Media & Society, 18(7), 1103–1119. https://doi.org/10.1177/1461444816643790

Ben-David, A., & Huurdeman, H. (2014). Web archive search as research: Methodological and theoretical implications. Alexandria: The Journal of National and International Library and Information Issues, 25(1–2), 93–111. https://doi.org/10.7227/alx.0022

Bengtsson, H. (2003). The Roo package-object-oriented programming with references using standard R code. Proceedings of the 3rd International Workshop on Distributed Statistical Computing (DSC 2003), March, 20–22.

Bennich, T., Weitz, N., & Carlsen, H. (2020). Deciphering the scientific literature on SDG interactions: A review and reading guide. Science of The Total Environment, 728, 138405. https://doi.org/10.1016/j.scitotenv.2020.138405

Bennich, T., Weitz, N., & Carlsen, H. (2022). Scientific approaches to SDG interactions analysis: The state of play. In A. Breuer, D. Malerba, S. Srigiri, & P. Balasubramanian (Eds.), Governing the interlinkages between the SDGs: Approaches, opportunities and challenges (pp. 16–29). Routledge.

Bernstein, S. (2017). The UN and the governance of Sustainable Development Goals. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 213–240). The MIT Press.

Betts, A. (2010). Substantive issue-linkage and the politics of migration. In C. Bjola & M. Kornprobst (Eds.), Arguing global governance (pp. 105–120). Routledge.

Bhola, N., Klimmek, H., Kingston, N., Burgess, N. D., Soesbergen, A., Corrigan, C., Harrison, J., & Kok, M. T. J. (2021). Perspectives on area-based conservation and its meaning for future biodiversity policy. Conservation Biology, 35(1), 168–178. https://doi.org/10.1111/cobi.13509

Bidarbakhtnia, A. (2020). Measuring sustainable development goals (SDGs): An inclusive approach. Global Policy, 11(1), 56–67.

Bieberstein, K. R. von, Sattout, E., Christensen, M., Pisupati, B., Burgess, N. D., Harrison, J., & Geldmann, J. (2019). Improving collaboration in the implementation of global biodiversity conventions. Conservation Biology, 33(4), 821–831. https://doi.org/10.1111/cobi.13252

Biermann, F. (2000). The case for a World Environment Organization. Environment: Science and Policy for Sustainable Development, 9(42), 22–31.

Biermann, F. (2014). Earth system governance: World politics in the Anthropocene. The MIT Press.

Biermann, F., Chan, S., Pattberg, P., & Mert, A. (2012). Multistakeholder partnerships for sustainable development: Emergence, influence and legitimacy. Edward Elgar.

Biermann, F., Davies, O., & Grijp, N. van der. (2009). Environmental policy integration and the architecture of global environmental governance. International Environmental Agreements: Politics, Law and Economics, 9(4), 351. https://doi.org/10.1007/s10784-009-9111-0

Biermann, F., Driel, M. van, Vijge, M. J., & Peek, T. (2020). Governance fragmentation. In F. Biermann & R. E. Kim (Eds.), Architectures of earth system governance: Institutional complexity and structural transformation (pp. 158–180). Cambridge University Press.

Biermann, F., & Gupta, A. (2011). Accountability and legitimacy in earth system governance: A research framework. Ecological Economics, 70(11), 1856–1864. https://doi.org/10.1016/j.ecolecon.2011.04.008

Biermann, F., Hickmann, T., & Sénit, C.-A. (2022a). Assessing the impact of global goals: Setting the stage. In F. Biermann, F. and Hickmann, & C.-A. Sénit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 1–21). Cambridge University Press. https://doi.org/10.1017/9781009082945.002

Biermann, F., Hickmann, T., & Sénit, C.-A. (2022b). The political impact of the Sustainable Development Goals: Transforming governance through global goals? Cambridge University Press. https://doi.org/10.1017/9781009082945.009

Biermann, F., Hickmann, T., Sénit, C.-A., Beisheim, M., Bernstein, S., Chasek, P., Grob, L., Kim, R. E., Kotzé, L. J., Nilsson, M., Ordóñez-Llanos, A., Okereke, C., Pradhan, P., Raven, R., Sun, Y., Vijge, M. J., Vuuren, D. van, & Wicke, B. (2022). Scientific evidence on the political impact of the Sustainable Development Goals. Nature Sustainability, 1–6. https://doi.org/10.1038/s41893-022-00909-5

Biermann, F., Hickmann, T., Sénit, C.-A., & Grob, L. (2022). The Sustainable Development Goals as a transformative force? Key insights. In F. Biermann, T. Hickmann, & C.-A. Sénit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 204–226). Cambridge University Press.

Biermann, F., & Kalfagianni, A. (2020). Planetary justice: A research framework. Earth System Governance, 6, 100049.

Biermann, F., & Kanie, N. (2017). Conclusion: Key challenges for global governance through goals. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable development goals as governance innovation (pp. 295–309). The MIT Press.

Biermann, F., Kanie, N., & Kim, R. E. (2017). Global governance by goal-setting: The novel approach of the UN Sustainable Development Goals. Current Opinion in Environmental Sustainability, 26, 26–31. https://doi.org/10.1016/j.cosust.2017.01.010

Biermann, F., & Kim, R. E. (2020). Architectures of earth system governance: Setting the stage. In Architectures of earth system governance: Institutional complexity and structural transformation. Cambridge University Press.

Biermann, F., Pattberg, P., Asselt, H. van, & Zelli, F. (2009). The fragmentation of global governance architectures: A framework for analysis. Global Environmental Politics, 9(4), 14–40. https://doi.org/10.1162/glep.2009.9.4.14

Biermann, F., & Siebenhüner, B. (2009). The role and relevance of international bureaucracies: Setting the stage. In Managers of global change: The influence of international environmental bureaucracies (pp. 1–14). The MIT Press.

Biermann, R. (2008). Towards a theory of inter-organizational networking. The Review of International Organizations, 3(2), 151–177. https://doi.org/10.1007/s11558-007-9027-9

Biermann, R. (2017). The role of international bureaucracies. In The Palgrave handbook of inter-organizational relations in world politics (pp. 243–270). Palgrave Macmillan.

Biermann, R., & Koops, J. A. (2017). Studying relations among international organizations in world politics: Core concepts and challenges. In The Palgrave handbook of inter-organizational relations in world politics (pp. 1–46). Palgrave Macmillan.

Biesbroek, R., Badloe, S., & Athanasiadis, I. N. (2020). Machine learning for research on climate change adaptation policy integration: An exploratory UK case study. Regional Environmental Change, 20(3), 85. https://doi.org/10.1007/s10113-020-01677-8

Bill Gates in Quartz magazine. (2015). Bill Gates on the most important thing the UN has done in this century. https://qz.com/510680/bill-gates-united-nations-sustainable-development-goals

Birkland, T. A. (2007). Agenda setting in public policy. In F. Fischer, G. J. Miller, & M. S. Sidney (Eds.), Handbook of public policy analysis. Theory, politics and methods (pp. 89–104). CRC Press.

Bisbee, J. H., Hollyer, J. R., Rosendorff, P. B., & Vreeland, J. R. (2020). The Millennium Development Goals and education. In J. G. Kelly & B. A. Simmons (Eds.), The power of global performance indicators (pp. 375–408). Cambridge University Press.

Biscop, S., Francioni, F., Graham, K., Felício, T., Laurenti, J., & Tardy, T. (2005). The European Union and the UN: Partners in effective multilateralism (Chaillot Papers). Institute for Security Studies (ISS). https://www.iss.europa.eu/sites/default/files/EUISSFiles/cp078.pdf

Bisogno, M., Cuadrado-Ballesteros, B., Rossi, F. M., & Peña-Miguel, N. (2023). Sustainable development goals in public administrations: Enabling conditions in local governments. International Review of Administrative Sciences, 0(0), 1-20. https://doi.org/10.1177/00208523221146458

Bitzer, V., Francken, M., & Glasbergen, P. (2008). Intersectoral partnerships for a sustainable coffee chain: Really addressing sustainability or just picking (coffee) cherries? Global Environmental Change, 18(2), 271–284. https://doi.org/10.1016/j.gloenvcha.2008.01.002

Bjola, C., Cassidy, J., & Manor, I. (2019). Public diplomacy in the digital age. The Hague Journal of Diplomacy, 14(1–2), 83–101. https://doi.org/10.1163/1871191x-14011032

Blattert, C., Eyvindson, K., Hartikainen, M., Burgas, D., Potterf, M., Lukkarinen, J., Snäll, T., Toraño-Caicoya, A., & Mönkkönen, M. (2022). Sectoral policies cause incoherence in forest man-

agement and ecosystem service provisioning. Forest Policy and Economics, 136, 102689. https://doi.org/10.1016/j.forpol.2022.102689

Blondel, V. D., Guillaume, J.-L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. Journal of Statistical Mechanics: Theory and Experiment, 2008(10), P10008. https://doi.org/10.1088/1742-5468/2008/10/p10008

Boas, I., Biermann, F., & Kanie, N. (2016). Cross-sectoral strategies in global sustainability governance: Towards a nexus approach. International Environmental Agreements: Politics, Law and Economics, 16(3), 449–464. https://doi.org/10.1007/s10784-016-9321-1

Bodansky, D. (2010). The Copenhagen Climate Change Conference: A postmortem. American Journal of International Law, 104(2), 230–240. https://doi.org/10.5305/amerjintelaw.104.2.0230

Bodansky, D. (2016). The legal character of the Paris Agreement. Review of European, Comparative & International Environmental Law, 25(2), 142–150. https://doi.org/10.1111/reel.12154

Bodin, Ö. (2017). Collaborative environmental governance: Achieving collective action in social-ecological systems. Science, 357(6352), eaan1114. https://doi.org/10.1126/science.aan1114

Bodin, Ö., & Crona, B. I. (2009). The role of social networks in natural resource governance: What relational patterns make a difference? Global Environmental Change, 19(3), 366–374. https://doi.org/10.1016/j.gloenvcha.2009.05.002

Bogdanor, V. (2005). Joined-up government (Vol. 5). Oxford University Press.

Böhmelt, T., & Spilker, G. (2016). The interaction of international institutions from a social network perspective. International Environmental Agreements: Politics, Law and Economics, 16(1), 67–89. https://doi.org/10.1007/s10784-014-9248-3

Borchardt, S., Buscaglia, D., Vignola, G. B., Maroni, M., & Marelli, L. (2020). A sustainable recovery for the EU: A text mining approach to map the EU Recovery Plan to the Sustainable Development Goals (JRC Science for Policy Report). European Commission.

Boréus, K., & Bergström, G. (2017). Analyzing text and discourse: Eight approaches for the social sciences. Sage.

Borgatti, S. P., & Halgin, D. S. (2011). On network theory. Organization Science, 22(5), 1168–1181. https://doi.org/10.1287/orsc.1100.0641

Bornemann, B., & Weiland, S. (2021). The UN 2030 Agenda and the quest for policy integration: A literature review. Politics and Governance, 9(1), 96–107. https://doi.org/10.17645/pag.v9i1.3654

Bose, S., & Khan, H. Z. (2022). Sustainable development goals (SDGs) reporting and the role of country-level institutional factors: An international evidence. Journal of Cleaner Production, 335, 130290. https://doi.org/10.1016/j.jclepro.2021.130290

Bowen, K. J., Cradock-Henry, N. A., Koch, F., Patterson, J., Häyhä, T., Vogt, J., & Barbi, F. (2017). Implementing the "Sustainable Development Goals": Towards addressing three key governance challenges - collective action, trade-offs, and accountability. Current Opinion in Environmental Sustainability, 26, 90–96. https://doi.org/10.1016/j.cosust.2017.05.002

Bradley, C. G. (2015). International organizations and the production of indicators: The case of freedom house. In S. E. Merry, K. E. Davis, & B. Kingsbury (Eds.), The quiet power of indicators: Measuring governance, corruption, and the rule of law (pp. 27–74). Cambridge University Press.

Brandi, C. (2015). Safeguarding the earth system as a priority for sustainable development and global ethics: the need for an earth system SDG. Journal of Global Ethics, 11(1), 32–36. https://doi.org/10.1080/17449626.2015.1006791

Breuer, A., Janetschek, H., & Malerba, D. (2019). Translating Sustainable Development Goal (SDG) interdependencies into policy advice. Sustainability, 11(7), 2092. https://doi.org/10.3390/su11072092

Breuer, A., & Leininger, J. (2021). Horizontal accountability for SDG implementation: A comparative cross-national analysis of emerging national accountability regimes. Sustainability, 13(13), 7002. https://doi.org/10.3390/su13137002

Breuer, A., Leininger, J., & Tosun, J. (2019). Integrated policymaking: Choosing an institutional design for implementing the Sustainable Development Goals (SDGs). Discussion Paper.

Breuer, A., & Spring, U. O. (2020). The 2030 Agenda as agenda setting event for water governance? Evidence from the Cuautla river basin in Morelos and Mexico. Water, 12(2), 314. https://doi.org/10.3390/w12020314

Bridgewater, P., Kim, R. E., & Bosselmann, K. (2014). Ecological integrity: A relevant concept for international environmental law in the Anthropocene? Yearbook of International Environmental Law, 25(1), 61–78. https://doi.org/10.1093/yiel/yvv059

Broek, O. M., & Klingler-Vidra, R. (2021). The UN Sustainable Development Goals as a North Star: How an intermediary network makes, takes, and retrofits the meaning of the Sustainable Development Goals. Regulation & Governance. https://doi.org/10.1111/rego.12415

Brosig, M. (2011). Overlap and interplay between international organisations: theories and approaches. South African Journal of International Affairs, 18(2), 147–167. https://doi.org/10.1080/10220461.2011.588828

Brown, H. C. P., Nkem, J. N., Sonwa, D. J., & Bele, Y. (2010). Institutional adaptive capacity and climate change response in the Congo Basin forests of Cameroon. Mitigation and Adaptation Strategies for Global Change, 15(3), 263–282. https://doi.org/10.1007/s11027-010-9216-3

Brügger, N. (2013). Historical network analysis of the web. Social Science Computer Review, 31(3), 306–321. https://doi.org/10.1177/0894439312454267

Brunnée, J. (2002). COPing with consent: Law-making under multilateral environmental agreements. Leiden Journal of International Law, 15(1), 1–52. https://doi.org/10.1017/s0922156502000018

Bruns, A., & Burgess, J. (2011). The use of Twitter hashtags in the formation of ad hoc publics. Proceedings of the 6th European Consortium for Political Research (ECPR) General Conference 2011, 1–9.

Burchi, F., Scarlato, M., & d'Agostino, G. (2018). Addressing food insecurity in sub- Saharan Africa: The role of cash transfers. Poverty & Public Policy, 10(4), 564–589. https://doi.org/10.1002/pop4.233

Burt, R. S. (2004). Structural holes and good ideas. American Journal of Sociology, 110(2), 349–399. https://doi.org/10.1086/421787

Busch, P., & Jörgens, H. (2005). International patterns of environmental policy change and convergence. European Environment, 15(2), 80–101. https://doi.org/10.1002/eet.374

Butchart, S. H. M., Walpole, M., Collen, B., Strien, A. van, Scharlemann, J. P. W., Almond, R. E. A., Baillie, J. E. M., Bomhard, B., Brown, C., Bruno, J., Carpenter, K. E., Carr, G. M., Chanson, J., Chenery, A. M., Csirke, J., Davidson, N. C., Dentener, F., Foster, M., Galli, A., … Watson, R. (2010). Global biodiversity: Indicators of recent declines. Science, 328(5982), 1164–1168. https://doi.org/10.1126/science.1187512

Candel, J. J. L., & Biesbroek, R. (2016). Toward a processual understanding of policy integration. Policy Sciences, 49(3), 211–231. https://doi.org/10.1007/s11077-016-9248-y

Carant, J. B. (2017). Unheard voices: a critical discourse analysis of the Millennium Development Goals' evolution into the Sustainable Development Goals. Third World Quarterly, 38(1), 1–26. https://doi.org/10.1080/01436597.2016.1166944

Carpenter, C. (2007). Setting the advocacy agenda: Theorizing issue emergence and nonemergence in transnational advocacy networks. International Studies Quarterly, 51(1), 99–120. https://doi.org/10.1111/j.1468-2478.2007.00441.x

Carpenter, C., Duygulu, S., Montgomery, A. H., & Rapp, A. (2014). Explaining the advocacy agenda: Insights from the human security network. International Organization, 68(2), 449–470. https://doi.org/10.1017/s0020818313000453

Carrington, P. J., Scott, J., & Wasserman, S. (2005). Models and methods in social network analysis (Vol. 28). Cambridge University Press.

Carroll, C., & Noss, R. F. (2022). How percentage-protected targets can support positive biodiversity outcomes. Conservation Biology, 36(4), e13869. https://doi.org/10.1111/cobi.13869

Cavalett, O., & Cherubini, F. (2018). Contribution of jet fuel from forest residues to multiple Sustainable Development Goals. Nature Sustainability, 1(12), 799–807. https://doi.org/10.1038/s41893-018-0181-2

CBD. (2002). CBD/COP6/VI/26: Strategic plan for the Convention on Biological Diversity. https://www.cbd.int/decision/cop/?id=7200

CBD. (2008). CBD/COP/DEC/IX/24: Gender Plan of Action under the Convention on Biological Diversity. https://www.cbd.int/decisions/cop/9/24

CBD. (2016). CBD/COP/DEC/XIII/28: Indicators for the strategic plan for biodiversity 2011-2020 and the Aichi biodiversity targets. https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-28-en.pdf

CBD. (2020a). Global biodiversity outlook 5 – Summary for policy makers. Secretariat of the Convention on Biological Diversity. https://www.cbd.int/gbo5

CBD. (2020b). CBD/SBSTTA/24/3Add.1: Proposed indicators and monitoring approach for the post-2020 global biodiversity framework. https://www.cbd.int/doc/c/ddf4/06ce/f004afa32d48740b6c21ab98/sbstta-24-03-add1-en.pdf

CBD. (2022). CBD/COP/15/L.26: Monitoring framework for the Kunming-Montreal global biodiversity framework. https://www.cbd.int/doc/c/179e/aecb/592f67904bf07dca7d0971da/cop-15-l-26-en.pdf

Censoro, J., Rietig, K., & Long, G. (2020). Understanding learning in Asian Development Banks: Goals-based governance. GlobalGoals2020 symposium, Utrecht, NL.

Chandra, Y. S. (2019). Inductive coding. 91–106. https://doi.org/10.1007/978-981-13-3170-1_8

Chasek, P. S., & Downie, L. D. (2021). Global environmental politics. Routledge.

Chasek, P. S., & Wagner, L. M. (2016). Breaking the mold: a new type of multilateral sustainable development negotiation. International Environmental Agreements: Politics, Law and Economics, 16(3), 397–413. https://doi.org/10.1007/s10784-016-9320-2

Chasek, P. S., Wagner, L. M., Leone, F., Lebada, A., & Risse, N. (2016). Getting to 2030: Negotiating the post-2015 sustainable development agenda. Review of European, Comparative & International Environmental Law, 25(1), 5–14. https://doi.org/10.1111/reel.12149

Checkel, J. T. (1999). Norms, institutions, and national identity in contemporary Europe. International Studies Quarterly, 43(1), 84–114. https://doi.org/10.1111/0020-8833.00112

Chidozie, F., & Aje, O. O. (2017). International organizations and global governance agenda: SDGs as a paragon. Acta Universitatis Danubius. Relationes Internationales, 1(10).

Chimhowu, A. O., Hulme, D., & Munro, L. T. (2019). The 'New' national development planning and global development goals: Processes and partnerships. World Development, 120, 76–89. https://doi.org/10.1016/j.worlddev.2019.03.013

Christensen, T., & Lægreid, P. (2007). The whole-of-government approach to public sector reform. Public Administration Review, 67(6), 1059–1066.

Churchill, R. R., & Ulfstein, G. (2000). Autonomous institutional arrangements in multilateral environmental agreements: A little-noticed phenomenon in international law. American Journal of International Law, 94(4), 623–659. https://doi.org/10.2307/2589775

Clémençon, R. (2021). Is sustainable development bad for global biodiversity conservation? Global Sustainability, 4, e16. https://doi.org/10.1017/sus.2021.14

Collier, D., Seawright, J., & Munck, G. L. (2010). The quest for standards: King, Keohane and Verba's designing social inquiry. In D. Collier & H. E. Brady (Eds.), Rethinking social inquiry: Diverse tools, shared standards (pp. 21–50). Rowman & Littlefield.

Collste, D., Pedercini, M., & Cornell, S. E. (2017). Policy coherence to achieve the SDGs: Using integrated simulation models to assess effective policies. Sustainability Science, 12(6), 921–931. https://doi.org/10.1007/s11625-017-0457-x

Convention on Biological Diversity. (2015). SCBD/MPO/AF/ACO/fd/84780: Analysis of zero draft of the outcome document for the UN Summit to adopt the post-2015 development agenda. https://www.cbd.int/doc/notifications/2015/ntf-2015-070-post2015-en.pdf

Cooper, C. A. (2020). Public servants, anonymity, and political activity online: Bureaucratic neutrality in peril? International Review of Administrative Sciences, 86(3), 496–512. https://doi.org/10.1177/0020852318780452

Cordova, M. F., & Celone, A. (2019). SDGs and Innovation in the Business Context Literature Review. Sustainability, 11(24), 7043. https://doi.org/10.3390/su11247043

Cormier, B. (2018). Analyzing if and how international organizations contribute to the sustainable development goals: Combining power and behavior. Journal of Organizational Behavior, 39(5), 545–558. https://doi.org/10.1002/job.2163

Coscia, M., Hamaguchi, K., Pinglo, M. E., & Giuffrida, A. (2018). Mapping the international health aid community using web data. EPJ Data Science, 7(1), 12. https://doi.org/10.1140/epjds/s13688-018-0141-0

Coscia, M., Hausmann, R., & Hidalgo, C. A. (2013). The structure and dynamics of international development assistance. Journal of Globalization and Development, 3(2), 1–42. https://doi.org/10.1515/jgd-2012-0004

Costanza, R., Daly, L., Fioramonti, L., Giovannini, E., Kubiszewski, I., Mortensen, L. F., Pickett, K. E., Ragnarsdottir, K. V., Vogli, R. D., & Wilkinson, R. (2016). Modelling and measuring sustainable wellbeing in connection with the UN Sustainable Development Goals. Ecological Economics, 130, 350–355. https://doi.org/10.1016/j.ecolecon.2016.07.009

Craig, R. K., & Ruhl, J. B. (2019). New Realities Require New Priorities: Rethinking Sustainable Development Goals in the Anthropocene. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3401301

Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.). Sage Publications.

Croese, S., Oloko, M., Simon, D., & Valencia, S. C. (2021). Bringing the global to the local: The challenges of multi-level governance for global policy implementation in Africa. International Journal of Urban Sustainable Development, 13(3), 435-447.

Csardi, G., & Nepusz, T. (2006). The igraph software package for complex network research. InterJournal, Complex Systems, 1695. https://igraph.org

Cummings, S., Regeer, B., Haan, L., Zweekhorst, M., & Bunders, J. (2018). Critical discourse analysis of perspectives on knowledge and the knowledge society within the Sustainable Development Goals. Development Policy Review, 36(6), 727–742. https://doi.org/10.1111/dpr.12296

Cummings, S., Seferiadis, A., & Haan, L. (2019). Getting down to business? Critical discourse analysis of perspectives on the private sector in sustainable development. Sustainable Development, 28(4), 759–771. https://doi.org/10.1002/sd.2026

Cyert, R.M., & March, J.G. (1963). A behavioral theory of the firm. Blackwell Inc.: Englewood Cliffs, NJ, USA.

Dahl, A. L. (2012). Achievements and gaps in indicators for sustainability. Ecological Indicators, 17, 14–19. https://doi.org/10.1016/j.ecolind.2011.04.032

Davidson, O., Halsnæs, K., Huq, S., Kok, M., Metz, B., Sokona, Y., & Verhagen, J. (2003). The development and climate nexus: The case of sub-Saharan Africa. Climate Policy, 3(sup1), S97–S113. https://doi.org/10.1016/j.clipol.2003.10.007

Dawes, J. H. P. (2022). SDG interlinkage networks: Analysis, robustness, sensitivities, and hierarchies. World Development, 149, 105693. https://doi.org/10.1016/j.worlddev.2021.105693

Deacon, B. (2016). Assessing the SDGs from the point of view of global social governance. Journal of International and Comparative Social Policy, 32(2), 1–15. https://doi.org/10.1080/21699763.2016.1198266

Dellmuth, L. M., Gustafsson, M.-T., & Ece, K. (2020). Global adaptation governance: Explaining the governance responses of international organizations to new issue linkages. Environmental Science & Policy, 114, 204–215. https://doi.org/10.1016/j.envsci.2020.07.027

De Mayer, J. (2013). Towards a hyperlinked society: A critical review of link studies. New Media & Society, 15(5), 737–751. https://doi.org/10.1177/1461444812462851

Deschamps, R., Fritz, S., Lin, J., Milliga, I., & Ruest, N. (2019). The Cost of a WARC: Analyzing Web Archives in the Cloud. 2019 ACM/IEEE Joint Conference on Digital Libraries (JCDL).

Destatis. (2020). German national reporting platform on the SDG indicators (SDG-NRP): National data for UN-SDGs. http://sdg-indikatoren.de/en/

de Vos, M., & Treep, J. (2022). GitHub repository globalgoals. Utrecht University. https://github.com/UtrechtUniversity/global-goals

de Wit, D., Ostovar, A. L., Bauer, S., & Jinnah, S. (2020). International bureaucracies. In F. Biermann & R. E. Kim (Eds.), Architectures of earth system governance: Institutional complexity and structural transformation (pp. 57–74). Cambridge University Press.

Dickey, T. E. (2018). Lynx. https://lynx.invisible-island.net/lynx.html

di Lucia, L., Nilsson, L. J., Khan, J., & Slade, R. (2020). Knowledge of Sustainable Development Goal interactions for decision making – are current approaches fit for purpose? GlobalGoals2020 symposium. https://doi.org/10.31235/osf.io/seq8n

Dimitrov, R. S. (2019). Empty institutions in global environmental politics. International Studies Review, 22(3), 626–650. https://doi.org/10.1093/isr/viz029

Donoghue, D., & Khan, A. (2019). Achieving the SDGs and 'leaving no one behind.' Overseas Development Institute.

Dörgő, G., Sebestyén, V., & Abonyi, J. (2018). Evaluating the interconnectedness of the Sustainable Development Goals based on the causality analysis of sustainability indicators. Sustainability, 10(10), 3766. https://doi.org/10.3390/su10103766

Downie, C. (2020a). Steering global energy governance: Who governs and what do they do? Regulation & Governance. https://doi.org/10.1111/rego.12352

Downie, C. (2020b). Strategies for survival: The International Energy Agency's response to a new world. Energy Policy, 141, 111452. https://doi.org/10.1016/j.enpol.2020.111452

Downie, C. (2021). Competition, cooperation, and adaptation: The organizational ecology of international organizations in global energy governance. Review of International Studies, 1–21. https://doi.org/10.1017/s0260210521000267

Dryzek, J. S. (2005). The politics of the earth: Environmental discourses (2nd ed.). Oxford University Press; WorldCat.org.

Dryzek, J. S. (2014). Institutions for the Anthropocene: Governance in a changing earth system. British Journal of Political Science, 46(4), 937–956. https://doi.org/10.1017/s0007123414000453

Dubois, O., Faurès, J.-M., Felix, E., Flammini, A., Hoogeveen, J., Pluschke, L., Puri, M., & Ünver, O. (2014). The Water-Energy-Food Nexus: A new approach in support of food security and sustainable agriculture. Food and Agriculture Organization. https://www.fao.org/3/bl496e/bl496e.pdf

Dudley, N., Jonas, H., Nelson, F., Parrish, J., Pyhälä, A., Stolton, S., & Watson, J. E. M. (2018). The essential role of other effective area-based conservation measures in achieving big bold conservation targets. Global Ecology and Conservation, 15, e00424. https://doi.org/10.1016/j.gecco.2018.e00424

Duit, A., & Galaz, V. (2008). Governance and complexity: Emerging issues for governance theory. Governance, 21(3), 311–335. https://doi.org/10.1111/j.1468-0491.2008.00402.x

Duit, A., Galaz, V., Eckerberg, K., & Ebbesson, J. (2010). Governance, complexity, and resilience. Global Environmental Change, 20(3), 363–368. https://doi.org/10.1016/j.gloenvcha.2010.04.006

Dupont, C., & Skjold, A. (2022). Coordination Conundrum in the UN Development System: Solutions from Self-Managed Organizations. Global Perspectives, 3(1). https://doi.org/10.1525/gp.2022.57083

Duraiappah, A. K., & Bhardwaj, A. (2007). Measuring policy coherence among the MEAs and MDGs. International Institute for Sustainable Development (IISD).

Earth Negotiations Bulletin. (2022). Summary of the Geneva biodiversity conference: 14–29 March 2022. IISD Earth Negotiations Bulletin.

Easterly, W. (2009). How the Millennium Development Goals are unfair to Africa. World Development, 37(1), 26–35. https://doi.org/10.1016/j.worlddev.2008.02.009

Ecker-Ehrhardt, M. (2018a). International organizations "going public"? An event history analysis of public communication reforms 1950–2015. International Studies Quarterly, 62(4), 723–736. https://doi.org/10.1093/isq/sqy025

Ecker-Ehrhardt, M. (2018b). Self-legitimation in the face of politicization: Why international organizations centralized public communication. The Review of International Organizations, 13(4), 519–546. https://doi.org/10.1007/s11558-017-9287-y

Ecker-Ehrhardt, M. (2021). Building bridges or digging the trench? UN communication of the global compact for migration on Twitter. ECPR Joint Session of Workshops 2021.

Eckhard, S., & Ege, J. (2016). International bureaucracies and their influence on policy-making: A review of empirical evidence. Journal of European Public Policy, 23(7), 960–978. https://doi.org/10.1080/13501763.2016.1162837

Eilstrup-Sangiovanni, M. (2016). Global governance networks. In J. N. Victor, Alexander H. Montgomery, & Mark Lubell (Eds.), The Oxford handbook of political networks (pp. 659–714). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190228217.013.30

Eilstrup-Sangiovanni, M. (2020). Death of international organizations: The organizational ecology of intergovernmental organizations, 1815–2015. The Review of International Organizations, 15(2), 339–370. https://doi.org/10.1007/s11558-018-9340-5

Eilstrup-Sangiovanni, M., & Westerwinter, O. (2021). The global governance complexity cube: Varieties of institutional complexity in global governance. The Review of International Organizations, 1–30. https://doi.org/10.1007/s11558-021-09449-7

Elder, M., & Olsen, S. H. (2019). The design of environmental priorities in the SDGs. Global Policy, 10(S1), 70–82. https://doi.org/10.1111/1758-5899.12596

Elliott, L. (2005). The UN record on environmental governance: An assessment. In F. Biermann & S. Bauer (Eds.), A World Environment Organization: Solution or threat for effective international environmental governance? (pp. 27–56). Ashgate Publishing Ltd.

Elliott, L. (2017). Cooperation on transnational environmental crime: Institutional complexity matters. Review of European, Comparative & International Environmental Law, 26(2), 107–117. https://doi.org/10.1111/reel.12202

Engström, R. E., Collste, D., Cornell, S. E., Johnson, F. X., Carlsen, H., Jaramillo, F., Finnveden, G., Destouni, G., Howells, M., Weitz, N., Palm, V., & Fuso-Nerini, F. (2021). Succeeding at home and abroad: Accounting for the international spillovers of cities' SDG actions. Npj Urban Sustainability, 1(1), 18. https://doi.org/10.1038/s42949-020-00002-w

Engström, R. E., Destouni, G., Howells, M., Ramaswamy, V., Rogner, H., & Bazilian, M. (2019). Cross-scale water and land impacts of local climate and energy policy: A local Swedish analysis of selected SDG interactions. Sustainability, 11(7), 1847.

Ercan, S. A., & Marsh, D. (2016). Qualitative methods in political science. In H. Keman & J. J. Woldendorp (Eds.), Handbook of research methods and applications in political science (pp. 309–322). Edward Elgar Publishing.

Erdelen, W. R. (2020). Shaping the fate of life on earth: The post-2020 global biodiversity framework. Global Policy, 11(3), 347–359. https://doi.org/10.1111/1758-5899.12773

Espey, J., Walęcik, K., & Kühner, M. (2015). Follow-up and review of the SDGs: Fulfilling our commitments (Working Paper). Sustainable Development Solutions Network.

Fairclough, I., & Fairclough, N. (2013). Political discourse analysis: A method for advanced students. Routledge.

Fairclough, N. (1995). Critical discourse analysis: The critical study of language. Longman.

Falk, R. A. (1966). On the quasi-legislative competence of the General Assembly. American Journal of International Law, 60(4), 782–791.

Falkner, R. (2016). The Paris Agreement and the new logic of international climate politics. International Affairs, 92(5), 1107–1125. https://doi.org/10.1111/1468-2346.12708

Fanning, L., & Mahon, R. (2020). Governance of the global ocean commons: Hopelessly fragmented or fixable? Coastal Management, 48(6), 527-533.

Feeny, S. (2020). Transitioning from the MDGs to the SDGs: Lessons learnt? In S. A. Churchill (Ed.), Moving from the Millennium to the Sustainable Development Goals: Lessons and recommendations (pp. 343–351). Palgrave Macmillan.

Fehling, M., Nelson, B. D., & Venkatapuram, S. (2013). Limitations of the Millennium Development Goals: A literature review. Global public health, 8(10), 1109-1122. https://doi.org/10.1080/17441692.2013.845676

Feindt, P. H., & Weiland, S. (2018). Reflexive governance: Exploring the concept and assessing its critical potential for sustainable development. Introduction to the special issue. Journal of Environmental Policy & Planning, 20(6), 661–674. https://doi.org/10.1080/1523908x.2018.1532562

Feinerer, I., & Hornik, K. (2023). tm: Text mining package. https://CRAN.R-project.org/package=tm
Feinerer, I., Hornik, K., & Meyer, D. (2008). Text mining infrastructure in R. Journal of Statistical Software, 25(5), 1–54. https://doi.org/10.18637/jss.v025.i05
Fernández-Blanco, C. R., Burns, S. L., & Giessen, L. (2019). Mapping the fragmentation of the international forest regime complex: Institutional elements, conflicts and synergies. International Environmental Agreements: Politics, Law and Economics, 19(2), 187–205. https://doi.org/10.1007/s10784-019-09434-x
Finnemore, M. (1993). International organizations as teachers of norms: The UN Educational, Scientific, and Cutural Organization and science policy. International Organization, 47(4), 565–597. https://doi.org/10.1017/s0020818300028101
Finnemore, M., & Jurkovich, M. (2020). The politics of aspiration. International Studies Quarterly, 64(4), 759–769. https://doi.org/10.1093/isq/sqaa052
Fischer, J., Abson, D. J., Bergsten, A., Collier, N. F., Dorresteijn, I., Hanspach, J., Hylander, K., Schultner, J., & Senbeta, F. (2017). Reframing the food–biodiversity challenge. Trends in Ecology & Evolution, 32(5), 335–345. https://doi.org/10.1016/j.tree.2017.02.009
Fliervoet, J. M., Geerling, G. W., Mostert, E., & Smits, A. J. M. (2016). Analyzing collaborative governance through social network analysis: A case study of river management along the Waal river in the Netherlands. Environmental Management, 57(2), 355–367. https://doi.org/10.1007/s00267-015-0606-x
Florini, A., & Pauli, M. (2018). Collaborative governance for the Sustainable Development Goals. Asia & the Pacific Policy Studies, 5(3), 583–598. https://doi.org/10.1002/app5.252
Forestier, O., & Kim, R. E. (2020). Cherry-picking the Sustainable Development Goals: Goal prioritization by national governments and implications for global governance. Sustainable Development. https://doi.org/10.1002/sd.2082
Fox, J. A. (2015). Social accountability: What does the evidence really say? World Development, 72, 346–361.
Fox, J., & Weisberg, S. (2019). An R companion to applied regression. https://socialsciences.mcmaster.ca/jfox/Books/Companion/
Franck, T. M. (1990). The power of legitimacy among nations. Oxford University Press.
Freistein, K. (2017). The organisation effect of global development indicators – the case of the Sustainable Development Goals. Centre for Global Cooperation Research.
Freistein, K., Mahlert, B., Quack, S., & Unrau, C. (2022). Creating, challenging, and changing pathways for cooperation through imagination. In Imagining pathways for global cooperation (pp. 229-251). Edward Elgar Publishing.
Fukuda-Parr, S. (2010). Reducing inequality – the missing MDG: A content review of PRSPs and bilateral donor policy statements. IDS Bulletin, 41(1), 26–35. https://doi.org/10.1111/j.1759-5436.2010.00100.x
Fukuda-Parr, S. (2014). Global goals as a policy tool: Intended and unintended consequences. Journal of Human Development and Capabilities, 15(2–3), 118–131. https://doi.org/10.1080/19452829.2014.910180
Fukuda-Parr, S. (2016). From the Millennium Development Goals to the Sustainable Development Goals: Shifts in purpose, concept, and politics of global goal setting for development. Gender & Development, 24(1), 43–52. https://doi.org/10.1080/13552074.2016.1145895
Fukuda-Parr, S. (2019). Keeping out extreme inequality from the SDG agenda: The politics of indicators. Global Policy, 10(S1), 61–69. https://doi.org/10.1111/1758-5899.12602

Fukuda-Parr, S., & McNeill, D. (2019). Knowledge and politics in setting and measuring the SDGs: Introduction to special issue. Global Policy, 10(S1), 5–15. https://doi.org/10.1111/1758-5899.12604

Fukuda-Parr, S., Yamin, A. E., & Greenstein, J. (2014). The power of numbers: A critical review of Millennium Development Goal targets for human development and human rights. Journal of Human Development and Capabilities, 15(2–3), 105–117. https://doi.org/10.1080/19452829.2013.864622

Gaba, V., & Greve, H. R. (2019). Safe or profitable? The pursuit of conflicting goals. Organization Science, 30(4), 647-667. https://doi.org/10.1287/orsc.2018.1280

Gallemore, C., & Munroe, D. K. (2013). Centralization in the global avoided deforestation collaboration network. Global Environmental Change, 23(5), 1199–1210. https://doi.org/10.1016/j.gloenvcha.2013.04.004

Galli, A., Đurović, G., Hanscom, L., & Knežević, J. (2018). Think globally, act locally: Implementing the sustainable development goals in Montenegro. Environmental Science & Policy, 84, 159–169. https://doi.org/10.1016/j.envsci.2018.03.012

Gasper, D., Shah, A., & Tankha, S. (2019). The framing of sustainable consumption and production in SDG 12. Global Policy, 10(S1), 83–95. https://doi.org/10.1111/1758-5899.12592

Gee, J. P. (2011). How to do discourse analysis: A toolkit. Routledge.

Geerlings, H., & Stead, D. (2003). The integration of land use planning, transport and environment in European policy and research. Transport Policy, 10(3), 187–196. https://doi.org/10.1016/s0967-070x(03)00020-9

Gellers, J. C. (2016). Crowdsourcing global governance: Sustainable development goals, civil society, and the pursuit of democratic legitimacy. International Environmental Agreements: Politics, Law and Economics, 16(3), 415–432. https://doi.org/10.1007/s10784-016-9322-0

Georgeson, L., & Maslin, M. (2018). Putting the UN Sustainable Development Goals into practice: A review of implementation, monitoring, and finance. Geo: Geography and Environment, 5(1), e00049. https://doi.org/10.1002/geo2.49

Georgi, F., & Schatral, S. (2012). Towards a critical theory of migration control: The case of the International Organization for Migration (IOM). In M. Geiger & A. Pécoud (Eds.), The new politics of international mobility: Migration management and its discontents. (pp. 193–221). IMIS Beiträge.

Gerring, J. (2007). Case study research: Principles and practices. Cambridge university press.

Gest, N., & Grigorescu, A. (2010). Interactions among intergovernmental organizations in the anti-corruption realm. The Review of International Organizations, 5(1), 53–72. https://doi.org/10.1007/s11558-009-9070-9

Giddings, B., Hopwood, B., & O'Brien, G. (2002). Environment, economy and society: Fitting them together into sustainable development. Sustainable Development, 10(4), 187–196. https://doi.org/10.1002/sd.199

Glasbergen, P., Biermann, F., & Mol, A. P. J. (2007). Partnerships, governance and sustainable development: Reflections on theory and practice. Edward Elgar.

Goldsmith, J. L., & Posner, E. A. (2005). The limits of international law. Oxford University Press.

Gomez, C. J., & Parigi, P. (2015). The regionalization of intergovernmental organization networks: A non-linear process. Social Networks, 43, 192–203. https://doi.org/10.1016/j.socnet.2015.03.007

Goritz, A., Jörgens, H., & Kolleck, N. (2021). Interconnected bureaucracies? Comparing online and offline networks during global climate negotiations. International Review of Administrative Sciences, 002085232110228. https://doi.org/10.1177/00208523211022823

Goritz, A., Schuster, J., Jörgens, H., & Kolleck, N. (2020). International public administrations on Twitter: A comparison of digital authority in global climate policy. Journal of Comparative Policy Analysis: Research and Practice, 1–25. https://doi.org/10.1080/13876988.2020.1824548

Gottenhuber, S., & Mulholland, E. (2020). Implementing the sustainable development goals in times of rising right-wing populism in Europe. Sustainability, 12(20), 8465.

Gray, B. (2008). Intervening to improve inter-organizational partnerships. In S. Cropper, C. Huxham, M. Ebers, & P. S. Ring (Eds.), The Oxford handbook of inter-organizational relations. Oxford University Press.

Green, J. F. (2013). Order out of chaos: Public and private rules for managing carbon. Global Environmental Politics, 13(2), 1–25. https://doi.org/10.1162/glep_a_00164

Green, J. F. (2021). Hierarchy in regime complexes: Understanding authority in Antarctic governance. International Studies Quarterly. https://doi.org/10.1093/isq/sqab084

Greenhill, B. (2020). How can international organizations shape public opinion? Analysis of a pair of survey-based experiments. The Review of International Organizations, 15(1), 165–188. https://doi.org/10.1007/s11558-018-9325-4

Greenhill, B., & Lupu, Y. (2017). Clubs of clubs: Fragmentation in the network of intergovernmental organizations. International Studies Quarterly, 61(1), 181–195. https://doi.org/10.1093/isq/sqx001

Gregorio, M. D., Nurrochmat, D. R., Paavola, J., Sari, I. M., Fatorelli, L., Pramova, E., Locatelli, B., Brockhaus, M., & Kusumadewi, S. D. (2017). Climate policy integration in the land use sector: Mitigation, adaptation and sustainable development linkages. Environmental Science & Policy, 67, 35–43. https://doi.org/10.1016/j.envsci.2016.11.004

Griggs, D., Smith, M. S., Rockström, J., Öhman, M., Gaffney, O., Glaser, G., Kanie, N., Noble, I., Steffen, W., & Shyamsundar, P. (2014). An integrated framework for Sustainable Development Goals. Ecology and Society, 19(4). https://doi.org/10.5751/es-07082-190449

Grover, P., Kar, A. K., Gupta, S., & Modgil, S. (2021). Influence of political leaders on Sustainable Development Goals – insights from Twitter. Journal of Enterprise Information Management. https://doi.org/10.1108/jeim-07-2020-0304

Gupta, J., & Nilsson, M. (2017). Toward a multi-level action framework for Sustainable Development Goals. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 275–294). The MIT Press.

Gupta, J., & Vegelin, C. (2016). Sustainable development goals and inclusive development. International Environmental Agreements: Politics, Law and Economics, 16(3), 433–448. https://doi.org/10.1007/s10784-016-9323-z

Gurciullo, S., & Mikhaylov, S. (2017). Detecting policy preferences and dynamics in the UN general debate with neural word embeddings. ArXiv. https://doi.org/10.48550/arxiv.1707.03490

Gustafsson, S., & Ivner, J. (2018). Implementing the global Sustainable Development Goals (SDGs) into municipal strategies: Applying an integrated approach. In W. Leal Filho (Ed.), Handbook of Sustainability Science and Research (pp. 301–316). Springer. https://doi.org/10.1007/978-3-319-63007-6_18

Gutner, T., & Thompson, A. (2010). The politics of IO performance: A framework. The review of international organizations, 5, 227-248. https://doi.org/10.1007/s11558-010-9096-z

Haack, K., Karns, M. P., & Murray, J.-P. (2022). From Aspiration to Commitment. Global Governance: A Review of Multilateralism and International Organizations, 28(2), 155–179. https://doi.org/10.1163/19426720-02802003

Haas, E. B. (1980). Why Collaborate? Issue-Linkage and International Regimes. World Politics, 32(3), 357–405. https://doi.org/10.2307/2010109

Haas, P. M. (1992). Introduction: epistemic communities and international policy coordination. International organization, 46(1), 1-35.

Haas, P. M., Andresen, S., & Kanie, N. (2013). Introduction: Actor configurations and global environmental governance. In Improving global environmental governance (pp. 15--44). Routledge.

Haas, P. M., & Haas, E. B. (1995). Learning to learn: Improving international governance. Global Governance, 1, 255.

Haas, P. M., & Ivanovskis, N. (2022). Prospects for implementing the SDGs. Current Opinion in Environmental Sustainability, 56, 101176.

Haas, P. M., & Stevens, C. (2017). Ideas, beliefs, and policy linkages: Lessons from food, water, and energy policies. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 137–164). The MIT Press.

Hafner-Burton, E. M., Kahler, M., & Montgomery, A. H. (2009). Network analysis for international relations. International Organization, 63(3), 559–592. https://doi.org/10.1017/s0020818309090195

Hailu, D., & Tsukada, R. (2011). Achieving the Millennium Development Goals: A measure of progress. International Policy Centre for Inclusive Growth.

Hajer, M., Nilsson, M., Raworth, K., Bakker, P., Berkhout, F., Boer, Y. de, Rockström, J., Ludwig, K., & Kok, M. (2015). Beyond cockpit-ism: Four insights to enhance the transformative potential of the Sustainable Development Goals. Sustainability, 7(2), 1651–1660. https://doi.org/10.3390/su7021651

Hajer, M., & Versteeg, W. (2005). A decade of discourse analysis of environmental politics: Achievements, challenges, perspectives. Journal of Environmental Policy & Planning, 7(3), 175–184. https://doi.org/10.1080/15239080500339646

Halavais, A. (2008). The hyperlink as organizing principle. In The hyperlinked society: Questioning connections in the digital age. (pp. 39–55). University of Michigan Press.

Hall, N. (2015). Money or mandate? Why international organizations engage with the climate change regime. Global Environmental Politics, 15(2), 79–97. https://doi.org/10.1162/glep_a_00299

Hall, N. (2016). Displacement, development, and climate change: International organizations moving beyond their mandates. Routledge.

Hamiche, A. M., Stambouli, A. B., & Flazi, S. (2016). A review of the water-energy nexus. Renewable and Sustainable Energy Reviews, 65, 319–331. https://doi.org/10.1016/j.rser.2016.07.020

Hanf, K., & Scharpf, F. W. (1978). Interorganizational policy making: Limits to coordination and central control. Sage Publications.

Harrington, A. R. (2020). Global governance and the Sustainable Development Goals. In Achieving the Sustainable Development Goals: Global governance challenges. Routledge.

Harrison, A., & McMillan, M. (2007). On the links between globalization and poverty. The Journal of Economic Inequality, 5(1), 123–134. https://doi.org/10.1007/s10888-006-9041-9

Harrop, S. R., & Pritchard, D. J. (2011). A hard instrument goes soft: The implications of the Convention on Biological Diversity's current trajectory. Global Environmental Change, 21(2), 474–480. https://doi.org/10.1016/j.gloenvcha.2011.01.014

Harvey, R. (2020). Twitter reactions to the UN's #HeForShe campaign for gender equality: A corpus-based discourse analysis. Journal of Corpora and Discourse Studies, 3(0), 31–50. https://doi.org/10.18573/jcads.12

Häussler, T., Adam, S., Schmid-Petri, H., & Reber, U. (2017). How political conflict shapes online spaces: A comparison of climate change hyperlink networks in the United States and Germany. International Journal of Communication.

Hayes, A. L., & Scott, T. A. (2018). Multiplex network analysis for complex governance systems using surveys and online behavior. Policy Studies Journal, 46(2), 327–353. https://doi.org/10.1111/psj.12210

Hege, E., & Demailly, D. (2018). NGO mobilisation around the SDGs (Studies N° 01/18). Institut du développement durable et des relations internationales (IDDRI).

Heidingsfelder, J., & Beckmann, M. (2020). A governance puzzle to be solved? A systematic literature review of fragmented sustainability governance. Management Review Quarterly, 70(3), 355–390. https://doi.org/10.1007/s11301-019-00170-9

Held, D., & Young, K. (2013). Global governance in crisis? Fragmentation, risk and world order. International Politics, 50(3), 309–332. https://doi.org/10.1057/ip.2013.9

Heras-Saizarbitoria, I., Urbieta, L., & Boiral, O. (2021). Organizations' engagement with sustainable development goals: From cherry-picking to SDG-washing? Corporate Social Responsibility and Environmental Management. https://doi.org/10.1002/csr.2202

Hernández-Orozco, E., Lobos-Alva, I., Cardenas-Vélez, M., Purkey, D., Nilsson, M., & Martin, P. (2022). The application of soft systems thinking in SDG interaction studies: a comparison between SDG interactions at national and subnational levels in Colombia. Environment, Development and Sustainability, 24(6), 8930–8964. https://doi.org/10.1007/s10668-021-01808-z

Hickel, J. (2019). The contradiction of the sustainable development goals: Growth versus ecology on a finite planet. Sustainable Development, 27(5), 873–884. https://doi.org/10.1002/sd.1947

Hickmann, T. (2021). Locating cities and their governments in multi-level sustainability governance. Politics and Governance, 9(1), 211–220.

Hill, P. S., Mansoor, G. F., & Claudio, F. (2010). Conflict in least-developed countries: Challenging the Millennium Development Goals. Bulletin of the World Health Organization, 8(88), 562–562.

Hirons, M. (2020). How the Sustainable Development Goals risk undermining efforts to address environmental and social issues in the small-scale mining sector. Environmental Science & Policy, 114, 321–328. https://doi.org/10.1016/j.envsci.2020.08.022

HLP. (2013). A new global partnership: Eradicate poverty transform economies through sustainable development (Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda). UN Publications.

Honniball, A., & Spijkers, O. (2014). MDGs and SDGs – Lessons learnt from global public participation in the drafting of the UN development goals. Vereinte Nationen: German Review of the UN, 6(62), 251–256.

Horn, P., & Grugel, J. (2018). The SDGs in middle-income countries: Setting or serving domestic development agendas? Evidence from Ecuador. World Development, 109, 73–84. https://doi.org/10.1016/j.worlddev.2018.04.005

Horne, J., Recker, M., Michelfelder, I., Jay, J., & Kratzer, J. (2020). Exploring entrepreneurship related to the sustainable development goals - mapping new venture activities with semi-automated content analysis. Journal of Cleaner Production, 242, 118052. https://doi.org/10.1016/j.jclepro.2019.118052

Horvath, S.-M., Muhr, M. M., Kirchner, M., Toth, W., Germann, V., Hundscheid, L., Vacik, H., Scherz, M., Kreiner, H., Fehr, F., Borgwardt, F., Gühnemann, A., Becsi, B., Schneeberger, A., & Gratzer, G. (2022). Handling a complex agenda: A review and assessment of methods to

analyse SDG entity interactions. Environmental Science & Policy, 131, 160–176. https://doi.org/10.1016/j.envsci.2022.01.021

Hsu, C.-I., & Park, H. W. (2011). Sociology of hyperlink networks of web 1.0, web 2.0, and Twitter: A case study of South Korea. Social Science Computer Review, 3(29), 354–368.

Hu, Y., Ye, X., & Shaw, S.-L. (2017). Extracting and analyzing semantic relatedness between cities using news articles. International Journal of Geographical Information Science, 31(12), 2427–2451. https://doi.org/10.1080/13658816.2017.1367797

Huck, W., & Kurkin, C. (2018). The UN Sustainable Development Goals (SDGs) in the transnational multilevel system. Heidelberg Journal of International Law (HJIL)/ Zeitschrift Für Ausländisches Öffentliches Recht Und Völkerrecht (ZaöRV),

Hulme, D. (2010). Lessons from the making of the MDGs: Human development meets results-based management in an unfair world. IDS Bulletin, 41(1), 15–25. https://doi.org/10.1111/j.1759-5436.2010.00099.x

Hulse, M., Gürth, L., Kavsek, H., Stauber, V., Wegner, D., & Weinreich, J. (2018). Civil society engagement in regional governance: A network analysis in Southern Africa (No. 30; Discussion Paper). German Development Institute.

Hülsmann, S., & Ardakanian, R. (2018). Managing water, soil and waste resources to achieve sustainable development goals. UN University Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES).

Humpenöder, F., Popp, A., Bodirsky, B. L., Weindl, I., Biewald, A., Lotze-Campen, H., Dietrich, J. P., Klein, D., Kreidenweis, U., Müller, C., & others. (2018). Large-scale bioenergy production: How to resolve sustainability trade-offs? Environmental Research Letters, 13(2), 024011.

Huppmann, D., Kriegler, E., Krey, V., Riahi, K., Rogelj, J., Rose, S. K., Weyant, J., Bauer, N., Bertram, C., Bosetti, V., & others. (2018). IAMC 1.5 C scenario explorer and data hosted by IIASA. Integrated Assessment Modeling Consortium & International Institute for Applied Systems Analysis.

Ingram, P., & Torfason, M. T. (2010). Organizing the in-between: The population dynamics of network-weaving organizations in the global interstate network. Administrative Science Quarterly, 55(4), 577–605. https://doi.org/10.2189/asqu.2010.55.4.577

International Council for Science. (2017). A guide to SDG interactions: From science to implementation. International Council for Science. https://council.science/wp-content/uploads/2017/05/SDGs-Guide-to-Interactions.pdf

IPBES. (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. IPBES secretariat.

Isoaho, K., Gritsenko, D., & Mäkelä, E. (2021). Topic modeling and text analysis for qualitative policy research. Policy Studies Journal, 49(1), 300–324. https://doi.org/10.1111/psj.12343

Ivanova, M. (2013). Reforming the institutional framework for environment and sustainable development: Rio+20's subtle but significant impact. International Journal of Technology Management & Sustainable Development, 3(12), 211–231.

Jabbour, J., Keita-Ouane, F., Hunsberger, C., Sánchez-Rodríguez, R., Gilruth, P., Patel, N., Singh, A., Levy, M. A., & Schwarzer, S. (2012). Internationally agreed environmental goals: A critical evaluation of progress. Environmental Development, 3, 5–24. https://doi.org/10.1016/j.envdev.2012.05.002

Jacquet, J., & Jamieson, D. (2016). Soft but significant power in the Paris Agreement. Nature Climate Change, 6(7), 643–646. https://doi.org/10.1038/nclimate3006

Janoušková, S., Hák, T., & Moldan, B. (2018). Global SDGs assessments: Helping or confusing indicators? Sustainability, 10(5), 1540. https://doi.org/10.3390/su10051540

Jenkins, V. (2016). Gender and the Convention on Biological Diversity. In M. Faure (Ed.), Elgar encyclopedia of environmental law (pp. 331–345). Edward Elgar Publishing.

Jinnah, S. (2011). Marketing linkages: Secretariat governance of the climate-biodiversity interface. Global Environmental Politics, 11(3), 23–43. https://doi.org/10.1162/glep_a_00067

Jinnah, S. (2014). Post-treaty politics: Secretariat influence in global environmental governance. MIT Press.

Jochim, A. E., & May, P. J. (2010). Beyond subsystems: Policy regimes and governance. Policy Studies Journal, 38(2), 303–327. https://doi.org/10.1111/j.1541-0072.2010.00363.x

Jóhannsdóttir, A., Cresswell, I., & Bridgewater, P. (2010). The current framework for international governance of biodiversity: Is it doing more harm than good? Review of European Community & International Environmental Law, 19(2), 139–149. https://doi.org/10.1111/j.1467-9388.2010.00673.x

Johnson, T. (2016). Cooperation, co-optation, competition, conflict: International bureaucracies and non-governmental organizations in an interdependent world. Review of International Political Economy, 23(5), 1–31. https://doi.org/10.1080/09692290.2016.1217902

Johnsson, F., Karlsson, I., Rootzén, J., Ahlbäck, A., & Gustavsson, M. (2020). The framing of a Sustainable Development Goals assessment in decarbonizing the construction industry: Avoiding "greenwashing." Renewable and Sustainable Energy Reviews, 131, 110029.

Jolly, R., Emmerij, L., & Weiss, T. (2009). UN ideas that changed the world. Indiana University Press.

Jordan, A. J., Huitema, D., Hildén, M., Asselt, H. van, Rayner, T. J., Schoenefeld, J. J., Tosun, J., Forster, J., & Boasson, E. L. (2015). Emergence of polycentric climate governance and its future prospects. Nature Climate Change, 5(11), 977. https://doi.org/10.1038/nclimate2725

Jordan, A. J., & Lenschow, A. (2010). Environmental policy integration: A state of the art review. Environmental Policy and Governance, 20(3), 147–158. https://doi.org/10.1002/eet.539

Jorgens, H., Kolleck, N., Saerbeck, B., & Well, M. (2017). Orchestrating (bio-)diversity: The secretariat of the Convention of Biological Diversity as an attention-seeking bureaucracy. In M. W. Bauer, Christoph Knill, & Steffen Eckhard (Eds.), International Bureaucracy: Challenges and Lessons for Public Administration Research (pp. 73--95). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-349-94977-9_4

Joyeeta Gupta, & Nilsson, Mans. (2017). Toward a Multi-level Action Framework for Sustainable Development Goals. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 275–294). The MIT Press.

Jungherr, A. (2014). Twitter in politics: A comprehensive literature review. https://ssrn.com/abstract=2402443

Kabeer, N. (2010). Can the MDGs provide a pathway to social justice? The challenge of intersecting inequalities. Institute of Development Studies and MDG Achievement Fund.

Kalfagianni, A., Partzsch, L., & Widerberg, O. (2020). Transnational institutions and networks. In F. Biermann & R. E. Kim (Eds.), Architectures of Earth System Governance: Institutional Complexity and Structural Transformation (pp. 75–96). Cambridge University Press.

Kamau, M., Chasek, P., & O'Connor, D. (2018). Transforming multilateral diplomacy: The inside story of the Sustainable Development Goals. Routledge.

Kanie, N., Bernstein, S., Biermann, F., & Haas, P. M. (2017). Introduction: Global governance through goal setting. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 1–27). The MIT Press.

Kanie, N., & Biermann, F. (2017). Governing through goals: Sustainable development goals as governance innovation. The MIT Press.

Kanie, N., Griggs, D., Young, O., Waddell, S., Shrivastava, P., Haas, P. M., Broadgate, W., Gaffney, O., & Kőrösi, C. (2019). Rules to goals: Emergence of new governance strategies for sustainable development. Sustainability Science, 14(6), 1745–1749. https://doi.org/10.1007/s11625-019-00729-1

Karlsson-Vinkhuyzen, S., Boelee, E., Cools, J., Hoof, L. van, Hospes, O., Kok, M., Peerlings, J., Tatenhove, J. van, Termeer, C. J. A. M., & Visseren-Hamakers, I. J. (2018). Identifying barriers and levers of biodiversity mainstreaming in four cases of transnational governance of land and water. Environmental Science & Policy, 85, 132–140. https://doi.org/10.1016/j.envsci.2018.03.011

Kearney, M. W. (2019). rtweet: Collecting and analyzing Twitter data. Journal of Open Source Software, 4(42), 1829. https://doi.org/10.21105/joss.01829

Kelly, R. A., Jakeman, A. J., Barreteau, O., Borsuk, M. E., ElSawah, S., Hamilton, S. H., Henriksen, H. J., Kuikka, S., Maier, H. R., Rizzoli, A. E., & others. (2013). Selecting among five common modelling approaches for integrated environmental assessment and management. Environmental Modelling & Software, 47, 159–181.

Keohane, R. O. (2011). Global governance and legitimacy. Review of International Political Economy, 18(1), 99–109. https://doi.org/10.1080/09692290.2011.545222

Kikstra, J. S., Mastrucci, A., Min, J., Riahi, K., & Rao, N. D. (2021). Decent living gaps and energy needs around the world. Environmental Research Letters, 16(9), 095006.

Kim, K., & Barnett, G. A. (2000). The structure of the international telecommunications regime in transition: A network analysis of international organizations. International Interactions, 26(1), 91–127. https://doi.org/10.1080/03050620008434962

Kim, N., & LaFleur, M. (2020). What does the UN "say" about global agenda? An exploration of trends using natural language processing for machine learning (No. 171; UN DESA Working Papers). UN Department of Economic and Social Affairs.

Kim, R. E. (2013). The emergent network structure of the multilateral environmental agreement system. Global Environmental Change, 23(5), 980–991. https://doi.org/10.1016/j.gloenvcha.2013.07.006

Kim, R. E. (2016). The nexus between international law and the Sustainable Development Goals. Review of European, Comparative & International Environmental Law, 25(1), 15–26. https://doi.org/10.1111/reel.12148

Kim, R. E. (2020). Is global governance fragmented, polycentric, or complex? The state of the art of the network approach. International Studies Review, 4(22), 903–931. https://doi.org/10.1093/isr/viz052

Kim, R. E. (2023). Augment the SDG indicator framework. Environmental Science & Policy, 142, 62–67. https://doi.org/10.1016/j.envsci.2023.02.004

Kim, R. E., Asselt, H. van, Kotzé, L. J., Vijge, M. J., & Biermann, F. (2020). Hierarchization. In F. Biermann & R. E. Kim (Eds.), Architectures of Earth System Governance: Institutional Complexity and Structural Transformation (pp. 275–296). Cambridge University Press.

Kim, R. E., & Bosselmann, K. (2013). International environmental law in the Anthropocene: Towards a purposive system of multilateral environmental agreements. Transnational Environmental Law, 2(2), 285–309. https://doi.org/10.1017/s2047102513000149

Kim, R. E., & Bosselmann, K. (2015). Operationalizing sustainable development: Ecological integrity as a Grundnorm of international law. Review of European, Comparative & International Environmental Law, 24(2), 194–208. https://doi.org/10.1111/reel.12109

Kim, R. E., & Morin, J.-F. (2021). Massive institutional structures in global governance. Global Environmental Politics, 21(3), 26–48. https://doi.org/10.1162/glep_a_00604

King, A. (2016). Science, politics and policymaking. EMBO Reports, 17(11), 1510–1512. https://doi.org/10.15252/embr.201643381

King, G., Keohane, R. O., & Verba, S. (1994). Descriptive inference. In Designing social inquiry (pp. 34–74). Princeton University Press.

Kingdom of the Netherlands. (2022). Voluntary National Review on the Sustainable Development Goals. https://hlpf.un.org/countries/netherlands/voluntary-national-review-2022

Knill, C., Steinbacher, C., & Steinebach, Y. (2020). Policy integration: Challenges for public administration. In Oxford Research Encyclopedia of Politics.

Köhler, G. (2011). The challenges of delivering as one: Overcoming fragmentation and moving towards policy coherence (International Labour Office, Policy Integration Department, Working Paper Series). ILO.

Kolleck, N., Well, M., Sperzel, S., & Jörgens, H. (2017). The power of social networks: How the UNFCCC secretariat creates momentum for climate education. Global Environmental Politics, 17(4), 106–126. https://doi.org/10.1162/glep_a_00428

Koops, J. A. (2017). Inter-organizationalism in international relations: A multilevel framework of analysis. In The Palgrave handbook of inter-organizational relations in world politics (pp. 189–216). Palgrave Macmillan.

Kornieieva, Y. (2020). Non-financial reporting challenges in monitoring SDG`s achievement: Investment aspects for transition economy. International Journal of Economics and Business Administration, 8(1).

Kotzé, L. J. (2014). Transboundary environmental governance of biodiversity in the Anthropocene. In L. J. Kotzé & T. Marauhn (Eds.), Transboundary governance of biodiversity (pp. 12–33). Martinus Nijhoff Publishers.

Kotzé, L. J., Kim, R. E., Burdon, P., Toit, L. du, Glass, L.-M., Kashwan, P., Liverman, D., Montesano, F. S., Rantala, S., Senit, C.-A., Treyer, S., & Calzadilla, P. V. (2022). Planetary integrity. In F. Biermann, T. Hickmann, & C.-A. Sénit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 140–171). Cambridge University Press.

Kraak, M. J., Ricker, B., & Engelhardt, Y. (2018). Challenges of mapping sustainable development goals indicators data. ISPRS International Journal of Geo-Information, 7(12), 482.

Krackhardt, D., & Stern, R. N. (1988). Informal networks and organizational crises: An experimental simulation. Social Psychology Quarterly, 51(2), 123. https://doi.org/10.2307/2786835

Krauss, J. E. (2022). Unpacking SDG 15, its targets and indicators: Tracing ideas of conservation. Globalizations, 1–16. https://doi.org/10.1080/14747731.2022.2035480

Krellenberg, K., Koch, F., Schubert, S., & Libbe, J. (2019). Einmal Transformation für alle, bitte! Kommunen, Stadtforschung, Forschungsförderung und die Umsetzung der SDGs. GAIA-Ecological Perspectives for Science and Society, 28(4), 337–341.

Kroll, C., Warchold, A., & Pradhan, P. (2019). Sustainable Development Goals (SDGs): Are we successful in turning trade-offs into synergies? Palgrave Communications, 5(1).

Kuhn, B. M. (2018). China's commitment to the Sustainable Development Goals: An analysis of push and pull factors and implementation challenges. Chinese Political Science Review, 3(4), 359–388. https://doi.org/10.1007/s41111-018-0108-0

Laberge, M., & Touihri, N. (2019). Can SDG 16 data drive national accountability? A cautiously optimistic view. Global Policy, 10(S1), 153–156. https://doi.org/10.1111/1758-5899.12607

Lafferty, W., & Hovden, E. (2003). Environmental policy integration: towards an analytical framework. Environmental Politics, 12(3), 1–22. https://doi.org/10.1080/0964401041233130825

LaFleur, M. (2019). Art is long, life is short: An SDG classification system for DESA publications. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3400135

Lafortune, G., Zoeteman, K., Fuller, G., Mulder, R., Dagevos, J., & Schmidt-Traub, G. (2019). The 2019 SDG index and dashboards report for European Cities (prototype version). Sustainable Development Solutions Network (SDSN) and the Brabant Center for Sustainable Development (Telos).

Lam, J. C. K., Cheung, L. Y. L., Wang, S., & Li, V. O. K. (2019). Stakeholder concerns of air pollution in Hong Kong and policy implications: A big-data computational text analysis approach. Environmental Science & Policy, 101, 374–382. https://doi.org/10.1016/j.envsci.2019.07.007

Lang, D. J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Swilling, M., & Thomas, C. J. (2012). Transdisciplinary research in sustainability science: Practice, principles, and challenges. Sustainability Science, 7, 25–43.

Lang, P. B., Gouveia, F. C., & Leta, J. (2013). Cooperation in health: Mapping collaborative networks on the web. PLoS ONE, 8(8), e71415. https://doi.org/10.1371/journal.pone.0071415

Langford, M. (2010). A poverty of rights: Six ways to fix the MDGs. IDS Bulletin, 1(41), 83–91. https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/7785

Langford, M., & Winkler, I. (2014). Muddying the Water? Assessing target-based approaches in development cooperation for water and sanitation. Journal of Human Development and Capabilities, 15(2–3), 247–260. https://doi.org/10.1080/19452829.2014.896321

Latham, G. P. (2003). Goal setting: A five-step approach to behavior change. Organizational Dynamics, 32(3), 309–318. https://doi.org/10.1016/s0090-2616(03)00028-7

Le Blanc, D. (2015). Towards integration at last? The Sustainable Development Goals as a network of targets. Sustainable Development, 23(3), 176–187. https://doi.org/10.1002/sd.1582

Lepenies, R., Büttner, L., Bärlund, I., Jax, K., Lyytimäki, J., Pedersen, A. B., Nielsen, H. Ø., Mosoni, C., Mille, R., Payen, G., & Richard, D. (2023). The politics of national SDG indicator systems: A comparison of four European countries. Ambio, 52(4), 743–756. https://doi.org/10.1007/s13280-022-01809-w

Lepore, W., Hall, B. L., & Tandon, R. (2021). The knowledge for change consortium: A decolonising approach to international collaboration in capacity-building in community-based participatory research. Canadian Journal of Development Studies/Revue Canadienne d'études Du Developpement, 42(3), 347–370.

Lieberson, S. (1991). Small N's and big conclusions: An examination of the reasoning in comparative studies based on a small number of cases. Social Forces, 70(2), 307–320.

Lin, J., Milligan, I., Wiebe, J., & Zhou, A. (2017). Warcbase: Scalable analytics infrastructure for exploring web archives. Journal on Computing and Cultural Heritage (JOCCH), 10(4), 22. https://doi.org/10.1145/3097570

Linder, F., Desmarais, B., Burgess, M., & Giraudy, E. (2020). Text as policy: Measuring policy similarity through bill text reuse. Policy Studies Journal, 48(2), 546–574. https://doi.org/10.1111/psj.12257

Lipson, M. (2010). Performance under ambiguity: International organization performance in UN peacekeeping. The Review of International Organizations, 5, 249-284. https://doi.org/10.1007/s11558-010-9090-5

Lipson, M. (2017). Organization theory and cooperation and conflict among international organizations. In R. Biermann, & J. A. Koops (Eds.), The Palgrave handbook of inter-organizational relations in world politics (pp. 67–96). Palgrave Macmillan.

Liu, J., Hull, V., Batistella, M., DeFries, R., Dietz, T., Fu, F., Hertel, T., Izaurralde, R. C., Lambin, E., Li, S., Martinelli, L., McConnell, W., Moran, E., Naylor, R., Ouyang, Z., Polenske, K., Reenberg, A.,

Rocha, G. de M., Simmons, C., … Zhu, C. (2013). Framing Sustainability in a Telecoupled World. Ecology and Society, 18(2). https://doi.org/10.5751/es-05873-180226

Liu, J., Hull, V., Godfray, H. C. J., Tilman, D., Gleick, P., Hoff, H., Pahl-Wostl, C., Xu, Z., Chung, M. G., Sun, J., & Li, S. (2018). Nexus approaches to global sustainable development. Nature Sustainability, 1(9), 466–476. https://doi.org/10.1038/s41893-018-0135-8

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. American Psychologist, 57(9), 705. https://doi.org/10.1037/0003-066x.57.9.705

Lodefalk, M., & Whalley, J. (2002). Reviewing proposals for a world environmental organisation. The World Economy, 25, 601–617.

Lubell, M., Jasny, L., & Hastings, A. (2017). Network governance for invasive species management. Conservation Letters, 10(6), 699–707. https://doi.org/10.1111/conl.12311

Lusseau, D., & Mancini, F. (2019). Income-based variation in Sustainable Development Goal interaction networks. Nature Sustainability, 2(3), 242–247. https://doi.org/10.1038/s41893-019-0231-4

Lynch, A., LoPresti, A., & Fox, C. (2019). 2019 US Cities sustainable development report. Sustainable Development Solutions Network.

Lyytimäki, J., Eckert, N., Lepenies, R., Mosoni, C., Mustajoki, J., & Pedersen, A. B. (2022). Assuming accuracy, pretending influence? Risks of measuring, monitoring and reporting Sustainable Development Goals. Ambio, 1–9. https://doi.org/10.1007/s13280-022-01787-z

MacFeely, S. (2018). The 2030 Agenda: An unprecedented statistical challenge. Friedrich Ebert Stiftung.

MacFeely, S. (2019). The big (data) bang: Opportunities and challenges for compiling SDG indicators. Global Policy, 10(S1), 121–133. https://doi.org/10.1111/1758-5899.12595

Machalaba, C., Romanelli, C., Stoett, P., Baum, S. E., Bouley, T. A., Daszak, P., & Karesh, W. B. (2015). Climate Change and Health: Transcending Silos to Find Solutions. Annals of Global Health, 81(3), 445–458. https://doi.org/10.1016/j.aogh.2015.08.002

Machingura, F., & Lally, S. (2017). The Sustainable Development Goals and their trade-offs. Overseas Development Institute.

Maggioni, M. A., & Uberti, T. E. (2009). Knowledge networks across Europe: Which distance matters? The Annals of Regional Science, 43(3), 691–720. https://doi.org/10.1007/s00168-008-0254-7

Mahoney, J., & Goertz, G. (2006). A tale of two cultures: Contrasting quantitative and qualitative research. Political Analysis, 14(3), 227–249.

Mainali, B., Luukkanen, J., Silveira, S., & Kaivo-oja, J. (2018). Evaluating synergies and trade-offs among Sustainable Development Goals (SDGs): Explorative analyses of development paths in South Asia and sub-Saharan Africa. Sustainability, 10(3), 815.

Maiya, A. S., & Rolfe, R. M. (2014). Topic Similarity Networks: Visual Analytics for Large Document Sets. 2014 IEEE International Conference on Big Data (Big Data), 364–372. https://doi.org/10.1109/bigdata.2014.7004253

Manor, I. (2016). What is digital diplomacy, and how is it practiced around the world? A brief introduction. The 2016 Annual Review of the Diplomatist Magazine.

Maoz, Z. (2012). How network analysis can inform the study of international relations. Conflict Management and Peace Science, 29(3), 247–256. https://doi.org/10.1177/0738894212443341

Margulis, M. E. (2017). The global governance of food security. In R. Biermann & J. Koops (Eds.), Palgrave handbook of inter-organizational relations in world politics (pp. 503–526).

May, P. J., Sapotichne, J., & Workman, S. (2006). Policy coherence and policy domains. Policy Studies Journal, 34(3), 381–403. https://doi.org/10.1111/j.1541-0072.2006.00178.x

Mazzucato, M. (2017). Mission-oriented innovation policy. UCL Institute for innovation and public purpose working paper, 1.

McNutt, K., & Pal, L. A. (2011). "Modernizing government": Mapping global public policy networks. Governance, 24(3), 439–467. https://doi.org/10.1111/j.1468-0491.2011.01532.x

Meijers, E., & Stead, D. (2004). Policy integration: What does it mean and how can it be achieved? A multi-disciplinary review. Berlin Conference on the Human Dimensions of Global Environmental Change: Greening of Policies-Interlinkages and Policy Integration, Berlin.

Mercure, J.-F., Paim, M. A., Bocquillon, P., Lindner, S., Salas, P., Martinelli, P., Berchin, I. I., Guerra, J. B. S. O. de A., Derani, C., Junior, C. L. de A., Ribeiro, J. M. P., Knobloch, F., Pollitt, H., Edwards, N. R., Holden, P. B., Foley, A., Schaphoff, S., Faraco, R. A., & Vinuales, J. E. (2019). System complexity and policy integration challenges: The Brazilian energy-water-food nexus. Renewable and Sustainable Energy Reviews, 105, 230–243. https://doi.org/10.1016/j.rser.2019.01.045

Merry, S. E. (2019). The Sustainable Development Goals confront the infrastructure of measurement. Global Policy, 10(S1), 146–148. https://doi.org/10.1111/1758-5899.12606

Messerli, P., Kim, E. M., Lutz, W., Moatti, J.-P., Richardson, K., Saidam, M., Smith, D., Eloundou-Enyegue, P., Foli, E., Glassman, A., Licona, G. H., Murniningtyas, E., Staniškis, J. K., Ypersele, J.-P. van, & Furman, E. (2019). Expansion of sustainability science needed for the SDGs. Nature Sustainability, 2(10), 892–894. https://doi.org/10.1038/s41893-019-0394-z

Meuleman, L., & Niestroy, I. (2015). Common but differentiated governance: A metagovernance approach to make the SDGs work. Sustainability, 7(9), 12295–12321. https://doi.org/10.3390/su70912295

Milewicz, K., Hollway, J., Peacock, C., & Snidal, D. (2018). Beyond trade: The expanding scope of the nontrade agenda in trade agreements. Journal of Conflict Resolution, 62(4), 743–773. https://doi.org/10.1177/0022002716662687

Mitchell, B. (2004). Integrated water resource management, institutional arrangements, and land-use planning. Environment and Planning A, 37(8), 1335–1352. https://doi.org/10.1068/a37224

Mitchell, R. B., Andonova, L. B., Axelrod, M., Balsiger, J., Bernauer, T., Green, J. F., Hollway, J., Kim, R. E., & Morin, J.-F. (2020). What we know (and could know) about international environmental agreements. Global Environmental Politics, 20(1), 103–121. https://doi.org/10.1162/glep_a_00544

Moltke, K. von. (2005). Clustering international environmental agreements as an alternative to a World Environment Organization. In F. Biermann & S. Bauer (Eds.), A World Environment Organization: Solution or threat for effective international environmental governance? Aldershot: Ashgate.

Montesano, F. S., Biermann, F., Kalfagianni, A., & Vijge, M. J. (2021). Can the Sustainable Development Goals green international organisations? Sustainability integration in the International Labour Organisation. Journal of Environmental Policy & Planning, 1–15. https://doi.org/10.1080/1523908x.2021.1976123

Montesano, F. S., Biermann, F., Kalfagianni, A., & Vijge, M. J. (2023). Balancing or prioritising for sustainable development? Perceptions of sustainability integration among professionals. Sustainable Development. https://doi.org/10.1002/sd.2493

Moock, P. R., & Leslie, J. (1986). Childhood malnutrition and schooling in the Terai region of Nepal. Journal of Development Economics, 20(1), 33–52. https://doi.org/10.1016/0304-3878(86)90004-0

Moranta, J., Torres, C., Murray, I., Hidalgo, M., Hinz, H., & Gouraguine, A. (2022). Transcending capitalism growth strategies for biodiversity conservation. Conservation Biology, 36(2), e13821. https://doi.org/10.1111/cobi.13821

Munck, G. L. (2005). Ten fallacies about qualitative research. Qualitative Methods, 3(1), 2–5.

Murdie, A. (2014). The ties that bind: A network analysis of human rights international non-governmental organizations. British Journal of Political Science, 44(1), 1–27. https://doi.org/10.1017/s0007123412000683

Naidoo, R., & Fisher, B. (2020). Reset sustainable development goals for a pandemic world. Nature, 583(7815), 198–201.

Najam, A., Christopoulou, I., & Moomaw, W. R. (2004). The emergent system of global environmental governance. Global Environmental Politics, 4(4), 23–35. https://doi.org/10.1162/glep.2004.4.4.23

Nam, Y., Barnett, G. A., & Kim, D. (2014). Corporate hyperlink network relationships in global corporate social responsibility system. Quality & Quantity, 48(3), 1225–1242. https://doi.org/10.1007/s11135-013-9831-7

Nanni, F. (2019). Collecting primary sources from web archives: A tale of scarcity and abundance. In N. Brügger, & I. Milligan (Eds.), The SAGE handbook of web history (pp. 112–124). SAGE Publications Ltd.

National Planning Commission. (2017). Nepal's Sustainable Development Goals baseline report June 2017. Government of Nepal.

Nature Editorial. (2020). Time to revise the Sustainable Development Goals. Nature, 583, 331–332.

Nepal in Data. (2020). Nepal in Data – SDGs: Find out data on Sustainable Development Goals (SDGs) of Nepal along with targets, indicators, and data and statistics. https://nepalindata.com/sdg/

NGO Federation of Nepal. (2020). Nepal civil society perspectives on the 2030 Agenda for Sustainable Development: CSOs' voluntary national review 2020. NGO Federation of Nepal.

Niestroy, I., & Meuleman, L. (2016). Teaching silos to dance: A condition to implement the SDGs. IISD SD Policy & Practice. Guest Article. http://sdg.iisd.org/commentary/guest-articles/teaching-silos-to-dance-a-condition-to-implement-the-sdgs/

Nilsson, M. (2004). Learning, frames, and environmental policy integration: The case of Swedish energy policy. Environment and Planning C: Government and Policy, 23(2), 207–226. https://doi.org/10.1068/c0405j

Nilsson, M., & Costanza, R. (2015). Overall framework for the Sustainable Development Goals. Review of Targets for the Sustainable Development Goals: The Science Perspective, p. 7. International Council for Science.

Nilsson, M., Griggs, D., & Visbeck, M. (2016). Policy: Map the interactions between Sustainable Development Goals. Nature News, 534(7607), 320. https://doi.org/10.1038/534320a

Nilsson, M., & Nilsson, L. J. (2005). Towards climate policy integration in the EU: Evolving dilemmas and opportunities. Climate Policy, 5(3), 363–376. https://doi.org/10.1080/14693062.2005.9685563

Nilsson, M., Pallemaerts, M., & Homeyer, I. von. (2009). International regimes and environmental policy integration: Introducing the special issue. International Environmental Agreements: Politics, Law and Economics, 9(4), 337. https://doi.org/10.1007/s10784-009-9108-8

Nilsson, M., & Persson, Å. (2017). Policy note: Lessons from environmental policy integration for the implementation of the 2030 Agenda. Environmental Science & Policy, 78, 36–39. https://doi.org/10.1016/j.envsci.2017.09.003

Nilsson, M., Vijge, M. J., Alva, I. L., Bornemann, B., Fernando, K., Hickmann, T., Scobie, M., & Weiland, S. (2022). Interlinkages, integration and coherence. In F. Biermann, T. Hickmann, & C.-A. Sénit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 92–115). Cambridge University Press.

Nilsson, M., Zamparutti, T., Petersen, J. E., Nykvist, B., Rudberg, P., & McGuinn, J. (2012). Understanding policy coherence: Analytical framework and examples of sector–environment policy interactions in the EU. Environmental Policy and Governance, 22(6), 395–423. https://doi.org/10.1002/eet.1589

Ningrum, D., Raven, R., Malekpour, S., Moallemi, E. A., & Bryan, B. A. (2023). Transformative potential in sustainable development goals engagement: Experience from local governance in Australia. Global Environmental Change, 80, 102670.

Nunan, F., Campbell, A., & Foster, E. (2012). Environmental mainstreaming: The organizational challenges of policy integration. Public Administration and Development, 32(3), 262–277. https://doi.org/10.1002/pad.1624

Obersteiner, M., Walsh, B., Frank, S., Havlík, P., Cantele, M., Liu, J., Palazzo, A., Herrero, M., Lu, Y., Mosnier, A., & others. (2016). Assessing the land resource-food price nexus of the Sustainable Development Goals. Science Advances, 2(9), e1501499.

Oberthür, S. (2009). Interplay management: Enhancing environmental policy integration among international institutions. International Environmental Agreements: Politics, Law and Economics, 9(4), 371. https://doi.org/10.1007/s10784-009-9109-7

Oberthür, S., & Stokke, O. S. (2011). Managing institutional complexity: Regime interplay and global environmental change. MIT Press.

OECD. (1999). Technology policy and the environment. Organisation for Economic Co-operation and Development, Paris. Accessed on 5 May 2023 via https://www.oecd.org/science/inno/1830589.pdf

OECD. (2001). Policies to enhance sustainable development: Meeting of the OECD council at Ministerial level. Organisation for Economic Co-operation and Development, Paris. Accessed on 5 May 2023 via https://www.oecd.org/greengrowth/1869800.pdf

OECD (2009), Policy Coherence for Development, in Managing Aid: Practices of DAC Member Countries, Organisation for Economic Co-operation and Development, Paris. Accessed on 5 May 2023 via https://doi.org/10.1787/9789264062689-3-en

OECD. (2015). Framework for policy coherence for sustainable development. Organisation for Economic Co-operation and Development, Paris. Accessed on 5 May 2023 via https://www.oecd.org/gov/pcsd/2015%20PCSD%20FRAMEWORK_Updated%20Oct2015.pdf

Okitasari, M., & Katramiz, T. (2022). The national development plans after the SDGs: Steering implications of the global goals towards national development planning. Earth System Governance, 12, 100136.

Olfe-Kräutlein, B. (2020). Advancing CCU technologies pursuant to the SDGs: A challenge for policy making. Frontiers in Energy Research, 8, 198.

Oliveira, L. de R. C. (2016). UN reform: Presenting and contextualizing the delivering as one UN initiative. 57th Annual Convention of the International Studies Association. https://doi.org/10.18356/bb51ac58-en

O'Neill, B. C., Carter, T. R., Ebi, K., Harrison, P. A., Kemp-Benedict, E., Kok, K., Kriegler, E., Preston, B. L., Riahi, K., Sillmann, J., & others. (2020). Achievements and needs for the climate change scenario framework. Nature Climate Change, 10(12), 1074–1084.

Orazbek, I., LaFleur, M. T., & Hsu, D. F. (2021). Improving SDG classification precision of topic models with combinatorial fusion algorithm. In 2021 IEEE Intl Conf on Dependable, Autonomic and

Secure Computing, Intl Conf on Pervasive Intelligence and Computing, Intl Conf on Cloud and Big Data Computing, Intl Conf on Cyber Science and Technology Congress (DASC/PiCom/CBDCom/CyberSciTech) (pp. 515-520). IEEE.

Ordóñez-Llanos, A., Raven, R., Bexell, M., Botchwey, B., Bornemann, B., Censoro, J., Christen, M., Díaz, L., Hickmann, T., Jönsson, K., Scholz, I., Scobie, M., Sun, Y., Thompson, J., Thwaites, J., & Yunita, A. (2022). Implementation at multiple levels. In F. Biermann, T. Hickmann, & C.-A. Senit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 59–91). Cambridge University Press.

Orsini, A. (2013). Multi-forum non-state actors: Navigating the regime complexes for forestry and genetic resources. Global Environmental Politics, 13(3), 34–55. https://doi.org/10.1162/glep_a_00182

Orsini, A., Prestre, P. L., Haas, P. M., Brosig, M., Pattberg, P., Widerberg, O., Gomez-Mera, L., Morin, J.-F., Harrison, N. E., Geyer, R., & Chandler, D. (2019). Forum: Complex systems and international governance. International Studies Review, 22(4), 1008–1038. https://doi.org/10.1093/isr/viz005

Oseland, S. E., & Haarstad, H. (2022). Displacing conflicting goals in planning for sustainability? Insights from three Norwegian cities. Planning Theory & Practice, 23(2), 233–247. https://doi.org/10.1080/14649357.2022.2034924

Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. Global Environmental Change, 20(4), 550–557. https://doi.org/10.1016/j.gloenvcha.2010.07.004

Otero, I., Farrell, K. N., Pueyo, S., Kallis, G., Kehoe, L., Haberl, H., Plutzar, C., Hobson, P., García-Márquez, J., Rodríguez-Labajos, B., Martin, J., Erb, K., Schindler, S., Nielsen, J., Skorin, T., Settele, J., Essl, F., Gómez-Baggethun, E., Brotons, L., … Pe'er, G. (2020). Biodiversity policy beyond economic growth. Conservation Letters, 13(4), e12713. https://doi.org/10.1111/conl.12713

PAGE. (2016). Integrated planning & sustainable development: Challenges and opportunities. Partnership for Action on Green Economy.

Papke, L. E., & Wooldridge, J. M. (1996). Econometric methods for fractional response variables with an application to 401(K) plan participation rates. Journal of Applied Econometrics, 11, 619–632.

Papke, L. E., & Wooldridge, J. M. (2008). Panel data methods for fractional response variables with an application to test pass rates. Journal of Econometrics, 145(1–2), 121–133. https://doi.org/10.1016/j.jeconom.2008.05.009

Park, H. W. (2003). Hyperlink network analysis: A new method for the study of social structure on the web. Connections, 1(25), 49–61.

Park, H. W., Kim, C.-S., & Barnett, G. A. (2004). Socio-communicational structure among political actors on the web in South Korea. New Media & Society, 6(3), 403–423. https://doi.org/10.1177/1461444804042522

Parks, L. (2017). Spaces for local voices? A discourse analysis of the decisions of the Convention on Biological Diversity. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3073052

Patel, Z., Greyling, S., Simon, D., Arfvidsson, H., Moodley, N., Primo, N., & Wright, C. (2017). Local responses to global sustainability agendas: Learning from experimenting with the urban sustainable development goal in Cape Town. Sustainability Science, 12(5), 785–797. https://doi.org/10.1007/s11625-017-0500-y

Pattberg, P. (2013). Fragmentation of global environmental governance architectures. IVM Institute for Environmental Studies.

Pattberg, P., & Widerberg, O. (2016). Transnational multistakeholder partnerships for sustainable development: Conditions for success. Ambio, 45(1), 42–51. https://doi.org/10.1007/s13280-015-0684-2

Pauls, S. D., & Cranmer, S. J. (2017). Affinity communities in UN voting: Implications for democracy, cooperation, and conflict. Physica A: Statistical Mechanics and Its Applications, 484. https://doi.org/10.1016/j.physa.2017.04.177

Pauwelyn, J. (2014). At the edge of chaos? Foreign investment law as a complex adaptive system, how it emerged and how it can be reformed. ICSID Review - Foreign Investment Law Journal, 29(2), 372–418. https://doi.org/10.1093/icsidreview/siu001

PBL. (2012). Roads from Rio 20. Pathways to achieve global sustainability goals by 2050. Planbureau voor de Leefomgeving/Netherlands Environmental Assessment Agency.

People's Republic of China. (2016). China's national plan on implementation of the 2030 Agenda for Sustainable Development. People's Republic of China.

Perez, O. (2005). Multiple regimes, issue linkage, and international cooperation: Exploring the role of the WTO. U. Pa. J. Int'l Econ. L., 26, 735.

Perez, O., & Stegmann, O. (2018). Transnational networked constitutionalism. Journal of Law and Society, 45, S135–S162. https://doi.org/10.1111/jols.12107

Persson, Å., Weitz, N., & Nilsson, M. (2016). Follow-up and review of the Sustainable Development Goals: Alignment vs. internalization. Review of European, Comparative & International Environmental Law, 25(1), 59–68. https://doi.org/10.1111/reel.12150

Pevehouse, J. C. W., Nordstron, T., McManus, R. W., & Jamison, A. S. (2020). Tracking organizations in the world: The correlates of war IGO version 3.0 datasets. Journal of Peace Research.

Pham-Truffert, M., Metz, F., Fischer, M., Rueff, H., & Messerli, P. (2020). Interactions among Sustainable Development Goals: Knowledge for identifying multipliers and virtuous cycles. Sustainable Development, 28(5), 1236–1250. https://doi.org/10.1002/sd.2073

Piatak, J., Romzek, B., LeRoux, K., & Johnston, J. (2018). Managing Goal Conflict in Public Service Delivery Networks: Does Accountability Move Up and Down, or Side to Side? Public Performance & Management Review, 41(1), 152–176. https://doi.org/10.1080/15309576.2017.1400993

Pickering, J., Coolsaet, B., Dawson, N., Suiseeya, K. M., Inoue, C. Y. A., & Lim, M. (2022). Rethinking and upholding justice and equity in transformative biodiversity governance. In I. J. Visseren-Hamakers & M. T. Kok (Eds.), Transforming biodiversity governance (pp. 155–178). Cambridge University Press.

Piguet, E. (2022). Linking climate change, environmental degradation, and migration: An update after 10 years. Wiley Interdisciplinary Reviews: Climate Change, 13(1). https://doi.org/10.1002/wcc.746

Pilař, L., Stanislavská, L. K., Pitrová, J., Krejčí, I., Tichá, I., & Chalupová, M. (2019). Twitter analysis of global communication in the field of sustainability. Sustainability, 11(24), 6958. https://doi.org/10.3390/su11246958

Pilny, A., & Shumate, M. (2012). Hyperlinks as extensions of offline instrumental collective action. Information, Communication & Society, 15(2), 260–286. https://doi.org/10.1080/1369118x.2011.606328

Pittman, J., & Armitage, D. (2019). Network governance of land-sea social-ecological systems in the Lesser Antilles. Ecological Economics, 157(Annu. Rev. Ecol. Evol. Syst. 42 2011), 61–70. https://doi.org/10.1016/j.ecolecon.2018.10.013

Pope Francis. (2015). Remarks from Pope Francis at summit for the adoption of the Post-2015 Development Agenda. Time magazine. Accessed on 5 May 2023 via https://time.com/4049905/pope-francis-us-visit-united-nations-speech-transcript/

Popp, A., Dietrich, J. P., Lotze-Campen, H., Klein, D., Bauer, N., Krause, M., Beringer, T., Gerten, D., & Edenhofer, O. (2011). The economic potential of bioenergy for climate change mitigation with special attention given to implications for the land system. Environmental Research Letters, 6(3), 034017.

Pradhan, P. (2019). Antagonists to meeting the 2030 Agenda. Nature Sustainability, 2(3), 171–172.

Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J. P. (2017). A systematic study of Sustainable Development Goal (SDG) interactions. Earth's Future, 5(11), 1169–1179. https://doi.org/10.1002/2017ef000632

Pradhan, P., Subedi, D. R., Khatiwada, D., Joshi, K. K., Kafle, S., Chhetri, R. P., Dhakal, S., Gautam, A. P., Khatiwada, P. P., Mainaly, J., & others. (2021). The COVID-19 pandemic not only poses challenges, but also opens opportunities for sustainable transformation. Earth's Future, 9(7), e2021EF001996.

Provan, K. G., & Kenis, P. (2008). Modes of network governance: Structure, management, and effectiveness. Journal of Public Administration Research and Theory, 2(2), 229–252. https://doi.org/10.1093/jopart/mum015

Putra, M. P. I. F., Pradhan, P., & Kropp, J. P. (2020). A systematic analysis of water-energy-food security nexus: A South Asian case study. Science of The Total Environment, 728, 138451.

Python Software Foundation. (2023). Python language, version 2.7 [computer software]. http://www.python.org

R Core Team. (2022). R: A language and environment for statistical computing [computer software]. https://www.R-project.org/

Ramalho, E. A., Ramalho, J. J. S., & Murteira, J. M. R. (2011). Alternative estimating and testing empirical strategies for fractional regression models. Journal of Economic Surveys, 25(1), 19–68. https://doi.org/10.1111/j.1467-6419.2009.00602.x

Ramalho, J. J. S. (2016). frm: Regression analysis of fractional responses. R package version 1.2.2. [computer software] https://CRAN.R-project.org/package=frm

Ramirez, M., Romero-Goyeneche, O., Schot, J., & Arroyave, F. (2019). Mobilizing the transformative power of the research system for achieving the Sustainable Development Goals. SPRU Working Paper Series, University of Sussex.

Rao, N. D., Sauer, P., Gidden, M., & Riahi, K. (2019). Income inequality projections for the shared socioeconomic pathways (SSPs). Futures, 105, 27–39.

Raszkowski, A., & Bartniczak, B. (2019). On the road to sustainability: Implementation of the 2030 Agenda Sustainable Development Goals (SDG) in Poland. Sustainability, 11(2), 366. https://doi.org/10.3390/su11020366

Raustiala, K. (2005). Form and substance in international agreements. American Journal of International Law, 99(3), 581–614. https://doi.org/10.2307/1602292

Reid, A. J., Brooks, J. L., Dolgova, L., Laurich, B., Sullivan, B. G., Szekeres, P., Wood, S. L. R., Bennett, J. R., & Cooke, S. J. (2017). Post-2015 Sustainable Development Goals still neglecting their environmental roots in the Anthropocene. Environmental Science & Policy, 77, 179–184. https://doi.org/10.1016/j.envsci.2017.07.006

Reinalda, B., & Verbeek, B. (2004). Decision making within international organizations (Vol. 31). Routledge.

Renaud, F. G., Zhou, X., Bosher, L., Barrett, B., & Huang, S. (2022). Synergies and trade-offs between sustainable development goals and targets: innovative approaches and new perspectives. Sustainability Science, 17(4), 1317–1322. https://doi.org/10.1007/s11625-022-01209-9

Rey, D., & Neuhäuser, M. (2014). International encyclopedia of statistical science. 1658–1659. https://doi.org/10.1007/978-3-642-04898-2_616

Reyes-Menendez, A., Saura, J. R., & Alvarez-Alonso, C. (2018). Understanding #WorldEnvironmentDay user opinions in Twitter: A topic-based sentiment analysis approach. International Journal of Environmental Research and Public Health, 15(11), 2537. https://doi.org/10.3390/ijerph15112537

Richardson, L. (2023). BeautifulSoup [computer software]. https://www.crummy.com/software/BeautifulSoup/

Riffe, D., Lacy, S., Watson, B. R., & Fico, F. (2019). Analyzing media messages: Using quantitative content analysis in research. Routledge.

Rodríguez-Pose, A. (2001). The role of the ILO in implementing local economic development strategies in a globalized world. Department of Geography and Environment, London School of Economics.

Roehrl, R. A., Montes, M. F., & Vos, R. (2014). Governments need to push for more energy efficient end-use technologies. UNDESA Policy Brief Series, 33.

Roldán-álvarez, D., Martínez-Martínez, F., Martín, E., & Haya, P. A. (2021). Understanding discussions of citizen science around Sustainable Development Goals in Twitter. IEEE Access, 9, 144106–144120. https://doi.org/10.1109/access.2021.3122086

Romero-Goyeneche, O. Y., Ramirez, M., Schot, J., & Arroyave, F. (2022). Mobilizing the transformative power of research for achieving the Sustainable Development Goals. Research Policy, 51(10), 104589. https://doi.org/10.1016/j.respol.2022.104589

Romero-Goyeneche, O. Y., Vis, J., Villasante, E. V. i de, Arroyave, F., Heimeriks, G., Laat, J. de, & Schot, J. (2021). Addressing the Sustainable Development Goals at Utrecht University. Utrecht University.

Ross, A., & Dovers, S. (2008). Making the harder yards: Environmental policy integration in Australia. Australian Journal of Public Administration, 67(3), 245–260. https://doi.org/10.1111/j.1467-8500.2008.00585.x

RStudio Team. (2020). RStudio: Integrated development for R. RStudio PBC [computer software]. http://www.rstudio.com/

Rudnick, J., Niles, M., Lubell, M., & Cramer, L. (2019). A comparative analysis of governance and leadership in agricultural development policy networks. World Development, 117(Economic Geography 79 4 2003), 112–126. https://doi.org/10.1016/j.worlddev.2018.12.015

Runhaar, H., Wilk, B., Driessen, P., Dunphy, N., Persson, Å., Meadowcroft, J., & Mullally, G. (2020). Policy integration. In F. Biermann & R. E. Kim (Eds.), Architectures of earth system governance: Institutional complexity and structural transformation (pp. 183–206). Cambridge University Press.

Russel, D. J., Uyl, R. M. den, & Vito, L. de. (2018). Understanding policy integration in the EU: Insights from a multi-level lens on climate adaptation and the EU's coastal and marine policy. Environmental Science & Policy, 82, 44–51. https://doi.org/10.1016/j.envsci.2017.12.009

Russell, E., & Kane, J. (2008). The missing link: Assessing the reliability of internet citations in history journals. Technology and Culture, 49(2), 420–429. https://doi.org/10.1353/tech.0.0028

Saban, D., Bonomo, F., & Stier-Moses, N. E. (2010). Analysis and models of bilateral investment treaties using a social networks approach. Physica A: Statistical Mechanics and Its Applications, 389(17), 3661–3673. https://doi.org/10.1016/j.physa.2010.04.001

Sachs, J. D. (2006). The end of poverty: Economic possibilities for our time. Penguin.
Sachs, J. D. (2012). From Millennium Development Goals to Sustainable Development Goals. The Lancet, 379(9832), 2206–2211. https://doi.org/10.1016/s0140-6736(12)60685-0
Sachs, J. D., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2020). Sustainable development report 2020. The Sustainable Development Goals and Covid-19. Cambridge University Press.
Sachs, J. D., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). Sustainable development report 2022. From crisis to sustainable development: The SDGs as roadmap to 2030 and beyond. Cambridge University Press.
Sachs, J. D., Schmidt-Traub, G., Kroll, C., Lafortune, G., & Fuller, G. (2018). SDG index and dashboards report 2018 (p. 479). Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).
Salleh, A. (2016). Climate, water, and livelihood skills: A post-development reading of the SDGs. Globalizations, 13(6), 1–8. https://doi.org/10.1080/14747731.2016.1173375
Salter-Townshend, M., White, A., Gollini, I., & Murphy, T. B. (2012). Review of statistical network analysis: models, algorithms, and software. Statistical Analysis and Data Mining, 5(4), 243-264.
Sanfeliú, M. B. de, Milan, S., Rodríguez, A., & Trigueros, M. de. (2020). The implementation process of the SDGs: Latin America regional survey. ISSN Occasional Paper Series, 68, 2307-9827. Southern Voice.
Sarwar, M. B., & Nicolai, S. (2018). What do analysis of Voluntary National Reviews for Sustainable Development Goals tell us about "leaving no one behind"? Overseas Development Institute.
Sayer, J., Margules, C., & McNeely, J. A. (2021). People and biodiversity in the 21st century. Ambio, 50(5), 970–975. https://doi.org/10.1007/s13280-020-01476-9
Saz-Carranza, A. (2015). Agents as brokers: Leadership in multilateral organizations. Global Policy, 6(3), 277–289. https://doi.org/10.1111/1758-5899.12248
Schmidt, N. M., & Fleig, A. (2018). Global patterns of national climate policies: Analyzing 171 country portfolios on climate policy integration. Environmental Science & Policy, 84, 177–185. https://doi.org/10.1016/j.envsci.2018.03.003
Schmidt-Traub, G., Karoubi, E. D. la M., & Espey, J. (2015). Indicators and a monitoring framework for the Sustainable Development Goals: Launching a data revolution for the SDGs. Sustainable Development Solutions Network.
Schmidt-Traub, G., Kroll, C., Teksoz, K., Durand-Delacre, D., & Sachs, J. D. (2017). National baselines for the Sustainable Development Goals assessed in the SDG Index and Dashboards. Nature Geoscience, 10(8), 547–555. https://doi.org/10.1038/ngeo2985
Schubert, S., & Gupta, J. (2013). Comparing global coordination mechanisms on energy, environment, and water. Ecology and Society, 18(2). https://doi.org/10.5751/es-05440-180222
Schultz, M., Tyrrell, T. D., & Ebenhard, T. (2016). The 2030 Agenda and ecosystems: A discussion paper on the links between the Aichi Biodiversity Targets and the Sustainable Development Goals. SwedBio at Stockholm Resilience Centre.
Schuster, J., Jörgens, H., & Kolleck, N. (2019). The rise of global policy networks in education: Analyzing Twitter debates on inclusive education using social network analysis. Journal of Education Policy, 36(2), 1–21. https://doi.org/10.1080/02680939.2019.1664768
Schwindenhammer, S., & Gonglach, D. (2021). SDG implementation through technology? Governing food-water-technology nexus challenges in urban agriculture. Politics and Governance, 9(1), 176–186.

Scobie, M. (2016). Policy coherence in climate governance in Caribbean small island developing states. Environmental Science & Policy, 58, 16–28. https://doi.org/10.1016/j.envsci.2015.12.008

Scobie, M. (2021). Treaty preambles and the environmental justice gap. Global Policy, 12(3), 273–285. https://doi.org/10.1111/1758-5899.12948

Sebestyén, V., Domokos, E., & Abonyi, J. (2020). Focal points for sustainable development strategies—Text mining-based comparative analysis of voluntary national reviews. Journal of Environmental Management, 263, 110414. https://doi.org/10.1016/j.jenvman.2020.110414

Secretary General of the UN Ban Ki-Moon. (2015). Remarks at summit for the adoption of the Post-2015 Development Agenda [Interview]. https://www.un.org/sg/en/content/sg/speeches/2015-09-25/remarks-summit-adoption-post-2015-development-agenda

Sénit, C.-A., Okereke, C., Alcazar, L., Banik, D., Lima, M. B., Biermann, F., Fambasayi, R., Hathie, I., Kronsell, A., Leonardsson, H., Niles, N., & Siegel, K. M. (2022). Inclusiveness. In F. Biermann, T. Hickmann, & C.-A. Sénit (Eds.), The political impact of the Sustainable Development Goals: Transforming governance through global goals? (pp. 116–139). Cambridge University Press.

Shaker, R. R. (2018). A mega-index for the Americas and its underlying sustainable development correlations. Ecological Indicators, 89, 466–479.

Shawoo, Z., Maltais, A., Dzebo, A., & Pickering, J. (2022). Political drivers of policy coherence for sustainable development: An analytical framework. Environmental Policy and Governance. https://doi.org/10.1002/eet.2039

Shumate, M. (2012). The evolution of the HIV/AIDS NGO hyperlink network. Journal of Computer-Mediated Communication, 17(2), 120–134. https://doi.org/10.1111/j.1083-6101.2011.01569.x

Shumate, M., & De Witt, L. (2008). The North/South divide in NGO hyperlink networks. Journal of Computer-Mediated Communication, 13(2), 405–428. https://doi.org/10.1111/j.1083-6101.2008.00402.x

Shumate, M., & Lipp, J. (2008). Connective collective action online: An examination of the hyperlink network structure of an NGO issue network. Journal of Computer-Mediated Communication, 14(1), 178–201. https://doi.org/10.1111/j.1083-6101.2008.01436.x

Siebenhüner, B. (2009). The biodiversity secretariat: Lean shark in troubled waters. In F. Biermann & B. Siebenhüner (Eds.), Managers of global change: The influence of international environmental bureaucracies (pp. 265–292). Cambridge, MA: The MIT Press.

Smith, T. B., Vacca, R., Mantegazza, L., & Capua, I. (2021). Natural language processing and network analysis provide novel insights on policy and scientific discourse around Sustainable Development Goals. Scientific Reports, 11(1), 22427. https://doi.org/10.1038/s41598-021-01801-6

Snilstveit, B., Stevenson, J., Menon, R., Phillips, D., Gallagher, E., Geleen, M., Stamp, M., Jobse, H., Schmidt, T., & Jimenez, E. (2016). The impact of education programmes on learning and school participation in low- and middle-income countries. International Initiative for Impact Evaluation (3ie).

Solberg, E. (2015). From MDGs to SDGs: The political value of common global goals. Harvard International Review, 37, 58–61.

Somanje, A. N., Mohan, G., Lopes, J., Mensah, A., Gordon, C., Zhou, X., Moinuddin, M., Saito, O., & Takeuchi, K. (2020). Challenges and potential solutions for sustainable urban-rural linkages in a Ghanaian context. Sustainability, 12(2), 507.

Sommerer, T., & Tallberg, J. (2019). Diffusion across international organizations: Connectivity and convergence. International Organization, 73(2), 399–433. https://doi.org/10.1017/s0020818318000450

Sopranzetti, S. (2018). Overlapping free trade agreements and international trade: A network approach. The World Economy, 41(6), 1549–1566. https://doi.org/10.1111/twec.12599

Spaiser, V., Ranganathan, S., Swain, R. B., & Sumpter, D. J. T. (2017). The sustainable development oxymoron: Quantifying and modelling the incompatibility of Sustainable Development Goals. International Journal of Sustainable Development & World Ecology, 24(6), 1–14. https://doi.org/10.1080/13504509.2016.1235624

Spangenberg, J. H. (2017). Hot air or comprehensive progress? A critical assessment of the SDGs. Sustainable Development, 25(4), 311–321. https://doi.org/10.1002/sd.1657

Spence, D. P., & Owens, K. C. (1990). Lexical co-occurrence and association strength. Journal of Psycholinguistic Research, 19(5), 317–330. https://doi.org/10.1007/bf01074363

Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M., & O'Connell, D. (2017). Integration: The key to implementing the Sustainable Development Goals. Sustainability Science, 12(6), 911–919. https://doi.org/10.1007/s11625-016-0383-3

Stein, C., Ernstson, H., & Barron, J. (2011). A social network approach to analyzing water governance: The case of the Mkindo catchment, Tanzania. Physics and Chemistry of the Earth, Parts A/B/C, 36(14–15), 1085–1092. https://doi.org/10.1016/j.pce.2011.07.083

Steinwand, M. C. (2015). Compete or coordinate? Aid fragmentation and lead donorship. International Organization, 69(2), 443–472. https://doi.org/10.1017/s0020818314000381

Stevens, C. (2017). Scales of integration for sustainable development governance. International Journal of Sustainable Development & World Ecology, 1–8. https://doi.org/10.1080/13504509.2017.1282893

Stevens, C., & Kanie, N. (2016). The transformative potential of the Sustainable Development Goals (SDGs). International Environmental Agreements: Politics, Law and Economics, 16(3), 393–396. https://doi.org/10.1007/s10784-016-9324-y

Stevenson, M., & Ben-David, A. (2019). Network analysis for web history. In N. Brügger, & I. Milligan (Eds.), The SAGE handbook of web history (pp. 125–137). SAGE Publications Ltd.

Stiglitz, J. E. (2006). Making globalisation work. Esri.

Stockholm Resilience Centre. (2016). The SDGs wedding cake. Stockholm Resilience Center. Accessed on 05 May 2023 via https://www.stockholmresilience.org/research/research-news/2016-06-14-the-sdgs-wedding-cake.html

Stokke, O. S. (2020). Interplay management. In F. Biermann & R. E. Kim (Eds.), Architectures of earth system governance: Institutional complexity and structural transformation (pp. 207–232). Cambridge University Press.

Sturman, K., Toledano, P., Akayuli, C. F. A., & Gondwe, M. (2020). African mining and the SDGs: From vision to reality. In M. Ramutsindela & D. Mickler (Eds.), Africa and the Sustainable Development Goals (pp. 59–69). Springer.

Swanson, D., Barg, S., Tyler, S., Venema, H., Tomar, S., Bhadwal, S., Nair, S., Roy, D., & Drexhage, J. (2010). Seven tools for creating adaptive policies. Technological Forecasting and Social Change, 77(6), 924–939. https://doi.org/10.1016/j.techfore.2010.04.005

Szetey, K., Moallemi, E. A., Ashton, E., Butcher, M., Sprunt, B., & Bryan, B. A. (2021). Co-creating local socioeconomic pathways for achieving the Sustainable Development Goals. Sustainability Science, 16, 1251–1268.

Tan, B. (2023). Reducing the fragmentation of global energy governance in a post-pandemic world. In R. Leal-Arcas (Ed.), Climate and energy governance for a sustainable future (pp. 229-240). Singapore: Springer Nature Singapore.

Termeer, C. J. A. M., Dewulf, A., Breeman, G., & Stiller, S. J. (2015). Governance capabilities for dealing wisely with wicked problems. Administration & Society, 47(6), 680–710. https://doi.org/10.1177/0095399712469195

The Internet Archive. (2023). About page, the Internet Archive website. Accessed on 05 May 2023 via https://archive.org/about/

Thelwall, M., & Vaughan, L. (2004). A fair history of the web? Examining country balance in the Internet Archive. Library & Information Science Research, 26(2), 162–176. https://doi.org/10.1016/j.lisr.2003.12.009

Thérien, J.-P., & Pouliot, V. (2020). Global governance as patchwork: The making of the Sustainable Development Goals. Review of International Political Economy, 27(3), 1–25. https://doi.org/10.1080/09692290.2019.1671209

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. American Journal of Evaluation, 2(27), 237–246.

Titscher, S., Meyer, M., Wodak, R., & Fetter, E. (2000). Methods of text and critical discourse anlaysis. Sage Publications.

Tomczak, M., & Tomczak, E. (2014). The need to report effect size estimates revisited: An overview of some recommended measures of effect size. Trends in Sport Sciences, 1(21), 19–25.

Torfason, M. T., & Ingram, P. (2010). The global rise of democracy. American Sociological Review, 75(3), 355–377. https://doi.org/10.1177/0003122410372230

Tosun, J., & Lang, A. (2017). Policy integration: Mapping the different concepts. Policy Studies, 38(6), 1–18. https://doi.org/10.1080/01442872.2017.1339239

Tosun, J., & Leininger, J. (2017). Governing the interlinkages between the Sustainable Development Goals: Approaches to attain policy integration. Global Challenges, 1(9), 1700036. https://doi.org/10.1002/gch2.201700036

Tosun, J., & Peters, B. G. (2018). Intergovernmental organizations' normative commitments to policy integration: The dominance of environmental goals. Environmental Science & Policy, 82, 90–99. https://doi.org/10.1016/j.envsci.2018.01.014

Trein, P., Biesbroek, R., Bolognesi, T., Cejudo, G. M., Duffy, R., Hustedt, T., & Meyer, I. (2020). Policy coordination and integration: A research agenda. Public Administration Review. https://doi.org/10.1111/puar.13180

Trein, P., & Maggetti, M. (2020). Patterns of policy integration and administrative coordination reforms: A comparative empirical analysis. Public Administration Review, 80(2), 198–208. https://doi.org/10.1111/puar.13117

Trein, P., Meyer, I., & Maggetti, M. (2019). The integration and coordination of public policies: A systematic comparative review. Journal of Comparative Policy Analysis: Research and Practice, 21(4), 1–18. https://doi.org/10.1080/13876988.2018.1496667

Tremblay, D., Gowsy, S., Riffon, O., Boucher, J.-F., Dubé, S., & Villeneuve, C. (2021). A systemic approach for sustainability implementation planning at the local level by SDG Target prioritization: The case of Quebec city. Sustainability, 13(5), 2520. https://doi.org/10.3390/su13052520

Trott, C. D., Weinberg, A. E., & McMeeking, L. B. S. (2018). Prefiguring sustainability through participatory action research experiences for undergraduates: Reflections and recommendations for student development. Sustainability, 10(9), 3332.

Tsioumani, E. (2020). Convention on Biological Diversity: A review of the post-2020 global biodiversity framework working group negotiations. Environmental Policy and Law, 50(1–2), 55–59. https://doi.org/10.3233/epl-200207

TWI2050. (2018). Transformations to achieve the Sustainable Development Goals. The World in 2050 initiative, International Institute for Applied Systems Analysis (IIASA).

TWI2050. (2019). The digital revolution and sustainable development: Opportunities and challenges. The World in 2050 initiative, International Institute for Applied Systems Analysis (IIASA).

TWI2050. (2020). Innovations for sustainability: Pathways to an efficient and post-pandemic future. The World in 2050 initiative, International Institute for Applied Systems Analysis (IIASA).

Twitter. (2021). Twitter announces second quarter 2021 results. Twitter press release. Accessed 05 May 2023 via https://www.prnewswire.com/news-releases/twitter-announces-second-quarter-2021-results-301339855.html

Twitter. (2023a). Twitter API documentation, Twitter website. Accessed 05 May 2023 via https://developer.twitter.com/en/docs/twitter-api

Twitter. (2023b). Twitter API: Academic research access, Twitter website. Accessed 05 May 2023 via https://developer.twitter.com/en/products/twitter-api/academic-research

UIA. (2023, January 13). Yearbook of International Organizations. Accessed 05 May 2023 via https://uia.org/yearbook

Underdal, A., & Kim, R. E. (2017). The Sustainable Development Goals and multilateral agreements. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable development goals as governance innovation (pp. 241–274). The MIT Press.

UNDESA. (2016). Concepts, tools and experiences in policy integration for sustainable development. Office for ECOSOC Support and Coordination. https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/publication/desa-policy-brief-policy-integration.pdf

UNDESA. (2022). Handbook for the preparation of voluntary national reviews: The 2022 edition. United Nations Department of Economic and Social Affairs. https://sustainabledevelopment.un.org/content/documents/29410VNR_Handbook_2022_English.pdf

UNDGC. (2019). Document 19-00073: The UN system chart. UN Department of Global Communications. https://www.un.org/en/pdfs/18-00159e_un_system_chart_17x11_4c_en_web.pdf

UNEP. (2013). Embedding the environment in Sustainable Development Goals - UNEP Post-2015 discussion paper 1. Untied Nations Environment Programme (UNEP). https://sustainabledevelopment.un.org/content/documents/972embedding-environments-in-SDGs-v2.pdf

UNFCCC. (2021). Nationally determined contributions under the Paris Agreement: Synthesis report by the secretariat. United Nations Framework Convention on Climate Change (UNFCCC). https://unfccc.int/documents/306848

UNGA. (2021). Our common agenda: Report of the Secretary-General. United Nations.

UN. (2012). UN Resolution A/RES/66/288: The future we want. United Nations. https://www.un.org/en/content/common-agenda-report/

UN. (2013). UN policy on integrated assessment and planning. United Nations. https://unsdg.un.org/sites/default/files/UN-Policy-on-Integrated-Assessment-and-Planning_FINAL_9-April-2013.pdf

UN. (2015). UN Resolution A/RES/70/1: Transforming our world: The 2030 Agenda for Sustainable Development. United Nations. https://sdgs.un.org/2030agenda

UN. (2017). UN Resolution A/RES/71/313: Work of the statistical commission pertaining to the 2030 Agenda for Sustainable Development. United Nations. https://ggim.un.org/documents/a_res_71_313.pdf

UN. (2019a). E/CN.3/2020/2: Report of the inter-agency and expert group on Sustainable Development Goal indicators. United Nations Economic and Social Council. https://digitallibrary.un.org/record/3847801?ln=en

UN. (2019b). Tier classification for global SDG indicators. United Nations Statistical Division. Accessed on 11 December 2019 via https://unstats.un. org/sdgs/iaeg-sdgs/tier-classification/

UN. (2020). SDG indicators. UN global SDG database. https://unstats.un.org/sdgs/indicators/database/

UN. (2021). The Sustainable Development Goals report 2021. United Nations.

UN Sustainable Development Group. (2019). UN sustainable development cooperation framework. https://unsdg.un.org/sites/default/files/2022-06/UN%20Cooperation%20Framework%20Internal%20Guidance%20--%201%20June%202022.pdf

UNSD. (2023). Sustainable Development Goal indicators website. https://unstats.un.org/sdgs/

Unsworth, K., Yeo, G., & Beck, J. (2014). Multiple goals: A review and derivation of general principles. Journal of Organizational Behavior, 35(8), 1064-1078. https://doi.org/10.1002/job.1963

Urueña, R. (2015). Indicators as political spaces. International Organizations Law Review, 12(1), 1–18. https://doi.org/10.1163/15723747-01201001

Vadura, K. (2015). The EU as 'norm entrepreneur' in the Asian region: Exploring the digital diplomacy aspect of the human rights toolbox. Asia Europe Journal, 13(3), 349–360. https://doi.org/10.1007/s10308-015-0420-3

Valencia, S. C., Simon, D., Croese, S., Nordqvist, J., Oloko, M., Sharma, T., Buck, N. T., & Versace, I. (2019). Adapting the Sustainable Development Goals and the New Urban Agenda to the city level: Initial reflections from a comparative research project. International Journal of Urban Sustainable Development, 11(1), 4–23. https://doi.org/10.1080/19463138.2019.1573172

van de Graaf, T. (2013). Fragmentation in global energy governance: Explaining the creation of IRENA. Global Environmental Politics, 13(3), 14–33. https://doi.org/10.1162/glep_a_00181

Vandemoortele, J. (2018). From simple-minded MDGs to muddle-headed SDGs. Development Studies Research, 5(1), 83–89. https://doi.org/10.1080/21665095.2018.1479647

van den Ende, M., Wardekker, J., Mees, H., Hegger, D., & Vervoort, J. M. (2021). Towards a climate-resilient future together. A toolbox with participatory foresight methods, tools and examples from climate and food governance. Utrecht University.

van der Hoeven, R. (2014). Full employment target: What lessons for a post-2015 development agenda? Journal of Human Development and Capabilities, 15(2–3), 161–175. https://doi.org/10.1080/19452829.2014.883370

van Dijk, T. A. (2001). Critical discourse analysis. In D. Tannen, D. Schiffrin, & H. Hamilton (Eds.), Handbook of discourse analysis (pp. 352–371). Blackwell.

van Dijk, T. A. (2006). Ideology and discourse analysis. Journal of Political Ideologies, 11(2), 115–140.

van Driel, M., Biermann, F., Kim, R. E., & Vijge, M. J. (2022). International organisations as 'custodians' of the sustainable development goals? Fragmentation and coordination in sustainability governance. Global Policy. https://doi.org/10.1111/1758-5899.13114

van Evera, S. (1997). Guide to methods for students of political science. Cornell University Press.

van Soest, H. L., van Vuuren, D. P., Hilaire, J., Minx, J. C., Harmsen, M. J., Krey, V., Popp, A., Riahi, K., & Luderer, G. (2019). Analysing interactions among sustainable development goals with integrated assessment models. Global Transitions, 1, 210–225.

van Vuuren, D. P., Kok, M., Lucas, P. L., Prins, A. G., Alkemade, R., Berg, M. van den, Bouwman, L., Esch, S. van der, Jeuken, M., & Kram, T. (2015). Pathways to achieve a set of ambitious global sustainability objectives by 2050: Explorations using the IMAGE integrated assessment model. Technological Forecasting and Social Change, 98, 303–323.

van Vuuren, D. P., Zimm, C., Busch, S., Kriegler, E., Leininger, J., Messner, D., Nakicenovic, N., Rockstrom, J., Riahi, K., Sperling, F., Bosetti, V., Cornell, S., Gaffney, O., Lucas, P. L., Popp, A., Ruhe, C., Schiller, A. von, Schmidt, J. O., & Soergel, B. (2022). Defining a sustainable development target space for 2030 and 2050. One Earth, 5(2), 142–156. https://doi.org/10.1016/j.oneear.2022.01.003

van Zanten, J. A., & van Tulder, R. (2021). Towards nexus-based governance: Defining interactions between economic activities and Sustainable Development Goals (SDGs). International Journal of Sustainable Development & World Ecology, 28(3), 210–226.

Vasseur, L., Horning, D., Thornbush, M., Cohen-Shacham, E., Andrade, A., Barrow, E., Edwards, S. R., Wit, P., & Jones, M. (2017). Complex problems and unchallenged solutions: Bringing ecosystem governance to the forefront of the UN sustainable development goals. Ambio, 46(7), 731–742. https://doi.org/10.1007/s13280-017-0918-6

Venghaus, S., & Hake, J.-F. (2018). Nexus thinking in current EU policies: The interdependencies among food, energy and water resources. Environmental Science & Policy, 90, 183–192. https://doi.org/10.1016/j.envsci.2017.12.014

Victor, D. G., Raustiala, K., & Skolnikoff, E. B. (1998). The implementation and effectiveness of international environmental commitments: Theory and practice. MIT press.

Visseren-Hamakers, I. J. (2015). Integrative environmental governance: Enhancing governance in the era of synergies. Current Opinion in Environmental Sustainability, 14, 136–143. https://doi.org/10.1016/j.cosust.2015.05.008

Visseren-Hamakers, I. J., Arts, B., & Glasbergen, P. (2011). Interaction management by partnerships: The case of biodiversity and climate change. Global Environmental Politics, 11(4), 89–107. https://doi.org/10.1162/glep_a_00085

Visseren-Hamakers, I. J., & Kok, M. T. (2022). The urgency of transforming biodiversity governance. In I. J. Visseren-Hamakers & M. T. Kok (Eds.), Transforming biodiversity governance (pp. 3–21). Cambridge University Press.

Visseren-Hamakers, I. J., & Verkooijen, P. (2012). Forest and nature governance: A practice based approach. World Forests, 133–149. https://doi.org/10.1007/978-94-007-5113-2_7

Volgy, T. J., Fausett, E., Grant, K. A., & Rodgers, S. (2008). Identifying formal intergovernmental organizations. Journal of Peace Research, 45(6), 837–850. https://doi.org/10.1177/0022343308096159

Voß, J. P., & Kemp, R. (2006). Sustainability and reflexive governance: Introduction. In J. Voß, D. Bauknecht, & R. Kemp (Eds.), Reflexive governance for sustainable development (pp. 3–30). Edward Elgar.

Waage, J., Banerji, R., Campbell, O., Chirwa, E., Collender, G., Dieltiens, V., ... & Unterhalter, E. (2010). The Millennium Development Goals: A cross-sectoral analysis and principles for goal setting after 2015. Lancet and London International Development Centre Commission. The lancet, 376(9745), 991-1023. https://doi.org/10.1016/S0140-6736(10)61196-8

Waal, J. W. H. van der, & Thijssens, T. (2020). Corporate involvement in Sustainable Development Goals: Exploring the territory. Journal of Cleaner Production, 252, 119625. https://doi.org/10.1016/j.jclepro.2019.119625

Wallace, M., & Singer, J. D. (1970). International governmental organization in the global system, 1815-1964. International Organization, 24, 239–287.

Warchold, A., Pradhan, P., & Kropp, J. P. (2021). Variations in Sustainable Development Goal interactions: Population, regional, and income disaggregation. Sustainable Development, 29(2), 285–299. https://doi.org/10.1002/sd.2145

Wardekker, J. A., Sluijs, J. P. van der, Janssen, P. H. M., Kloprogge, P., & Petersen, A. C. (2008). Uncertainty communication in environmental assessments: Views from the Dutch science-policy interface. Environmental Science & Policy, 11(7), 627–641. https://doi.org/10.1016/j.envsci.2008.05.005

Warntjen, A. (2012). Measuring salience in EU legislative politics. European Union Politics, 13(1), 168–182. https://doi.org/10.1177/1465116511428495

Wasserman, S., & Faust, K. (1994). Social network analysis: Methods and applications. Cambridge University Press.

WEGO (2023). Well-being economy governments partnership. Accessed on 05 May 2023 via https://weall.org/wego

Weiland, S., Hickmann, T., Lederer, M., Marquardt, J., & Schwindenhammer, S. (2021). The 2030 Agenda for Sustainable Development: Transformative change through the Sustainable Development Goals? Politics and Governance, 9(1), 90–95. https://doi.org/10.17645/pag.v9i1.4191

Weitz, N., Carlsen, H., Nilsson, M., & Skånberg, K. (2018). Towards systemic and contextual priority setting for implementing the 2030 Agenda. Sustainability Science, 13(2), 531–548. https://doi.org/10.1007/s11625-017-0470-0

Westcott, N. (2008). Digital diplomacy: The impact of the internet on international relations. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.1326476

Wetherell, M., Taylor, S., & Yates, S. J. (2001). Discourse theory and practice: A reader. Sage Publications Ltd. http://oro.open.ac.uk/24341/

WFP, WHO, & UNICEF. (2022). The state of food security and nutrition in the world 2022: Repurposing food and agricultural policies to make healthy diets more affordable. FAO, Rome. https://www.fao.org/documents/card/en/c/cc0639en/

White, R. W., & Jose, J. M. (2004). A study of topic similarity measures. Proceedings of the 27th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval, 520–521. https://doi.org/10.1145/1008992.1009100

Wicke, B., Leeuwen, J. D. van, Daioglou, V., Bruin, J. M. de, Biermann, F., & Vuuren, D. P. van. (2022). Quantifying synergies and trade-offs between the biobased economy and the Sustainable Development Goals (unpublished manuscript).

Wickham, H. (2007). Reshaping data with the reshape package. Journal of Statistical Software, 21(12), 1–20. http://www.jstatsoft.org/v21/i12/

Wickham, H. (2016). ggplot2: Elegant graphics for data analysis [computer software]. https://ggplot2.tidyverse.org

Wickham, H. (2022). stringr: Simple, consistent wrappers for common string operations [computer software].

Wickham, H., & Bryan, J. (2023). readxl: Read Excel files [computer software].

Wickham, H., François, R., Henry, L., Müller, K., & Vaughan, D. (2023). dplyr: A grammar of data manipulation [computer software].

Wickham, H., Vaughan, D., & Girlich, M. (2023). tidyr: Tidy messy data [computer software].
Widerberg, O. (2016). Mapping institutional complexity in the Anthropocene: A network approach. In P. Pattberg, & F. Zelli (Eds.), Environmental politics and governance in the Anthropocene. Routledge.
Widerberg, O., & Pattberg, P. (2015). International cooperative initiatives in global climate governance: Raising the ambition level or delegitimizing the UNFCCC? Global Policy, 6(1), 45–56. https://doi.org/10.1111/1758-5899.12184
Widmer, A. (2018). Mainstreaming climate adaptation in Switzerland: How the national adaptation strategy is implemented differently across sectors. Environmental Science & Policy, 82, 71–78. https://doi.org/10.1016/j.envsci.2018.01.007
Wilcoxon, F. (1945). Individual comparisons by ranking methods. Biometrics, 1, 80–83.
Wilkerson, J., & Casas, A. (2017). Large-scale computerized text analysis in political science: Opportunities and challenges. Annual Review of Political Science, 20(1), 529–544. https://doi.org/10.1146/annurev-polisci-052615-025542
Wilson, M., Davis, D. R., & Murdie, A. (2016). The view from the bottom: Networks of conflict resolution organizations and international peace. Journal of Peace Research, 53(3), 442–458. https://doi.org/10.1177/0022343316628813
Wodak, R. (2007). Pragmatics and critical discourse analysis: A cross-disciplinary inquiry. Pragmatics & Cognition, 15(1), 203–225.
Wodak, R., & Meyer, M. (2001). Methods of critical discourse studies. Sage Publications.
World Bank. (2020). DataBank: Sustainable Development Goals (SDGs). https://databank.worldbank.org/reports.aspx?source=sustainable-development-goals-(sdgs)
Xu, H., Cao, Y., Yu, D., Cao, M., He, Y., Gill, M., & Pereira, H. M. (2021). Ensuring effective implementation of the post-2020 global biodiversity targets. Nature Ecology & Evolution, 5(4), 411–418. https://doi.org/10.1038/s41559-020-01375-y
Yamada, T. (2017). Corporate water stewardship: lessons for goal-based hybrid governance. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 187–210). The MIT Press.
Yang, S., Zhao, W., Liu, Y., Cherubini, F., Fu, B., & Pereira, P. (2020). Prioritizing Sustainable Development Goals and linking them to ecosystem services: A global expert's knowledge evaluation. Geography and Sustainability, 1(4), 321–330. https://doi.org/10.1016/j.geosus.2020.09.004
Yang, W., Veeneman, W., & Jong, M. de. (2018). Transport demand management policy integration in Chinese cities: A proposed analysis of its effects. Energies, 11(5), 1126. https://doi.org/10.3390/en11051126
Yi, H., & Scholz, J. T. (2016). Policy networks in complex governance subsystems: Observing and comparing hyperlink, media, and partnership networks. Policy Studies Journal, 44(3), 248–279. https://doi.org/10.1111/psj.12141
Yiu, L. S., & Saner, R. (2014). Sustainable Development Goals and Millennium Development Goals: An analysis of the shaping and negotiation process. Asia Pacific Journal of Public Administration, 36(2), 89–107. https://doi.org/10.1080/23276665.2014.911487
Young, O. R. (2011a). Effectiveness of international environmental regimes: Existing knowledge, cutting-edge themes, and research strategies. Proceedings of the National Academy of Sciences, 108(50), 19853–19860. https://doi.org/10.1073/pnas.1111690108
Young, O. R. (2011b). Overcoming fragmented governance: The case of climate change and the MDGs. Governance and Sustainability Issue Brief Series, 2. University of Massachusetts Boston.

Young, O. R. (2017). Conceptualization: Goal setting as a strategy for earth system governance. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable Development Goals as governance innovation (pp. 31–51). The MIT Press.

Young, O. R., Underdal, A., Kanie, N., & Kim, R. E. (2017). Goal setting in the Anthropocene: The ultimate challenge of planetary stewardship. In N. Kanie & F. Biermann (Eds.), Governing through goals: Sustainable development goals as governance innovation (pp. 53–74). The MIT Press.

Zaccaria, G. (2021). The UN at 75: An institutional appraisal. The International Spectator, 56(1), 143–145. https://doi.org/10.1080/03932729.2020.1851949

Zapp, M. (2018). The scientization of the world polity: International organizations and the production of scientific knowledge, 1950--2015. International Sociology, 33(1), 3–26.

Zeileis, A., & Hothorn, T. (2002). Diagnostic checking in regression relationships. R News, 2(3), 7–10. https://CRAN.R-project.org/doc/Rnews/

Zelli, F., Biermann, F., Pattberg, P., & Asselt, H. van. (2010). The consequences of a fragmented climate governance architecture: A policy appraisal. In F. Biermann, P. Pattberg, & F. Zelli (Eds.), Global climate governance beyond 2012. Architecture, agency and adaptation (pp. 25–34). Cambridge University Press.

Zelli, F., Gupta, A., & van Asselt, H. (2012). Horizontal institutional interlinkages. In F. Biermann & P. Pattberg (Eds.), Global environmental governance reconsidered (pp. 175–198). The MIT Press.

Zelli, F., & van Asselt, H. (2013). Introduction: The institutional fragmentation of global environmental governance: Causes, consequences, and responses. Global Environmental Politics, 13(3), 1–13. https://doi.org/10.1162/glep_a_00180

Zeng, Y., Maxwell, S., Runting, R. K., Venter, O., Watson, J. E. M., & Carrasco, L. R. (2020). Environmental destruction not avoided with the Sustainable Development Goals. Nature Sustainability, 3(10), 795–798. https://doi.org/10.1038/s41893-020-0555-0

Zhou, X., & Moinuddin, M. (2017). Sustainable Development Goals interlinkages and network analysis: A practical tool for SDG integration and policy coherence. Institute for Global Environmental Strategies, Kamiyamaguchi, Japan. http://www.iges.or.jp

Zimm, C., Sperling, F., & Busch, S. (2018). Identifying sustainability and knowledge gaps in socio-economic pathways vis-à-vis the Sustainable Development Goals. Economies, 6(2), 20.

Zürn, M., & Faude, B. (2013). Commentary: On fragmentation, differentiation, and coordination. Global Environmental Politics, 13(3), 119–130. https://doi.org/10.1162/glep_a_00186

Table S4.1. List of international organizations included in the empirical studies

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
UNESCO	UN Educational, Scientific, and Cultural Organization	Yes	Global	189	Social	SDG 4	1	1	1	1
FAO	Food and Agriculture Organization of the UN	Yes	Global	191	Social	SDG 2	1	1	1	1
Montreal	Multilateral Fund for the Implementation of the Montreal Protocol	No	Global	187	Environmental	SDG 13 and SDG 15	1	0	0	0
WHO	World Health Organization	Yes	Global	190	Social	SDG 3	1	1	1	1
ITU	International Telecommunication Union	Yes	Global	192	Economic and social	SDG 9 and SDG 17	1	1	1	1
UN	UN	Yes	Global	193	Economic, social and environmental	All SDGs	1	1	1	1
WMO	World Meteorological Organization	Yes	Global	180	Economic	SDG 9	1	1	1	1
INTERPOL	International Criminal Police Organization	No	Global	185	Social	SDG 16	1	1	1	1
ICAO	International Civil Aviation Organization	Yes	Global	190	Social	SDG 11	1	0	0	0
WIPO	World Intellectual Property Organization	Yes	Global	179	Economic	SDG 8	1	1	1	1
WTO	World Trade Organization	No	Global	157	Economic	SDG 8	1	1	1	1
IMF	International Monetary Fund	Yes	Global	186	Economic and social	SDG 8 and SDG 16	1	1	1	1
ILO	International Labour Organization	Yes	Global	183	Economic	SDG 8	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
WB	World Bank	Yes	Global	189	Economic and social	SDG 1 and SDG 10	1	0	0	0
IOEz	International Office of Epizootics	No	Global	177	Social and environmental	SDG 2, SDG 3 and SDG 15	1	1	1	1
IFC	International Finance Corporation	No	Global	182	Economic	SDG 8	1	1	1	1
MIGA	Multilateral Investment Guarantee Agency	No	Global	159	Economic	SDG 8	1	1	0	1
IFAD	International Fund for Agricultural Development	Yes	Global	167	Social	SDG 2	1	1	1	1
IMO	International Maritime Organization	Yes	Global	166	Environmental	SDG 14	1	1	1	1
IOMig	International Organization for Migration	No	Global	155	Social	SDG 1 and SDG 16	1	1	1	1
ISA	International Seabed Authority	No	Global	161	Environmental	SDG 14	1	1	1	1
IEXB	International Exhibitions Bureau	No	Global	163	Social	SDG 11	1	1	1	1
WCO	World Customs Organization	No	Global	165	Social	SDG 16	1	0	0	0
WTOURO	UN World Tourism Organization	Yes	Global	160	Economic	SDG 8 and SDG 12	1	1	1	1
IRENA	International Renewable Energy Agency	No	Global	93	Social	SDG 7	1	0	0	0
IAEA	International Atomic Energy Agency	No	Global	157	Economic and social	SDG 7 and SDG 9	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
EFILWC	European Foundation for the Improvement of Living and Working	No	Regional	27	Economic	SDG 8	1	1	1	1
IOPCF	International Oil Pollution Compensation Funds 1971 and 1992	No	Global	122	Social	SDG 16	1	0	0	0
PIARC	Permanent International Association of Road Congresses/ World Road Association	No	Global	122	Economic	SDG 9	1	1	1	1
ICCROM	International Center for the Study of the Preservation and the Restoration of Cultural Property	No	Global	131	Social	SDG 11	1	1	1	1
IUPNVP	International Union for the Protection of New Varieties of Plants	No	Global	69	Environmental	SDG 15	1	1	0	0
IOLM	International Organization for Legal Metrology	No	Global	57	Economic and social	SDG 9 and SDG 16	1	0	0	0
ICC	International Criminal Court	No	Global	121	Social	SDG 16	1	1	1	1
ICMMP	International Committee of Military Medicine and Pharmacy	No	Global	108	Social	SDG 3	1	1	0	1
PCA	Permanent Court of Arbitration	No	Global	111	Social	SDG 16	1	1	0	0
GEO	Group on Earth Observations	No	Global	88	Environmental	SDG 13	1	1	1	1
OAS	Pan American Union	No	Regional	34	Social	SDG 16	1	1	1	1
CFC	Common Fund for Commodities	No	Global	105	Economic	SDG 8	1	1	1	1
ICivDO	International Civil Defence Organization	No	Global	57	Social	SDG 16	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
IWhale	International Whaling Commission	No	Global	89	Environmental	SDG 14	1	1	1	1
IHO	International Hydrographic Bureau/ International Hydrographic Organization	No	Global	83	Environmental	SDG 14	1	1	0	0
IASAJ	International Association of Supreme Administrative Jurisdictions	No	Global	69	Social	SDG 16	1	0	0	0
IACI	Inter-American Children's Institute	No	Regional	34	Social	SDG 16	1	0	0	0
AfDB	African Development Bank	No	Regional	79	Economic and social	SDG 1 and SDG 8	1	1	1	1
ACP	African, Caribbean and Pacific Group of States	No	Regional	76	Social	SDG 1 and SDG 16	1	1	1	1
ICfO	International Coffee Organization	No	Global	45	Economic	SDG 8	1	0	0	0
HCPIL	Hague Conference on Private International Law	No	Global	74	Social	SDG 16	1	1	1	1
ITTO	International Tropical Timber Organization	No	Global	70	Environmental	SDG 15	1	1	1	1
APT	Asia-Pacific Telecommunity	No	Regional	38	Economic	SDG 9	1	1	0	0
OSCE	Organization for Security and Cooperation in Europe	No	Regional	55	Social	SDG 16	1	1	1	1
AsDB	Asian Development Bank	No	Regional	65	Economic	SDG 8	1	1	1	1
AITIC	Agency for International Trade Information and Cooperation	No	Global	62	Economic and social	SDG 1 and SDG 8	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
EBRD	European Bank for Reconstruction and Development	No	Global	63	Economic	SDG 8	1	1	1	1
UNIDROIT	International Institute for the Unification of Private Law	No	Global	62	Social	SDG 16	1	1	0	1
OIC	Organization of Islamic Cooperation	No	Regional	56	Economic, social and environmental	All SDGs	1	1	0	1
ACCT	Agence de La Francophonie	No	Global	51	Economic and social	SDG 4, SDG 8 and SDG 16	1	0	0	0
BIS	Bank for International Settlements	No	Global	58	Economic and social	SDG 1 and SDG 8	1	1	1	1
IIF	International Institute of Refrigeration/International Cold Institute	No	Global	61	Economic	SDG 9	1	0	0	0
ISDB	Islamic Development Bank	No	Regional	55	Economic	SDG 8 and SDG 9	1	1	0	0
ETF	European Training Foundation	No	Regional	27	Economic and social	SDG 4 and SDG 8	1	1	1	1
AU	African Union	No	Regional	52	Economic, social and environmental	All SDGs	1	1	1	1
OCR	Organization for the Collaboration of Railways	No	Regional	30	Economic	SDG 9	1	0	0	0
COE	Council of Europe	No	Regional	47	Social	SDG 16	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
ACS	Association of Caribbean States	No	Regional	26	Economic, social and environmental	SDG 8, SDG 14 and SDG 17	1	1	0	1
ComSec	Commonwealth Secretariat	No	Global	53	Economic, social and environmental	All SDGs	1	1	1	1
AMCOW	African Ministers' Council on Water	No	Regional	52	Environmental	SDG 6	1	1	0	1
EMPPO	European and Mediterranean Plant Protection Organization	No	Regional	48	Environmental	SDG 15	1	1	1	1
IAIAS	Inter-American Institute of Agricultural Science/Inter-American Institute for Cooperation on Agriculture	No	Regional	34	Social	SDG 2	1	1	0	1
ICCO	International Cocoa Organization	No	Global	26	Economic	SDG 8	1	1	0	0
EFTA	European Free Trade Association	No	Regional	4	Economic	SDG 8	1	1	1	1
AALCO	Asian-African Legal Consultative Committee	No	Regional	46	Social	SDG 16	1	0	0	0
ASEF	Asia-Europe Foundation	No	Regional	20	Economic, social and environmental	All SDGs	1	1	1	1
IADB	Inter-American Development Bank	No	Global	49	Economic and social	SDG 1 and SDG 9	1	1	1	1
CABI	Commonwealth Agricultural Bureaux International	No	Global	44	Social	SDG 1 and SDG 2	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
ACWL	Advisory Centre on WTO Law	No	Global	41	Economic and social	SDG 8 and SDG 16	1	1	0	0
OIV	International Organization of Vine and Wine	No	Global	47	Economic	SDG 12	1	1	0	1
AACB	Association of African Central Banks	No	Regional	52	Economic	SDG 8	1	0	0	0
RASCOM	Regional African Satellite Communications Organization	No	Regional	45	Economic	SDG 9	1	0	0	0
IAIC	Inter-American Investment Corporation	No	Global	45	Economic	SDG 8	1	1	1	1
PAHO	Pan American Sanitary Bureau	No	Regional	35	Social	SDG 3	1	1	1	1
EUROCONTROL	European Organization for the Safety of Air Navigation	No	Regional	40	Social	SDG 11	1	1	1	1
UM	Union of the Mediterranian	No	Regional	16	Economic, social and environmental	All SDGs	1	1	1	1
CONFEJES	Conference des ministres de la jeunesse et des sports des pays	No	Regional	42	Social	SDG 4	1	0	0	0
Wassen	Wassenaar Arrangement on Export Controls for Conventional Arms and	No	Regional	41	Social	SDG 16	1	0	0	0
IPC	International Pepper Community	No	Regional	6	Economic	SDG 8 and SDG 12	1	1	1	1
EPO	European Patent Office/European Patent Organization	No	Regional	36	Economic	SDG 8	1	1	1	1
LATIN	Latin Union	No	Global	37	Social	SDG 11	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
Africare	African Reinsurance Corporation	No	Regional	79	Economic	SDG 8	1	0	0	0
IEA	International Energy Agency	No	Regional	28	Social	SDG 7	1	1	1	1
ICRI	International Coral Reef Initiative	No	Global	33	Environmental	SDG 14	1	1	1	1
OECD	Organization for Economic Cooperation and Development	No	Regional	34	Economic	SDG 8	1	1	1	1
CICA	Conference on Interaction and Confidence-Building Measures in Asia	No	Regional	25	Social	SDG 16	1	0	0	0
SADC	Southern African Development Community	No	Regional	15	Economic	SDG 8	1	1	1	1
AfricaRice	West Africa Rice Development Association	No	Regional	25	Social	SDG 1 and SDG 2	1	0	0	0
CERN	European Organization for Nuclear Research	No	Regional	21	Economic	SDG 9	1	1	1	1
OPANAL	Agency for the Prohibition of Nuclear Weapons in Latin America and the Carribean	No	Regional	33	Social	SDG 16	1	0	0	0
EMBC	European Molecular Biology Conference	No	Regional	27	Economic	SDG 9	1	0	0	0
RCC	Regional Cooperation Council	No	Regional	1	Economic, social and environmental	All SDGs	1	1	1	1
AARO	Afro-Asian Rural Reconstruction Organization	No	Regional	29	Social	SDG 2	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
G24	Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development	No	Global	24	Economic	SDG 8	1	0	0	0
CTO	Commonwealth Telecommunications Organization	No	Global	33	Economic	SDG 9	1	1	0	0
NATO	North Atlantic Treaty Organization	No	Regional	28	Social	SDG 16	1	1	1	1
EIB	European Investment Bank	No	Regional	24	Economic and environmental	SDG 8 and SDG 13	1	1	1	1
EU	European Union	No	Regional	28	Economic, social and environmental	All SDGs	1	1	1	1
EMBL	European Molecular Biology Laboratory	No	Regional	23	Economic	SDG 9	1	0	0	0
ICAC	International Cotton Advisory Committee	No	Global	38	Economic	SDG 8	1	0	0	0
CFATF	Caribbean Financial Action Task Force	No	Regional	22	Social	SDG 16	1	0	0	0
COLOMBO	Council for Technical Cooperation in South and Southeast Asia (Colombo Plan)	No	Regional	27	Economic	SDG 8	1	0	0	0
SICA	Central American Integration System	No	Regional	8	Social	SDG 16	1	0	0	0
IGC	International Grains Council	No	Global	27	Social	SDG 2	1	0	0	0
CDB	Caribbean Development Bank	No	Regional	21	Economic and social	SDG 1 and SDG 8	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
SPC	South Pacific Commission	No	Regional	17	Economic, social and environmental	All SDGs	1	1	1	1
LAEO	Latin American Energy Organization	No	Regional	26	Social	SDG 7	1	0	0	0
EUROFIMA	European Company for the Financing of Railway Rolling Stock	No	Regional	25	Economic	SDG 9	1	0	0	0
ALO	Arab Labour Organization	No	Regional	20	Economic	SDG 8	1	0	0	0
MCWCASM	Ministerial Conference of West and Central African States on Maritime	No	Regional	25	Social and environmental	SDG 11 and SDG 14	1	0	0	0
PMAESA	Port Management Association of Eastern and Southern Africa	No	Regional	19	Economic	SDG 9	1	0	0	0
PAIGH	Pan American Institute of Geography and History	No	Regional	21	Economic and social	SDG 4 and SDG 9	1	0	0	0
IATTC	Inter-American Tropical Tuna Commission	No	Regional	19	Environmental	SDG 14	1	1	0	0
JINR	Joint Institute for Nuclear Research	No	Regional	18	Economic	SDG 9	1	0	0	0
ICSG	International Copper Study Group	No	Regional	23	Economic	SDG 8	1	0	0	0
IABE	Organization of Ibero-American States	No	Regional	21	Social	SDG 4	1	0	0	0
ICSE	International Commission for the Scientific Exploration of the Mediterranean Sea	No	Regional	25	Environmental	SDG 15	1	1	1	1
AOAD	Arab Organization for Agricultural Development	No	Regional	21	Social	SDG 2	1	1	0	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
AFESD	Arab Fund for Economic and Social Development	No	Regional	20	Economic	SDG 8	1	0	0	0
AMF	Arab Monetary Fund	No	Regional	21	Economic	SDG 8	1	0	0	0
SEGIB	Ibero-American General Secretariat	No	Regional	22	Economic, social and environmental	All SDGs	1	0	0	0
LACAC	Latin American Civil Aviation Commission	No	Regional	21	Social	SDG 11	1	0	0	0
AFRISTAT	Observatoire economique et statistique d'Afrique subsaharienne	No	Regional	22	Social	SDG 17	1	0	0	0
CSLF	Carbon Sequestration Leadership Forum	No	Regional	22	Economic and environmental	SDG 9 and SDG 13	1	1	0	1
FDIPLAC	Fund for the Development of the Indigenous Peoples of Latin America	No	Regional	22	Social	SDG 1	1	0	0	0
AAAID	Arab Authority for Agricultural Investment and Development	No	Regional	20	Economic and social	SDG 2 and SDG 8	1	0	0	0
CBFP	Congo Basin Forest Partnership	No	Regional	20	Economic and environmental	SDG 12 and SDG 15	1	1	1	1
Danube	Danube Commission	No	Regional	11	Economic and environmental	SDG 6, SDG 8 and SDG 9	1	0	0	0
AIDO	Arab Industrial Development and Mining Organization	No	Regional	20	Economic	SDG 8 and SDG 9	1	0	0	0
APEC	Asia-Pacific Economic Cooperation	No	Regional	20	Economic	SDG 8	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
ArticC	Arctic Council	No	Regional	8	Environmental	SDG 14 and SDG 15	1	1	1	1
ICES	International Council for the Exploration of the Sea	No	Regional	20	Environmental	SDG 14	1	0	0	0
PIF	South Pacific Forum	No	Regional	14	Economic, social and environmental	SDG 8, SDG 14 and SDG 16	1	0	0	0
CARICOM	Caribbean Community	No	Regional	14	Economic, social and environmental	All SDGs	1	0	0	0
APO	Asian Productivity Organization	No	Regional	20	Economic	SDG 8	1	1	1	1
COMESA	Common Market for Eastern and Southern Africa	No	Regional	20	Economic	SDG 8	1	1	1	1
ARIPO	African Regional Industrial Property Organization/African Regional Intellectual Property Organization	No	Regional	19	Economic	SDG 8	1	1	0	1
CPSC	Community of Portuguese-Speaking Countries	No	Regional	9	Economic, social and environmental	All SDGs	1	0	0	0
NACAP	Network of Aquaculture Centres in Asia-Pacific	No	Regional	17	Environmental	SDG 14	1	0	0	0
ESA	European Space Agency	No	Regional	20	Economic	SDG 9	1	1	1	1
ECB	European Central Bank	No	Regional	18	Economic	SDG 8	1	1	1	1
SEAMEO	Southeast Asian Ministers of Education Organization	No	Regional	11	Social	SDG 4	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
ABEDA	Arab Bank for Economic Development in Africa	No	Regional	17	Economic	SDG 8	1	0	0	0
CEI	Central European Initiative	No	Regional	18	Social	SDG 16	1	1	1	1
SCO	Shanghai Cooperation Organisation	No	Regional	6	Economic, social and environmental	All SDGs	1	0	0	0
WAHO	West African Health Organization	No	Regional	16	Social	SDG 3	1	0	0	0
AIPO	African Intellectual Property Organization	No	Regional	16	Economic	SDG 8	1	0	0	0
ASECNA	Agency for the Safety of Aerial Navigation in Africa and Madagascar	No	Regional	18	Social	SDG 11	1	0	0	0
APCC	Asian and Pacific Coconut Community	No	Regional	15	Economic	SDG 8	1	0	0	0
G15	Group of Fifteen	No	Regional	19	Economic	SDG 8	1	0	0	0
ARC	Asian Reinsurance Corporation (Asian Re)	No	Regional	10	Economic	SDG 8	1	0	0	0
SAARC	South Asian Association for Regional Cooperation	No	Regional	8	Economic, social and environmental	All SDGs	1	1	1	1
ERIA	Economic Research Institute for ASEAN and East Asia	No	Regional	15	Economic	SDG 8	1	1	1	1
IIWEE	International Institute for Water and Environment Engineering (2IE)	No	Regional	14	Economic, social and environmental	SDG 4, SDG 6 and SDG 9	1	1	1	1
CXC	Caribbean Examinations Council	No	Regional	11	Social	SDG 4	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
ECOWAS	Economic Community of West African States	No	Regional	15	Economic	SDG 8	1	1	0	1
OSPAR	Commission for the Convention for the Protection of the Marine Environment of the North-East Atlantic	No	Regional	15	Environmental	SDG 14	0	1	0	1
IOOC	International Olive Oil Council	No	Regional	30	Economic	SDG 8 and SDG 12	1	1	1	1
RECSA	Regional Centre on Small Arms and Light Weapons	No	Regional	15	Social	SDG 16	1	0	0	0
OPEC	Organization of Petroleum Exporting Countries	No	Regional	11	Economic	SDG 8	1	1	1	1
LACP	Latin American Center for Physics	No	Regional	14	Economic	SDG 9	1	0	0	0
INFOFISH	Intergovernmental Organization for Marketing Information and Technical Advisory	No	Regional	13	Economic	SDG 8	1	1	0	0
LAIA	Latin American Integration Association	No	Regional	13	Economic, social and environmental	All SDGs	1	0	0	0
MFO	Multinational Force and Observers	No	Regional	13	Social	SDG 16	1	1	0	0
CIS	Commonwealth of Independent States	No	Regional	9	Economic, social and environmental	All SDGs	1	0	0	0
USP	University of the South Pacific	No	Regional	9	Social	SDG 4	1	1	1	1
ESO	European Southern Observatory	No	Regional	14	Economic	SDG 9	1	1	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
Mercosur	Southern Common Market	No	Regional	7	Economic	SDG 8	1	0	0	0
ECCAS	Economic Community of Central African States	No	Regional	11	Economic	SDG 8	1	0	0	0
INFSMK	Centre for Marketing Information and Advisory Services for Fishery	No	Regional	10	Economic and environmental	SDG 8 and SDG 14	1	0	0	0
VASAB	Vision and Strategies around the Baltic Sea 2010	No	Regional	11	Economic and social	SDG 8, SDG 9 and SDG 11	1	0	0	0
ASEAN	Association of South East Asian Nations	No	Regional	10	Economic and social	SDG 8 and SDG 16	1	1	1	1
ECO	Economic Cooperation Organization	No	Regional	10	Economic	SDG 8	0	1	0	1
OAPEC	Organization of Arab Petroleum Exporting Countries	No	Regional	10	Economic	SDG 8	1	0	0	0
LCBC	Commission of the Chad Basin	No	Regional	6	Environmental	SDG 6	1	1	1	1
OECS	Organization of Eastern Caribbean States	No	Regional	6	Economic, social and environmental	All SDGs	1	0	0	0
NRC	Niger River Commission	No	Regional	9	Economic and environmental	SDG 6 and SDG 12	1	0	0	0
CAB	Convenio Andres Bello de integracion educativa, cientfica y cultural	No	Regional	12	Economic and social	SDG 4, SDG 9 and SDG 11	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
RIOPPAH	International Regional Organization against Plant and Animal Diseases	No	Regional	9	Social and environmental	SDG 2, SDG 3 and SDG 15	1	0	0	0
AVRDC	Asian Vegetable Research and Development Center	No	Regional	9	Social	SDG 1 and SDG 2	1	1	0	1
AFGEC	African Fund for Guarantee and Economic Cooperation	No	Regional	14	Economic	SDG 8	1	0	0	0
NAFO	Northwest Atlantic Fisheries Organization	No	Regional	16	Environmental	SDG 14	1	1	0	1
Turksoy	Joint Administration of the Turkic Culture and Arts	No	Regional	6	Social	SDG 11	1	0	0	0
EIP	European Institute for Peace	No	Regional	9	Social	SDG 16	0	1	0	1
BONN	Agreement for cooperation in dealing with pollution of the North Sea	No	Regional	10	Environmental	SDG 14	1	0	0	0
ISB	Inter-State Bank	No	Regional	10	Economic	SDG 8	1	0	0	0
INCAP	Institute of Nutrition for Central America and Panama	No	Regional	8	Social	SDG 2	1	1	0	1
NIB	Nordic Investment Bank	No	Regional	8	Economic	SDG 8	1	1	1	1
NordC	Nordic Council	No	Regional	5	Economic, social and environmental	All SDGs	1	1	1	1
SACEP	South Asia Cooperative Environment Programme	No	Regional	8	Economic	SDG 12	1	0	0	0
ECCB	Eastern Caribbean Central Bank	No	Regional	6	Economic	SDG 8	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
PIPD	Partners in Population and Development - A South-South Initiative	No	Regional	26	Social	SDG 3 and SDG 5	1	1	0	1
EAPO	Eurasian Patent Organization	No	Regional	9	Economic	SDG 8	1	0	0	0
ICFAM	Intergovernmental Institution for the use of Micro-Algae Against Malnutrition	No	Regional	21	Social	SDG 2	1	1	0	1
IGAD	Intergovernmental Authority on Development	No	Regional	7	Social	SDG 16	1	1	1	1
CSTO	Collective Security Treaty Organization	No	Regional	6	Social	SDG 16	1	0	0	0
GOIC	Gulf Organization for Industrial Consulting	No	Regional	7	Economic	SDG 8 and SDG 9	1	0	0	0
ICCS	International Commission on Civil Status	No	Regional	15	Social	SDG 16	1	0	0	0
WNF	West-Nordic Foundation	No	Regional	5	Economic	SDG 8 and SDG 9	1	0	0	0
GCC	Gulf Cooperation Council	No	Regional	6	Economic, social and environmental	All SDGs	1	0	0	0
AGPUNDO	Arab Gulf Programme for UN Development Organizations	No	Regional	6	Social	SDG 1, SDG 4 and SDG 5	1	0	0	0
CEMAC	Communaute economique et monetaire d'Afrique centrale	No	Regional	6	Economic	SDG 8	1	0	0	0

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
CAIPA	Central American Institute for Public Administration	No	Regional	6	Social	SDG 4 and SDG 16	1	0	0	0
PICES	North Pacific Marine Science Organization	No	Regional	6	Environmental	SDG 14	1	0	0	0
ICHRB	International Commission for the Hydrology of the Rhine Basin	No	Regional	6	Environmental	SDG 6	1	0	0	0
IIFEO	International Thermonuclear Experimental Reactor International Fusion Energy Organization	No	Regional	6	Social	SDG 7	1	1	0	1
CEFTA	Central European Free Trade Association	No	Regional	7	Economic	SDG 8	1	1	0	1
Iocean	Interoceanmetal joint organization	No	Regional	6	Economic and environmental	SDG 9 and SDG 14	1	0	0	0
Andean	Andean Common Market	No	Regional	4	Economic	SDG 8	1	0	0	0
AMU	Arab Maghreb Union	No	Regional	5	Economic	SDG 8	1	0	0	0
ICRPBC	Intergovernmental Committee of the River Plate Basin Countries	No	Regional	5	Environmental	SDG 6	1	0	0	0
IOCom	Indian Ocean Commission	No	Regional	5	Economic, social and environmental	All SDGs	1	1	0	1
NDF	Nordic Development Fund	No	Regional	5	Social and environmental	SDG 1 and SDG 13	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
CCNR	Central Commission for the Navigation of the Rhine	No	Regional	5	Economic and environmental	SDG 6, SDG 8 and SDG 9	1	1	0	0
NPAFC	North Pacific Anadromous Fish Commission	No	Regional	5	Environmental	SDG 14	1	1	0	1
NASCO	North Atlantic Salmon Conservation Organization	No	Regional	6	Environmental	SDG 14	1	1	0	1
SACU	Southern African Customs Union	No	Regional	5	Social	SDG 16	1	1	0	0
ICPRP	International Bureau for the Protection of the Rhine against Pollution	No	Regional	5	Environmental	SDG 6	1	0	0	0
NVC	Nordic Centre for Welfare and Social Issues	No	Regional	5	Social	SDG 1	1	0	0	0
WAEC	West African Examinations Council	No	Regional	5	Social	SDG 4	1	0	0	0
SELA	Latin American Economic System	No	Regional	28	Economic	SDG 8	1	0	0	0
EADB	East African Development Bank	No	Regional	4	Economic	SDG 8	1	1	0	1
ISRBC	International Sava River Basin Commission	No	Regional	4	Social and environmental	SDG 6 and SDG 11	1	0	0	0
BOBP	Bay of Bengal Programme Inter-Governmental Organization	No	Regional	4	Environmental	SDG 14	1	1	1	1
EAC	East African Community	No	Regional	9	Economic and social	SDG 8 and SDG 16	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
SRDO	Senegal River Development Organization	No	Regional	4	Environmental	SDG 6	1	0	0	0
NAPPO	North American Plant Protection Organization	No	Regional	3	Environmental	SDG 15	1	0	0	0
BENELUX	Benelux Economic Union	No	Regional	3	Economic	SDG 8	1	0	0	0
BC	Baltic Council	No	Regional	3	Social	SDG 4	1	0	0	0
BORGIP	Benelux Organization for Intellectual Property	No	Regional	3	Economic	SDG 8	1	1	0	1
NPI	Nordic Patent Institute	No	Regional	4	Economic	SDG 8	1	0	0	0
UNIDO	UN Industrial Development Organization	Yes	Global	176	Economic	SDG 8 and SDG 9	1	1	1	1
NEAFC	Northeast Atlantic Fisheries Commission	No	Regional	5	Environmental	SDG 14	1	0	0	0
GEF	Global Environment Facility	No	Global	173	Environmental	SDG 13	1	1	1	1
EURAMET	European Association of National Metrology Institute	No	Regional	37	Economic	SDG 9	1	0	0	0
CBSS	Council of the Baltic Sea States	No	Regional	11	Social	SDG 16	1	1	1	1
OTIF	Central Office for International Railway Transport	No	Regional	45	Economic	SDG 9	1	1	0	0
UNDP	UN Development Programme	Yes	Global	193	Social and environmental	SDG 1, SDG 13 and SDG 16	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
UNEP	UN Environment Programme	Yes	Global	193	Environmental	SDG 13, SDG 14 and SDG 15	1	1	1	1
UNFPA	UN Population Fund	Yes	Global	193	Social	SDG 3	1	0	0	0
UNHABITAT	UN Human Settlements Programme	Yes	Global	193	Social	SDG 11	1	1	0	1
UNICEF	Unicef	Yes	Global	193	Social	SDG 1	1	1	1	1
WFP	UN World Food Programme	Yes	Global	193	Social	SDG 2	1	1	1	1
UNIDIR	UN Institute for Disarmament Research	Yes	Global	193	Social	SDG 16	1	1	1	1
UNITAR	UN Institute for Training and Research	Yes	Global	193	Social	SDG 4	1	1	1	1
UNSSC	UN System Staff College	Yes	Global	193	Social	SDG 4	1	1	1	1
UNU	UN University	Yes	Global	193	Social	SDG 4	1	1	1	1
ITC	International Trade Centre	Yes	Global	157	Economic	SDG 8	1	1	1	1
UNCTAD	UN Conference on Trade and Development	Yes	Global	193	Economic	SDG 8	1	0	0	0
UNHCR	Office of the UN High Commissioner for Refugees	Yes	Global	193	Social	SDG 1	1	1	1	1
UNOPS	UN Office for Project Services	Yes	Global	193	Economic and social	SDG 9 and SDG 11	1	0	0	0
UNRWA	UN Relief and Works Agency for Palestine Refugees in the Near East	Yes	Global	193	Social	SDG 1 and SDG 16	1	1	1	1
UNWOMEN	UN Entity for Gender Equality and the Empowerment of Women	Yes	Global	193	Social	SDG 5	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
UNECA	Economic Commission for Africa	Yes	Regional	54	Economic	SDG 8	1	1	1	1
UNECE	Economic Commission for Europe	Yes	Regional	56	Economic	SDG 8	1	1	1	1
UNECLAC	Economic Commission for Latin America and the Caribbean	Yes	Regional	46	Economic	SDG 8	1	1	0	1
UNESCAP	Economic and Social Commission for Asia and the Pacific	Yes	Regional	53	Economic	SDG 8	1	1	1	1
UNAIDS	Joint UN Programme on HIV/AIDS	Yes	Global	193	Social	SDG 3	1	1	1	1
IPU	Inter-Parliamentary Union	No	Global	179	Social	SDG 16	1	1	1	1
OHCHR	Office of the UN High Commissioner for Human Rights	Yes	Global	193	Social	SDG 16	1	0	0	0
UNODC	UN Office on Drugs and Crime	Yes	Global	193	Social	SDG 16	1	1	1	1
UNFCCC	UN Framework Convention on Climate Change	Yes	Global	193	Environmental	SDG 13	1	1	1	1
UNOHRLLS	UN Office of the High Representative for the Least Developed Countries	Yes	Global	193	Social	SDG 1	1	1	1	1
IOCUNESCO	Intergovernmental Oceanographic Commission of UNESCO	Yes	Global	150	Environmental	SDG 14	1	0	0	0
UNEPWCMC	UNEP World Conservation Monitoring Centre	Yes	Global	193	Environmental	SDG 15	1	0	0	0
UNCCD	UN Convention to Combat Desertification	Yes	Global	193	Environmental	SDG 15	1	0	0	0
IUCN	International Union for Conservation of Nature	No	Global	170	Environmental	SDG 14 and SDG 15	1	1	1	1

Table S4.1. List of international organizations included in the empirical studies *(continued)*

Abbreviation	Full organization name	UN	Geo.	Ms.	Main sustainability dimension	Main SDG issue area	Included in analysis of chapter			
							5	6	7a	7b
CBD	Convention on Biological Diversity Secretariat	No	Global	195	Environmental	SDG 14 and SDG 15	1	0	0	0
UNEPCTCN	UNEP Climate Technology Centre and Network	Yes	Global	193	Environmental	SDG 13	0	1	0	1
PARIS21	Partnership in Statistics for Development in the 21st Century	No	Global	34	Social	SDG 17	1	1	1	1
UNWATER	UN Water	Yes	Global	193	Environmental	SDG 6	1	1	1	1
UNENERGY	UN Energy	Yes	Global	193	Social	SDG 7	1	0	0	0
UNCDF	UN Capital Development Fund	Yes	Global	193	Economic and social	SDG 1 and SDG 8	1	1	1	1
RAMSAR	Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat	Yes	Global	171	Environmental	SDG 15	1	1	1	1

Name and manual coding of international organizations included in the empirical analyses of chapters 5, 6 and 7, where '1' indicates an organization was included in the analysis, and '0' indicates the organization was not included. For chapter 7, the international organizations included in the analysis over time are listed under 7a, and the organizations included in the analysis of 2019 only are under 7b. UN = Part of UN system; Geo. = geographical scope; Ms. = member states count.

Supporting material to chapter 5

Table S5.1. Descriptive statistics of international organizations included in the analysis

Subset of international organizations	Count
Total	276
Part of UN System	47
Not part of UN System	229
With a global scope	96
With a regional scope	180
Working on economic development	142
Working on social development	139
Working on environmental development	76
Working on SDG 1	41
Working on SDG 2	35
Working on SDG 3	29
Working on SDG 4	38
Working on SDG 5	23
Working on SDG 6	32
Working on SDG 7	26
Working on SDG 8	109
Working on SDG 9	56
Working on SDG 10	21
Working on SDG 11	34
Working on SDG 12	27
Working on SDG 13	29
Working on SDG 14	45
Working on SDG 15	36
Working on SDG 16	64
Working on SDG 17	24

Description of set of International Organizations. As an international organization can work on more than one SDG and dimension, these subsets add up to more than the total set.

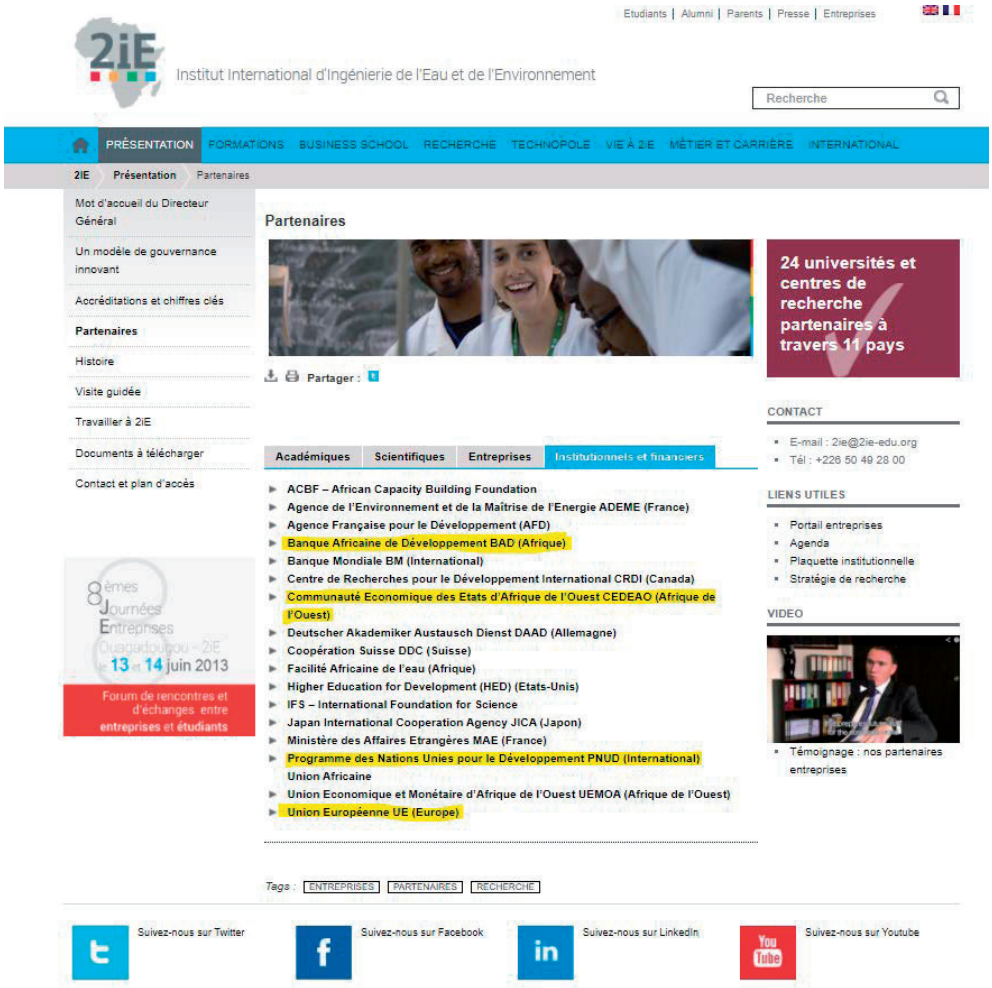


Figure S5.1. First example of inter-organizational hyperlink

Example of hyperlinks reflecting inter-organizational relations on the website of an international organization. The image shows the 2013 website of the Institut International d'Ingénierie de l'Eau et de l'Environnement (www.2ie-edu.org). Highlighted are hyperlinks to institutional and financing partners, amongst others the African Development Bank (www.afdb.org), Economic Community of West African States (www.ecowas.int), the UN Development Programme (www.undp.org) and the European Union (www.europa.eu). This archived webpage can be accessed through: https://web.archive.org/web/20130616044042/http://www.2ie-edu.org/presentation/partenaires/#institutionnels-et-financiers

Figure S5.2. Second example of inter-organizational hyperlink

Example of hyperlinks reflecting inter-organizational relations on the website of an international organization. The image shows the 2018 website of the African, Caribbean and Pacific Group of States (ACP, www.acp.int). Highlighted are hyperlinks to other international organizations with which ACP has joint programmes and activities. These are, amongst others, the Action Against Desertification initiative, together with the Food and Agriculture Organization (www.fao.org); and the African Peace Facility and ACP-EU Energy Facility, both with the European Union (www.europa.eu). This archived webpage can be accessed through: https://web.archive.org/web/20180626131922/acp.int/content/2nd-call-proposals-acp-eu-cooperation-programme-science-and-technology-ii-st-ii

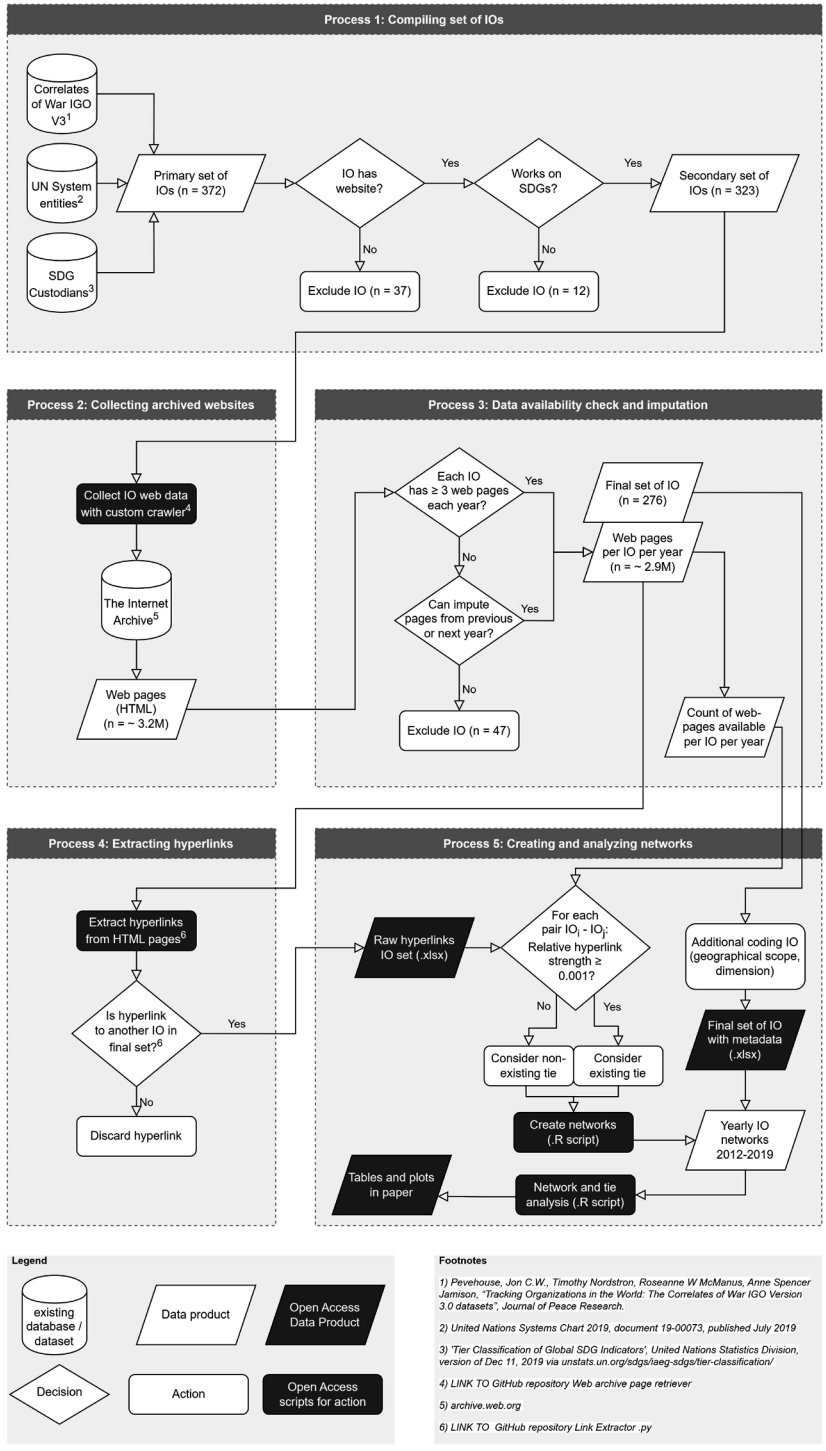


Figure S5.3. Visualization of the data collection process

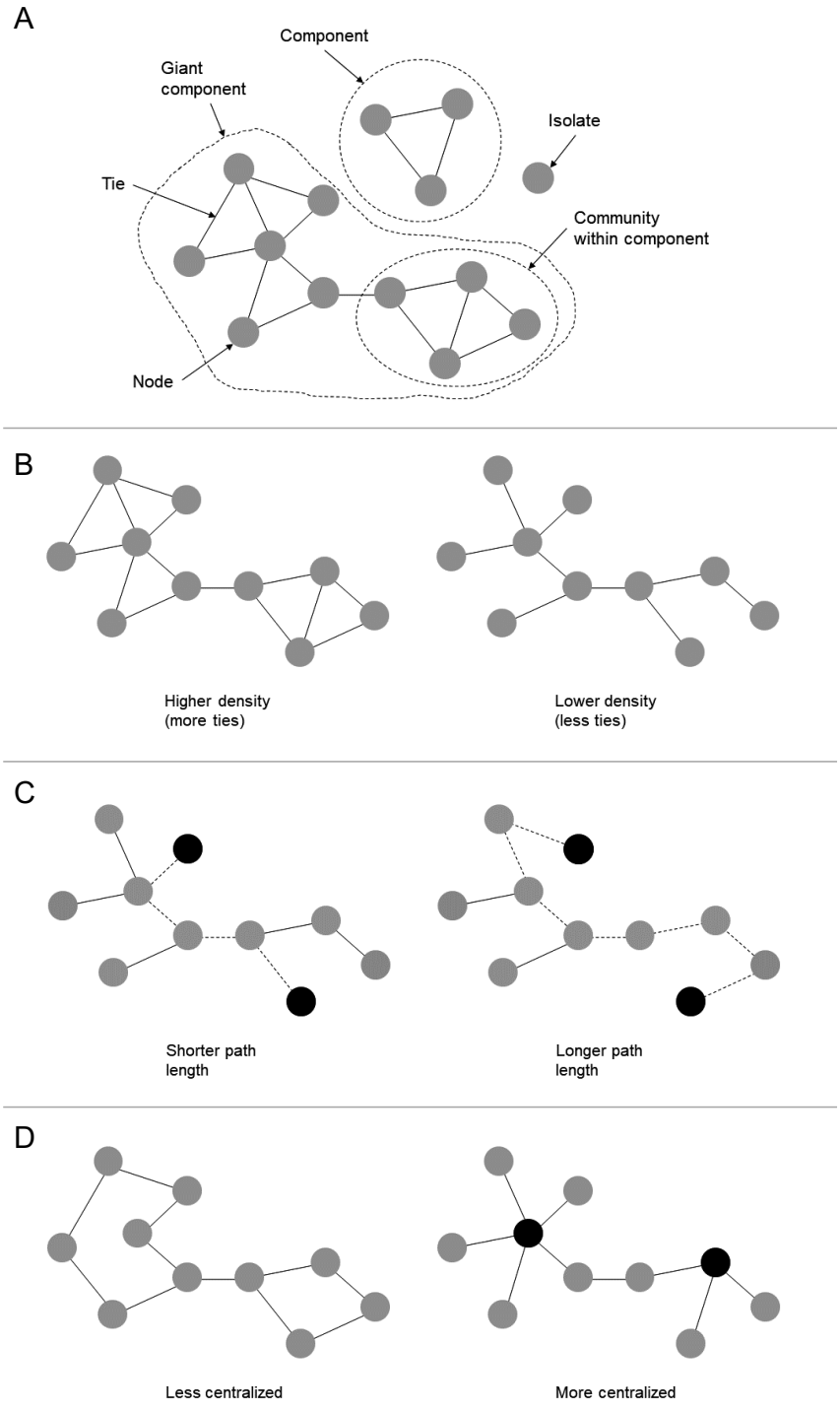


Figure S5.4. Visual explanation of network measures fragmentation
Visualization of different network parts and measures used in the analysis.

Supporting material to chapter 6

Table S6.1. List of keywords for the indicator SDG use

Keywords *SDG Use*
SDG(s)
SDG1, SDG2, etc.
Sustainable Development Goal(s)
2030 Agenda
Agenda 2030
Leave No One Behind

Table S6.2. List of keywords for the indicator policy integration

Keywords *Integration Saliency*
interlinkages
interlinked
Interconnected(ness)
tradeoff
synergy
mainstreaming
holistic
nexus
whole-of-government
whole-of-society
interorganizational
interdepartmental
interorganizational relations
interorganizational coordination
landscape approach
landscape management
interaction management
policy mixes
integrated management
integrated indivisible
policy coherence
coherent policy
policy integration
integration policy

Table S6.2. List of keywords for the indicator policy integration *(continued)*

Keywords Integration Saliency
policy coordination
coordinate policy
issue linkage
issue links
issue integration
institutional integration
institutional interlinkages
institutional interaction

Keywords used to measure *Integration Saliency*. For all keywords, word stems with wildcards in between are used for text matching. For example, the keyword 'coherent policy' is matched as 'coheren*polic*' where * indicates any other letters or spaces. So the keyword 'coherent policy' as listed here, also matches 'coherent policies', 'coherence of policies', 'coherence for policy'.

Table S6.3. Error rates conversion of HTML into plain text

Item	% webpages	n webpages	n international organizations
Collected webpages	100%	1,349,985	315
Converted into plain text	39.7%	536,507	
Not converted – too short	42.7%	576,574	
Not converted – not English	14.7%	198,235	
Not converted – conversion error	2.9%	3,8669	
International organizations with at least 20 converted pages per year available		521,872	159

Table S6.4. Pearson correlation coefficients indicators

	Integration Saliency 2015	Integration Saliency 2017	Integration Saliency 2019	Policy domains per page 2015 - log	Policy domains per page 2017 - log	Policy domains per page 2019 - log	SDG Use 2015	SDG Use 2017	IO Size	Environmental IO	UN System	Issue-scope: Multi	Issue-scope: Omni	SDG Use 2019
Integration Saliency 2015	1.0000													
Integration Saliency 2017	0.8392	1.0000												
Integration Saliency 2019	0.6775	0.7601	1.0000											
Policy domains per page 2015 - log	0.2949	0.2799	0.3404	1.0000										
Policy domains per page 2017 - log	0.3053	0.2751	0.2971	0.7326	1.0000									
Policy domains per page 2019 - log	0.2974	0.2782	0.2921	0.7187	0.8179	1.0000								
SDG Use 2015	0.3775	0.3327	0.2731	0.1276	0.1120	0.0967	1.0000							
SDG Use 2017	0.5104	0.4335	0.3878	0.1731	0.2547	0.2271	0.6355	1.0000						
IO Size	0.1490	0.1452	0.0864	0.1703	0.2344	0.2347	0.0729	0.2855	1.0000					
Environmental IO	0.0887	0.0984	0.0924	0.1293	0.0887	0.1109	0.0856	0.0204	-0.0750	1.0000				
UN System	0.2538	0.2011	0.1753	0.2529	0.3375	0.3280	0.2190	0.3886	0.7488	-0.1045	1.0000			
Issue-scope: Multi	0.0147	0.0128	-0.0206	0.1551	0.1545	0.2099	0.0359	0.0581	0.0299	0.0550	-0.0130	1.0000		
Issue-scope: Omni	0.0043	0.0251	0.1038	0.1514	0.0894	0.0738	0.0795	-0.0247	-0.1520	0.4411	-0.1043	-0.1518	1.0000	
SDG Use 2019	0.4503	0.3621	0.3562	0.1703	0.2224	0.2311	0.5874	0.8564	0.2574	0.0286	0.3645	0.0593	-0.0080	1.0000

Legend		
Very weak	0.0000	0.3000
Weak	0.3000	0.5000
Moderate	0.5000	0.7000
Strong	0.7000	0.9000
Very strong	0.9000	0.9999

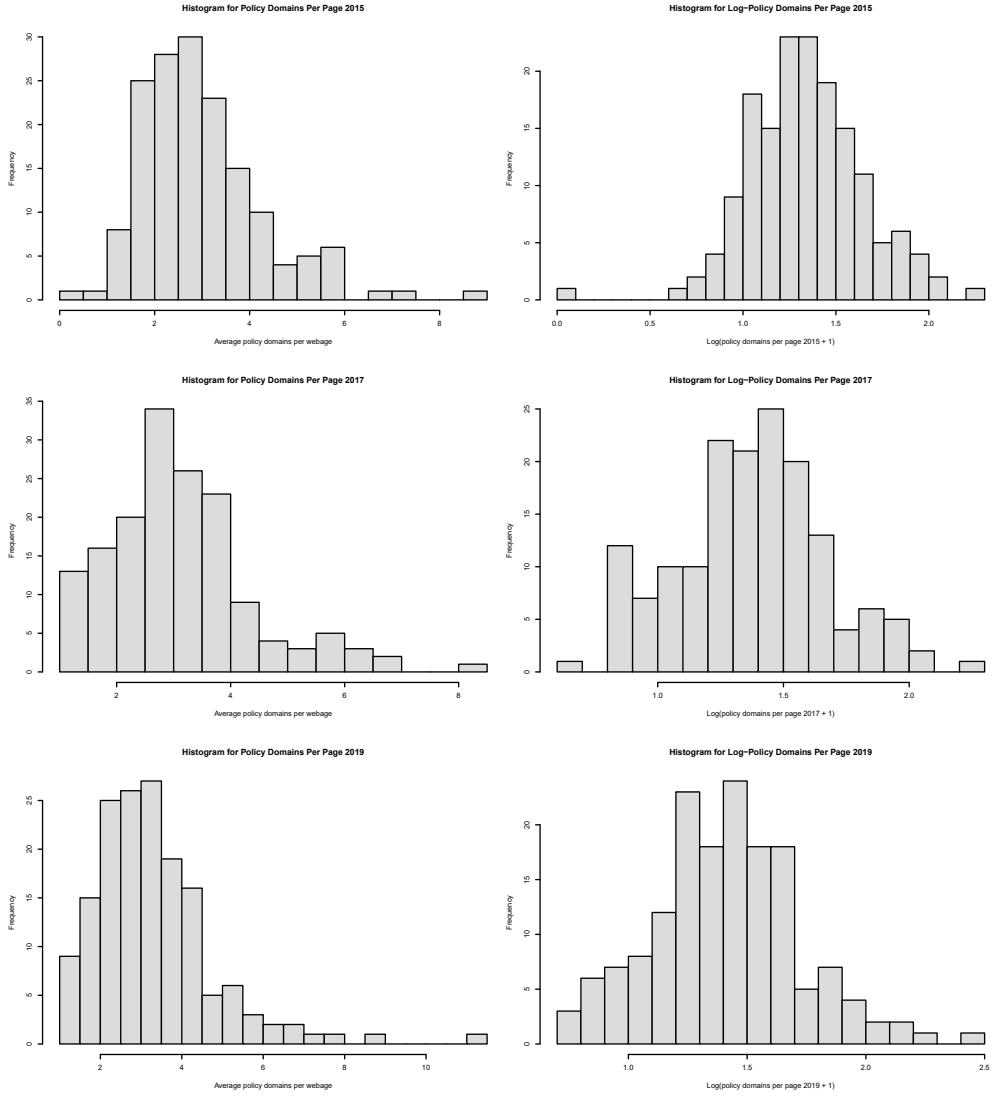


Figure S6.1. Histograms of policy domains per page

Histograms for the untransformed indicator *Policy Domains Per Page* in 2015, 2017 and 2019 from top to bottom (left side), and for the log-transformed value (right side).

Supporting material to chapter 7

Table S7.1. SDG prioritization in 2013, 2015, 2017 and 2019 across all international organizations

SDG	2013	2015		2017		2019		Δ 2013-2019	
SDG 1	0.184	0.166	*	0.167		0.172		-0.013	*
SDG 2	0.155	0.164		0.170		0.171		0.016	
SDG 3	0.160	0.176		0.157		0.162		0.001	
SDG 4	0.283	0.290		0.305		0.303		0.020	
SDG 5	0.151	0.166		0.182		0.199	*	0.048	*
SDG 6	0.158	0.153		0.151		0.164		0.007	
SDG 7	0.111	0.121		0.119		0.113		0.002	
SDG 8	0.161	0.183		0.195	*	0.214	*	0.053	*
SDG 9	0.281	0.301		0.320	*	0.340	*	0.059	*
SDG 10	0.091	0.101		0.105		0.119	*	0.027	*
SDG 11	0.147	0.153		0.174		0.181		0.034	*
SDG 12	0.227	0.230		0.247	*	0.274	*	0.047	*
SDG 13	0.230	0.249	*	0.256		0.259		0.029	*
SDG 14	0.122	0.114		0.131	*	0.135		0.014	*
SDG 15	0.103	0.092		0.102		0.110	*	0.007	*
SDG 16	0.218	0.211		0.202		0.211	*	-0.007	
SDG 17	0.311	0.309		0.332	*	0.374	*	0.063	*

SDG prioritization, per year, based on the mean of SDG_A *prioritization* across all international organizations for which data is available in all years (n = 114). Color scale indicates relatively lower (red) and relatively higher (green) prioritization of SDGs. Year-by-year differences were tested with Wilcoxon signed-rank test, a star * after a value indicates a statistically significant ($p < 0.05$) difference as compared to the previous year. In the outermost right column, the difference between the first (2013) and last (2019) year is given (Δ2013-2019), where negative values indicate a decrease in SDG prioritization and positive values an increase. Again a star * indicates a statistically significant ($p < 0.05$) difference in SDG_A *prioritization* between 2013 and 2019.

Table S7.2. SDG prioritization within vs. outside the UN system

SDG	Outside UN system	Within UN system	
SDG 1	0.134	0.269	*
SDG 2	0.181	0.199	
SDG 3	0.142	0.218	*
SDG 4	0.265	0.308	
SDG 5	0.151	0.291	*
SDG 6	0.147	0.198	
SDG 7	0.110	0.109	
SDG 8	0.167	0.265	*
SDG 9	0.320	0.372	
SDG 10	0.101	0.160	*
SDG 11	0.162	0.221	*
SDG 12	0.245	0.307	*
SDG 13	0.225	0.317	
SDG 14	0.158	0.110	
SDG 15	0.102	0.090	
SDG 16	0.188	0.256	*
SDG 17	0.334	0.428	*

SDG prioritization, outside and within the UN system, based on the mean of *SDG prioritization* across all international organizations for which data is available in 2019 (n = 144). The color scale indicates relatively lower (red) and relatively higher (green) prioritization of SDGs. Differences between UN (n = 38) and non-UN (n = 2016) international organizations were tested with Wilcoxon rank sum test (Mann Whitney U test), a star * indicates a statistically significant ($p < 0.05$) difference between organizations within and outside the UN system.

Table S7.3. SDG prioritization for economic vs. social vs. environmental international organizations

SDG	Economic	Social	
SDG 1	0.216	0.165	
SDG 2	0.148	0.234	
SDG 3	0.130	0.230	
SDG 4	0.233	0.330	*
SDG 5	0.164	0.240	*
SDG 6	0.105	0.139	
SDG 7	0.130	0.073	*
SDG 8	0.253	0.146	
SDG 9	0.387	0.285	*
SDG 10	0.149	0.123	
SDG 11	0.166	0.186	
SDG 12	0.254	0.233	
SDG 13	0.216	0.179	
SDG 14	0.056	0.070	
SDG 15	0.046	0.072	
SDG 16	0.137	0.325	*
SDG 17	0.364	0.331	

SDG	Economic	Environmental	
SDG 1	0.216	0.082	*
SDG 2	0.148	0.153	
SDG 3	0.130	0.096	
SDG 4	0.233	0.111	*
SDG 5	0.164	0.057	*
SDG 6	0.105	0.317	*
SDG 7	0.130	0.098	
SDG 8	0.253	0.107	*
SDG 9	0.387	0.260	*
SDG 10	0.149	0.033	*
SDG 11	0.166	0.161	
SDG 12	0.254	0.313	
SDG 13	0.216	0.385	*
SDG 14	0.056	0.513	*
SDG 15	0.046	0.274	*
SDG 16	0.137	0.084	
SDG 17	0.364	0.329	

SDG	Social	Environmental	
SDG 1	0.165	0.082	*
SDG 2	0.234	0.153	
SDG 3	0.230	0.096	
SDG 4	0.330	0.111	*
SDG 5	0.240	0.057	*
SDG 6	0.139	0.317	*
SDG 7	0.073	0.098	
SDG 8	0.146	0.107	
SDG 9	0.285	0.260	
SDG 10	0.123	0.033	*
SDG 11	0.186	0.161	
SDG 12	0.233	0.313	
SDG 13	0.179	0.385	*
SDG 14	0.070	0.513	*
SDG 15	0.072	0.274	*
SDG 16	0.325	0.084	*
SDG 17	0.331	0.329	

SDG prioritization, for international organizations focusing primarily on economic, social, or environmental issues. Prioritization is based on the mean of SDG_A *prioritization* across economic (n = 41), social (n = 49), or environmental (n = 23) international organizations for which data is available in 2019. The color scale indicates relatively lower (red) and relatively higher (green) prioritization of SDGs. Differences between groups were tested with Wilcoxon rank sum test (Mann Whitney U test), a star * indicates a statistically significant ($p < 0.05$) difference between the two groups in the table.

2015
SDG.17
SDG.9
SDG.12
SDG.8
SDG.3
SDG.2
SDG.6
SDG.11
SDG.4
SDG.13
SDG.16
SDG.1
SDG.5
SDG.7
SDG.10
SDG.14
SDG.15
High
Low
Interlinkage score
High
Low
Prioritization
2013
SDG.17
SDG.9
SDG.12
SDG.8
SDG.6
SDG.11
SDG.4
SDG.13
SDG.3
SDG.2
SDG.1
SDG.16
SDG.5
SDG.7
SDG.10
SDG.14
SDG.15
High
Low
Interlinkage score
High
Low
Prioritization

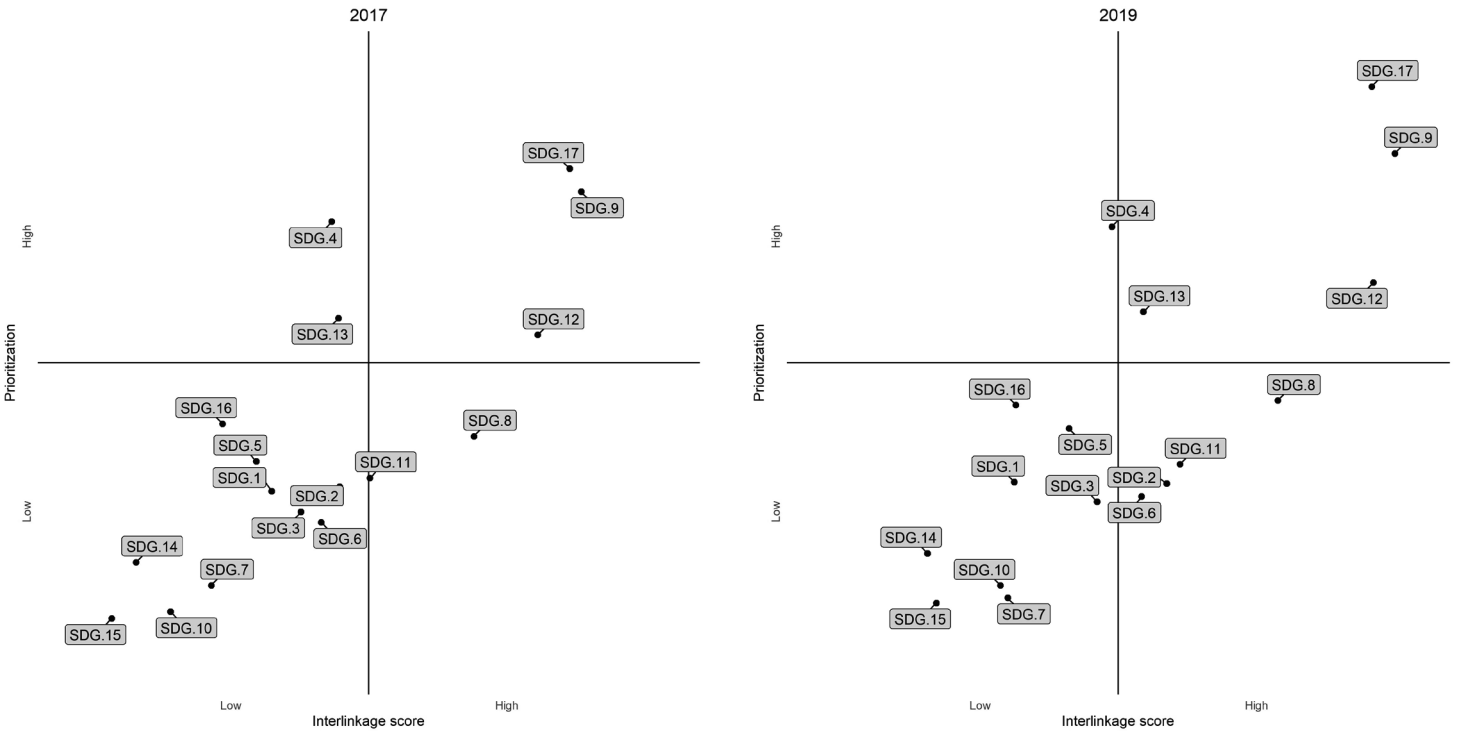


Figure S7.1. SDG prioritization and interlinkage score in 2013, 2015, 2017 and 2019

Normalized values of *SDG_A prioritization* (Y-axis) and *SDG_A interlinkage score* (X-axis) for each SDG, in 2013, 2015, 2017 and 2019. Data was aggregated for all international organizations for which data is available in all years (n = 114).

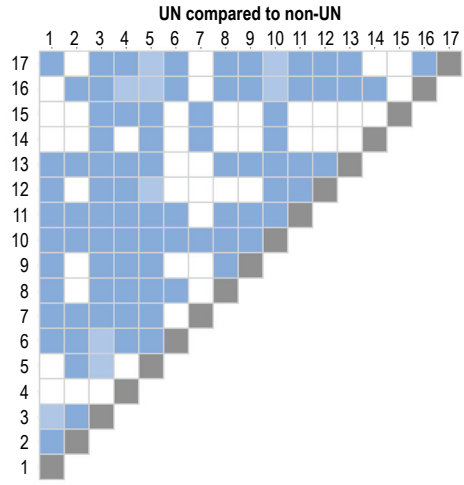


Figure S7.2. Comparing pairwise SDGA-B interlinkages within vs. outside the UN system

Significant difference ($p < 0.05$) in SDGA-B interlinkage for each pair of SDGs between international organizations within and outside the UN system. Wilcoxon rank-sum test was used for independent samples, for all international organizations within ($n = 38$) and outside ($n = 106$) the UN system for which data was available in 2019. White indicates no significant difference between the groups, light blue a small difference and dark blue a moderate difference, where the UN system organizations mention these two SDGs together significantly more.

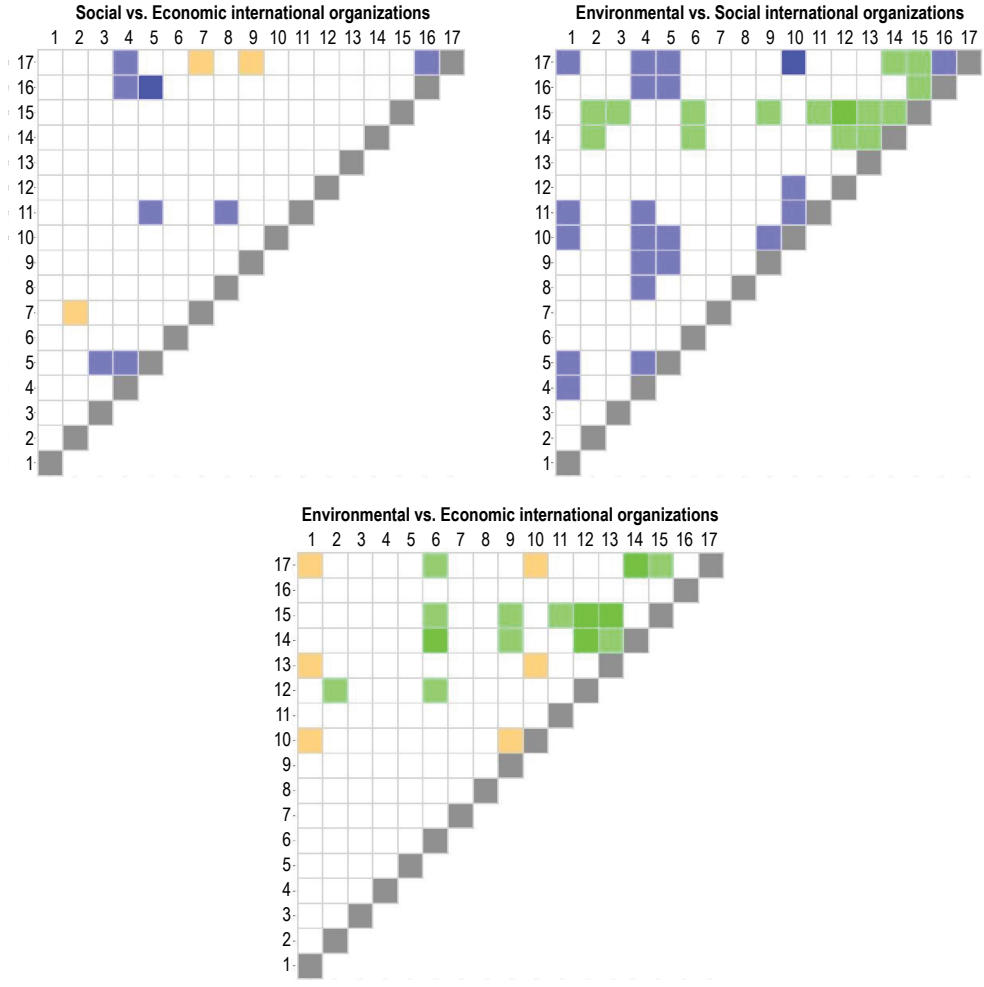


Figure S7.3. Comparing pairwise SDGA-B interlinkages for economic, social and environmental international organizations

Significant differences ($p < 0.05$) in SDGA-B interlinkage for each pair of SDGs, for international organizations working primarily on social vs. economic issues (top-left), on social vs. environmental issues (top-right) or on environmental vs. economic issues (bottom). Data was aggregated for economic (n = 41), social (n = 49) and environmental (n = 23) international organizations for which data was available in 2019. Wilcoxon rank sum test (Mann Whitney U test) was used to test for statistically significant ($p < 0.05$) differences. White indicates no significant difference, colored squares indicate a significant difference between the groups of international organizations. Green indicates that environmental international organizations mention these two SDGs together significantly more. Blue indicates that social international organizations mention these two SDGs together significantly more. Yellow indicates that economic international mention these two SDGs together significantly more.

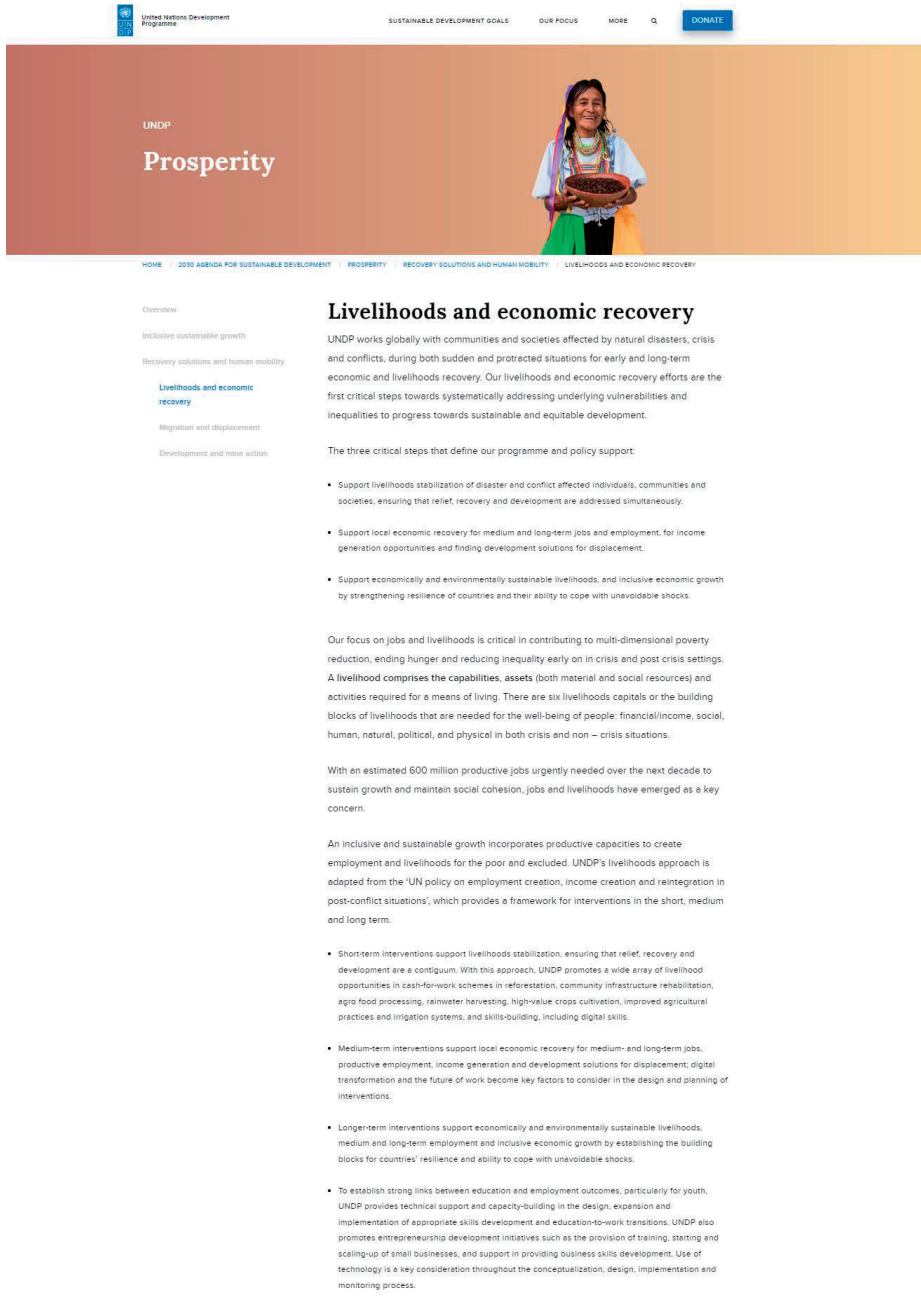


Figure S7.4. Example of archived webpage of two linked SDGs

Example of an archived webpage (www.undp.org, 2019) describing the topics of livelihoods and poverty (SDG 1) and, in a separate paragraph, education and training (SDG 4). Archived webpage is available at: https://web.archive.org/web/20191104145921/https://www.undp.org/content/undp/en/home/2030-agenda-for-sustainable-development/prosperity/recovery-solutions-and-human-mobility/economic-recovery.html

Supporting material to chapter 8

Table S8.1. List of documents analyzed from the Convention on Biological Diversity

Number	Document title	CBD Document number	Related to
1	Post-2020 global biodiversity framework: discussion paper	CBD/POST2020/PREP/1/1	COP15
2	Update of the zero draft of the post-2020 global biodiversity framework	CBD/POST2020/PREP/2/1	COP15
3	Synthesis of views of Parties and observers on the scope and content of the post-2020 global biodiversity framework	CBD/POST2020/PREP/1/INF/1	COP15
4	Second synthesis of views of Parties and observers on the scope and content of the post-2020 global biodiversity framework	CBD/POST2020/PREP/1/INF/2	COP15
5	Updated synthesis of the proposals of Parties and observers on the structure of the post-2020 global biodiversity framework and its targets	CBD/POST2020/PREP/1/INF/3	COP15
6	Report of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework on its first meeting	CBD/WG2020/1/5	OWG1
7	Report of the Regional Consultation Workshop on the Post-2020 Global Biodiversity Framework for Asia and the Pacific	CBD/POST2020/WS/2019/1/2	OWG1
8	Report of the Regional Consultation on the Post-2020 Global Biodiversity Framework for the Western European and Others Group and Other Members of the European Union	CBD/POST2020/WS/2019/2/2	OWG1
9	Report of the Regional Consultation on the Post-2020 Global Biodiversity Framework for Africa, Addis Ababa, 2-5 April 2019	CBD/POST2020/WS/2019/3/2	OWG1
10	Report of the Regional Consultation on the Post-2020 Global Biodiversity Framework for Central and Eastern Europe	CBD/POST2020/WS/2019/4/2	OWG1
11	Report of the Regional Consultation on the Post-2020 Global Biodiversity Framework for Latin America and the Caribbean	CBD/POST2020/WS/2019/5/2	OWG1
12	Report of the consultation workshop of biodiversity related Conventions on the Post-2020 Global Biodiversity Framework, Bern, 10-12 June 2019	CBD/POST2020/WS/2019/6/2	OWG1
13	Report of the Expert Workshop to Develop Recommendations for Possible Gender Elements in the Post-2020 Global Biodiversity Framework	CBD/GB/OM/2019/1/2	OWG1

Table S8.1. List of documents analyzed from the Convention on Biological Diversity *(continued)*

Number	Document title	CBD Document number	Related to
14	Report of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework on its second meeting	CBD/WG2020/2/4	OWG2
15	Report of the Thematic Workshop on Ecosystem Restoration for the Post-2020 Global Biodiversity Framework	CBD/POST2020/WS/2019/11/5	OWG2
16	Report of the Thematic Workshop on Marine and Coastal Biodiversity for the Post-2020 Global Biodiversity Framework	CBD/POST2020/WS/2019/10/2	OWG2
17	Report of the Global Thematic Dialogue for Indigenous Peoples and Local Communities on the Post-2020 Global Biodiversity Framework	CBD/POST2020/WS/2019/12/2	OWG2
18	Report on the Workshop on the Evidence Base for the Post-2020 Global Biodiversity Framework: fifth edition of the global Biodiversity Outlook and IPBES Global Assessment	CBD/POST2020/WS/2019/14/2	OWG2
19	Report of the Thematic Workshop on Area-based Conservation Measures for the Post-2020 Global Biodiversity Framework	CBD/POST2020/WS/2019/9/3	OWG2
20	Report of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework on its third meeting (part II)	CBD/WG2020/3/7	OWG3
21	Report on the thematic consultation on capacity-building and technical and scientific cooperation for the post-2020 global biodiversity framework	CBD/POST2020/WS/2020/2/4	OWG3
22	Report of the Ad Hoc Technical Expert Group on Digital Sequence Information on Genetic Resources	CBD/DSI/AHTEG/2020/1/7	OWG3
23	Report of the Liaison Group on the Cartagena Protocol on Biosafety on its fourteenth meeting	CBD/CP/LG/2020/1/4	OWG3
24	Report of the second global thematic dialogue for indigenous peoples and local communities on the post-2020 global biodiversity framework	CBD/POST2020/WS/2020/5/2	OWG3
25	Report of the Informal Advisory Committee to the Biosafety Clearing-House on its eleventh meeting	CBD/CP/BCH-IAC/11/3	OWG3

Table S8.2. Keywords for collecting tweets on biodiversity

Keywords to collect biodiversity tweets
biodiversity
post2020
cop15
fornature
natureforlife
nature AND futures AND framework
ipbes
aichi AND target*

Table S8.3. Keywords for filtering tweets to relate to SDGs

Keywords to filter tweets
sdg*
sustainable development goal*
global goal*
agenda 2030
2030 agenda
leave no one behind

List of publications connected to this thesis

Academic publications

1. **Bogers, M.**, Biermann, F., Kalfagianni, A. & Kim., R.E. (under review). How international organizations link the Sustainable Development Goals in policy practice: Insights from a large-N analysis.
2. **Bogers, M.**, Biermann, F., Kalfagianni, A. & Kim, R. E. (under review) The influence of the Sustainable Development Goals on the Kunming-Montreal Global Biodiversity Framework.
3. **Bogers, M.**, Biermann, F., Kalfagianni, A., & Kim, R.E. (2023). The SDGs as integrating force in global governance? Challenges and opportunities. *International Environmental Aagreements: Politics Law and Economics,* 23, 157-164.
4. **Bogers, M.**, Biermann, F., Kalfagianni, A. & Kim, R. E. (2022). Sustainable Development Goals fail to advance policy integration: A large-n text analysis of 159 international organizations. *Environmental Science & Policy,* 138, 134-145.
5. **Bogers, M.**, Biermann, F., Kalfagianni, A., Kim, R. E., Treep, J., & de Vos, M. G. (2022). The impact of the Sustainable Development Goals on a network of 276 international organizations. *Global Environmental Change,* 76, 102567.
6. Hickmann, T., Biermann, F., Spinazzola, M., Ballard, C., **Bogers, M.**, Forestier, O., Kalfagianni, A., Kim, R.E., Montesano, F.S., Peek, T., Sénit, C., van Driel, M., Vijge, M.J. & Yunita, A. (2022). Success factors of global goal-setting for sustainable development: Learning from the Millennium Development Goals. *Sustainable Development*.
7. Pradhan, P., Van Vuuren, D., Wicke, B., **Bogers, M.**, Di Lucia, L., Hickmann, T., Kalfagianni, A., Leininger, J., Van Soest, H., Warchold, A., & Zimm, C. (2022). Methods for analyzing steering effects of global goals. In Biermann, F., Hickmann, T. & Sénit, C. (Eds.) *The political impact of the Sustainable Development Goals: Transforming governance through global goals?* Cambridge, UK: Cambridge University Press, pp. 178-207.
8. Vijge, M.J., Biermann, F., Kim, R.E., **Bogers, M.**, Van Driel, M., Montesano, F.S., Yunita, A., & Kanie, N. 2020. Governance through global goals. In Biermann, F. & Kim., R.E., (Eds.). *Architectures of earth system governance. Institutional complexity and structural transformation.* Cambridge, UK: Cambridge University Press, pp. 254-274.

Non-academic publications

9. **Bogers, M**. & van Driel, M. 2023. *Multi-level acceleration for the SDGs in the UNECE region: Summary report from UNECE Regional Forum 2023 side event*. GlobalGoals project website.
10. **Bogers, M.** 2022. *SDGs have strengthened silos in network of international organizations.* Article for Copernicus Institute of Sustainable Development.

11. **Bogers, M.**, Montesano, F.S. & van Driel, M. 2022. *The Netherlands must bring UN Sustainable Development Goals into its political debate.* Guest article for The Loop, European Consortium for Political Research.
12. **Bogers, M.**, Montesano, F.S. & van Driel, M. 2022. *Duurzame Ontwikkelingsdoelen? Het centrum van de macht houdt ze liever aan de flanken.* Guest article for the Dutch Association of the UN (NVVN).
13. **Bogers, M.**, & van Driel, M. 2021. *Geen groen, maar een 'regenboogherstel' na de coronacrisis.* Guest article for the Dutch Association of the UN (NVVN).
14. **Bogers, M.** & van Driel, M. 2021. *Key insights public panel discussion 'The transformative potential of the SDGs – The case of the Netherlands.'* GlobalGoals project website.

List of presentations of empirical chapters

Presentations of earlier versions of chapter 5.

- Utrecht University International SDG Research Symposium. *The Effects of the SDGs: Insights from a Dynamic Network Analysis of 313 Intergovernmental Organizations.* 9-11 June 2020. Online.
- St. Petersburg Conference on Networks in the Global World. *Effects of the Sustainable Development Goals on Global Governance Architectures: Insights from a Dynamic Network Analysis of 276 International Organizations.* 7-9 July 2020. Online.
- Bratislava Conference on Earth System Governance. *Reducing fragmentation with global goals? The effects of the Sustainable Development Goals on the network of international organizations from 2012 to 2019'.* 7-10 September 2021. Online.
- International Studies Association Annual Convention 2022. *Reducing fragmentation with global goals? The impact of the Sustainable Development Goals on a network of 276 international organizations.* 28 March – 2 April 2022. Nashville, USA

Presentations of earlier versions of chapter 6.

- University of Sussex Evidence for Action Symposium. *An integrated approach to global issues? Effects of the SDGs on issue integration in international organizations.* 20-22 July 2021. Online.
- Bratislava Conference on Earth System Governance. *An integrated approach to global issues? Effects of the Sustainable Development Goals on issue integration in international organizations.* 7-10 September 2021. Online.
- International Studies Association Annual Convention 2022. *Sustainable Development Goals fail to advance policy integration. A large-N text analysis of 159 international organizations.* 28 March – 2 April 2022. Nashville, USA
- Toronto Conference on Earth System Governance. *Sustainable Development Goals fail to advance policy integration. A large-N text analysis of 159 international organizations.* 20-24 October 2022. Toronto, Canada.

Chapter 7 has not been presented at international conferences.

Presentations of earlier versions of chapter 8.

- Toronto Conference on Earth System Governance. *Do the SDGs matter for the post-2020 biodiversity framework? Insights from Twitter.* 20-24 October 2022. Toronto, Canada

Acknowledgements

Both professionally and personally, I owe a debt of gratitude to the many people that have supported me during the PhD trajectory.

To my supervisors, Frank Biermann, Agni Kalfagianni, and Rak Kim: Thank you for your guidance and for giving me the space to explore my own ideas. I am also particularly grateful that you created opportunities to support my career ambitions, and that you've encouraged me to make use of opportunities when they arose.

To Jelle Treep, Martine de Vos and Kees van Eijden from the Research Data Management team: Thank you for believing in my idea to scrape millions of webpages, for your many hours of work and lines of code, and for the troubleshooting on R and Python when I got stuck.

To my fellow GlobalGoals PhDs, Abbie, Francesco and Melanie: Thank you for the many discussions, both on- and off-topic, for the collaborations, for the support and lovely dinners. I am very grateful we got to share this experience and I'm excited to see where we all go next.

To Laura and Francesco: Thank you for standing by me, on the big day and all days leading up to it.

To all other colleagues at the Copernicus Institute: Thank you for providing a stimulating environment, for the many interesting presentations and coffee discussions.

To my family: Thank you for supporting me in whatever I choose to do, for your unshakeable trust in my abilities, for cheering me on along the way, and for providing the comfort and joy of family time when I need it most.

To my friends: Thank you for the countless hours of board game nights, dinners, kitesurf days, doggie walks, pancakes, weekend getaways, lama picnics, concerts, festivals, video calls, vacations, weddings and road trip plannings. Hanging out with you is fantastically fun and energizing, and I am incredibly grateful to have had your friendship and support during, before and hopefully way beyond this PhD.

About the author

Maya Bogers (1991) was born and raised in Utrecht, the Netherlands. She studied a bachelor's degree in Biomedical Sciences at Utrecht University from 2009 to 2013. During her studies, she became increasingly interested in topics beyond human biology. She pursued a minor in journalism at the Hogeschool Utrecht, participated in the young innovators Honors program at Utrecht University and took entrepreneurial classes at Hong Kong University.

Her enthusiasm for a wide variety of topics led her to pursue the multidisciplinary research master Innovation Sciences from 2015-2018. Here, her main interests included innovation policy and startup ecosystems. She wrote her thesis on collaboration networks for research and development, analyzing the effectiveness of the Dutch Topsector policy approach in facilitating collaborations across policy domains. During this time, she also volunteered in the Utrecht startup community to support social entrepreneurship. Nearing the end of her master's, she decided to expand her horizon and obtain international experience by working for the Dutch Ministry of Foreign Affairs on an entrepreneurship program in Maputo, Mozambique. After returning to The Netherlands, she kept working on entrepreneurship programs throughout the Middle East and North-Africa, focusing on how to measure the effects and effectiveness of these policy programs.

In 2019, she returned to her *alma mater* to pursue a PhD at the Copernicus Institute of Sustainable Development. Her thesis focused on the impact of the SDGs on policy integration and institutional integration in international organizations, and was part of the GlobalGoals research project, led by Prof. dr. Frank Biermann. During her PhD, she was a visiting researcher at Stockholm Environment Institute in Sweden, and she had the opportunity to present her work at several international conferences. She was also a teacher in the bachelor's program Global Sustainability Science. At the time of writing, she is continuing her career at the Netherlands Scientific Climate Council as an advisor on international and national climate governance.