Master Thesis Sustainable Development

Can Global Goals enhance integration on the national level?
The transformative potential of the Sustainable Development Goals on the governance architecture in Germany

Master: Joint International Master in Sustainable Development, Faculty of Geoscience, Utrecht University
Supervisor: Prof. Dr. Frank Biermann
Second Reader: Dr. Basil Bornemann
Credits: 45 ECTS
Author: Jana Birner, 6312926, J.birner@students.uu.nl
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Abstract

With the agreement on the Sustainable Development Goals (SDGs) in 2015, states are assigned a key role in the implementation and ultimately in the achievement of an international aspirational agenda. The approach of "governance through goals" challenges national governments to introduce changes in their institutional architecture targeted at strengthening its inherent capacity for an integrated implementation. However, only limited data are available to evaluate the potential of the SDGs to transform integration on the national level. Studying the SDGs' impact on Germany's political system is particularly interesting in this context because the mandated increase of policy coherence is impeded by the strong departmental divide between German ministries (known as the Ressortprinzip) and its federal structure, with strong powers being devolved to the 16 German "Länder". Thus, this paper conducts a detailed country study with a mixed-methods approach to assess and explain the capacity of the SDGs to enhance integration through modified cooperation in the institutional framework of German sustainability governance. Change processes on the macro-level of the institutional architecture in the period of 2012 to 2019 are mapped in an extensive network and quantitative analysis that build on press releases from the 14 federal ministries. Additionally, a series of semi-structured interviews elucidates the internal micro-level perspective of ministerial SDG coordinators in order to explain the variety and conditions for integration effects. Overall, an increase in integration of the German sustainability governance architecture after 2015 is revealed. Specifically, the inclusion of non-governmental stakeholders is strengthened. However, there is no conclusive evidence for the SDGs to trigger a system-wide transformation process. This paper contributes thereby both empirically and conceptually to the existing knowledge regarding the analytical problem of architecture and agency identified as crucial in the 2018 Earth System Governance Science and Implementation Plan. More generally, the paper advances our understanding of the transformative potential of global governance through goal-setting.

Key concepts: Sustainable Development Goals (SDGs); governance-through-goals; transformative potential; integration; institutional architecture; Germany

Preface

First of all, I would like to express my gratitude to all interviewees for their time and valuable insights that made this thesis possible. Further, I want to thank my supervisor Prof. Dr. Frank Biermann for his guidance, not only for this thesis but also for my future career path. I equally wish to thank Dr. Basil Bornemann for his valuable input and his extensive feedback. I am incredibly thankful for their patience and inspirational ideas.

My warm appreciation also goes to the Karianne Taranger and Matteo Spinazzola that peer reviewed this thesis. And last but not least, I would like to thank all my loved ones for their encouragement and their support. I am especially grateful for all the practical and moral assistance that I received during the last days of this thesis that I spent in Corona quarantine.

I hope that anyone who reads this thesis will enjoy it.

Jana Birner
Utrecht, September 2020

Utrecht University

Table of Contents

Utrecht University

List of Abbreviations

Agenda 2030	Agenda 2030 for Sustainable Development
BMF	Federal Ministry for Finance (German: Bundesfinanzministerium)
BMFSFJ	Federal Ministry for Family, Seniors, Woman and Youth (German: Bundesministerium für Familie, Senioren, Frauen und Jugend)
BMG	Federal Ministry for Health (German: Bundesministerium für Gesundheit)
BMI	Federal Ministry of the Interior, Building and Community (German: Bundesministerium des Innern, für Bau und Heimat)
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (German: Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit)
BMZ	Federal Ministry for Economic Cooperation and Development (German: Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung)
CoG	Centre of Government
EU	European Union
PBNE	Parliamentary Advisory Council for Sustainable Development (German: Parlamentarischer Beirat für nachhaltige Entwicklung)
RNE	Sustainable Development Council (German: Rat für Nachhaltige Entwicklung)
SD	Sustainable Development
SDG	Sustainable Development Goal
StANE	State Secretaries' Committee on Sustainable Development (German: Staatssekretärs-Ausschuss für nachhaltige Entwicklung)
MDG	Millennium Development Goal
NDSD	National Sustainable Development Strategy
UN	United Nations
WHO	World Health Organisation

List of Figures

List of Tables

Utrecht University

1. Introduction

As an unprecedented approach to foster sustainability, the Agenda 2030 for Sustainable Development was launched in September 2015 by the United Nations (UN) General Assembly as its new development strategy. It can be summarized as "a plan of action for people, planet and prosperity" (UN, 2015, p. 3). At its core, the agenda contains 17 Sustainable Development Goals (SDGs) accompanied by 169 targets that span all three dimensions of sustainability - the social, environmental and economic sphere - and address all countries worldwide (UN, 2015). The SDGs are a successor of the Millennium Development Goals (MDGs) that guided international development between 2000 and 2015 and can therefore draw from this previous experience of goal-setting (Kanie et al., 2017).

Observing these developments, scholars argue that a new era of global governance has emerged, characterized by goal-setting as a new dominant governance strategy (Biermann, Kanie, et al., 2017; Stafford-Smith et al., 2017). It features an inclusive goal-setting process resulting in legally non-binding goals. These build on a weak institutional design while providing great leeway to states in its realization (Biermann et al., 2017). "Governance through goals" differs from other types of global governance. Its indirect and non-coercive approach banks on commitment and opposes rule-making, that by definition relies on regulations with attached compliance mechanisms (Yamada, 2017; Young, 2017). However, how successful global governance through goal-setting can be, is yet to be determined (Stafford-Smith et al., 2017; Stevens & Kanie, 2016). This sets the broader background of this research.

To implement the global goals and promote their achievement, the UN member states are challenged to transfer and integrate the SDGs into their specific national policy agendas (Lepuschitz, 2015). The goals allow for context specific adaptation and national prioritisation and their effectiveness largely depends on the appropriate implementation on-the-ground (Allen et al., 2018; Biermann, Kanie, et al., 2017). Arguably, the national level is the most crucial one for the implementation and achievement of the SDGs (Stafford-Smith et al., 2017).

Translating global goals to national agendas elicits several governance challenges like handling trade-offs, guaranteeing accountability and fostering inclusion and collective action (Bowen & Cradock-Henry, 2017). Sustainable development (SD) is further challenged by fragmented policy-making and specialized expertise that governments mostly rely on (Tosun & Leininger, 2017). This sectoral policy-making is deemed as insufficient to grasp the interconnected nature of sustainability (Heinrichs & Biermann, 2016). An integrated and coherent implementation is demanded (Stafford-Smith et al., 2017). Integration is defined here as the existence of interlinkages across institutions that deal with interrelated issues (Stafford-Smith et al., 2017; Stevens, 2018; UNDESA, 2018). Institutions in turn are understood in a narrow sense as "political or social organisations that are involved in policy making or implementation"(Pfahl, 2005).

The enhancement of cooperation and coordination amongst institutions is crucial for integration. To mainstream sustainability and implement SD governance in an integrated manner, institutional reformation is thus indispensable (Breuer et al., 2019). This marks a strategic challenge for the

institutional design of states, the need to establish new systems for problem solving evolves (Biermann, Kanie, et al., 2017; Bornemann, 2014).

The lack of integration across sectors but also across governance levels, country borders and societal realms is perceived as one of the main shortcomings in traditional approaches to SD (Le Blanc, 2015; Stafford-Smith et al., 2017). Insufficient integration can cause incoherent policy-making with adverse consequences that ultimately compromise the achievement of sustainability. In this context the SDGs are an unprecedented attempt to highlight the interconnectedness and indivisibility of sustainability objectives (Breuer et al., 2019; Niestroy et al., 2019). Their introduction does not only renew the attention on integration as a key issue for SD governance, but also arises the question whether the SDGs have the potential to trigger the mandated enhancement of integration.

Even though the institutional setup is crucial for effective SD governance, guidance on integrated implementation arrangements on the national level is rare (Tosun & Leininger, 2017). Not only the individual institution, but the network and the interactions amongst institutions shape institutional effectiveness and integration (Gehring & Oberthür, 2008). The institutional landscape determines and preserves recurring patterns of unsustainable behaviour and shapes the evolvement of societies. This implies that it is important not only to consider the micro-perspective of individual actors, strategies or specific interactions, but to deploy a broader macro-perspective which acknowledges actor constellations and the institutional network as a whole. Therefore, the focus of this research does not rest on the integrative character of single institutions, but lies on the interplay between relevant institutions constituting the SD governance architecture, that is "the overarching system of public or private institutions, principles, norms, regulations, decision-making procedures and organizations that are valid or active in the issue area" (Biermann et al., 2010, p. 281).

1.1 Scientific background and knowledge gap

The SDGs stimulated much scholarly attention since and even before their launch in 2015. So far, most literature critically reflects upon the design of the SDGs and their effectiveness (Fukuda-Parr, 2016; Le Blanc, 2015), on theoretical requirements or challenges for a successful implementation (Bowen & Cradock-Henry, 2017; Niestroy, 2016) or on preliminary implementation efforts (Lepuschitz, 2015). When empirical studies are set up, they predominantly rely on the voluntary national reports to the UN High-level Political Forum on Sustainable Development, which targets mostly goal achievement and is prone to a certain bias (Allen et al., 2018; Breuer et al., 2019; Kindornay, 2019; Tosun & Leininger, 2017). The mechanisms through which the SDGs can affect societies have been evaluated mainly from a theoretical perspective (Biermann et al., 2017; Fukuda-Parr, 2014; Kanie et al., 2017). For the study at hand, this supports the choice for an empirical case study to gain deeper insights into the influence of the SDGs on-the-grounds.

Regarding the case of Germany, a strand of literature exists on the (lack of) institutionalization of sustainability governance (Beuermann & Burdick, 1997; Göll & Thio, 2008), policy-integration (Bornemann, 2014), the sustainability transitions of specific sectors (Fastenrath & Braun, 2018; Schneidewind & Augenstein, 2012), the German NSDS (Tils, 2007) or on the institutionalization of SD on the regional or local level (Jörgensen, 2012; Kern, Koll, & Schophaus, 2007). Generally, most of this research is outdated and precedes the introduction of the SDGs. Further, a systematic network analysis of the SD governance system focused on sustainability does not exist.

This strand of literature is complemented by a series of German research, that is specifically focused on the SDGs while leaving out the institutional component. For example, the German report to the HLPF (Federal Government, 2016b) as well as a range of academic literature (Niestroy, 2016) provide a good overview of the German SDG implementation. In the sparse cases where these two strands are merged and the institutional dimension gets related to the SDGs, scholars tend to research the degree of SDG institutionalization (Scholz et al., 2016). This implies that the SDGs are treated as a dependent variable. An active role of the SDGs as a lever for institutional change and thus as an explanatory factor for a transformation in integration is neglected. Specifically this causal link between the SDGs and potential change effects requires more scholarly attention (Bernstein, 2017). To summarize, a knowledge gap about the transformative potential of the SDGs and about changes in integration related to the new governance-through-goals strategy persists for Germany. The descriptive focus of most empirical research creates the need for a new conceptual approach that provides explanatory and evaluative knowledge on the SDGs and their steering potential.

1.2   Research objective and research questions

The objective of the presented thesis is to examine the potential of the SDGs to impact integration in the institutional setting for national SD governance. To this end, a case study in Germany is carried out on the changes in the institutional network and the relation of these effects to the SDGs. With the application of a mixed-method approach, this research aims to deliver a unique combination of a quantitative approach examining changes from an external perspective and a qualitative interpretation from the internal perspective of actors within the institutional system. Thereby, a more reliable image of the extent and conditions for the SDGs to trigger a transformation in Germany can be generated. The steering mechanisms of the SDGs and related integration effects are observed. The overarching research question for this project is: How have the SDGs transformed integration within the institutional architecture of the German SD governance system on the national level?

This general research question is addressed on two different levels. First, the institutional changes appearing in Germany are identified and related consequences for integration reviewed. Second, the steering mechanism of the goals are examined. To operationalize this approach, the following three sub-questions are launched:

RQ1:   How can the transformative potential of the SDGs regarding the effect of integration and the steering mechanisms behind it be conceptualized and analysed?

RQ2:   Are changes visible in the institutional network of the German SD governance system and to what extent do these changes enhance integration?

RQ3:   What are the steering mechanisms behind these changes?

1.3   Scientific and societal relevance

This research is inspired by the GlobalGoals research programme led by Prof. Dr. Frank Biermann. It aims at revealing whether and under what conditions global governance through goal-setting can be effective by examining the steering effects of the SDGs (GLOBALGOALS, 2019). This thesis contributes to the unique research programme by offering an in-depth analysis of the transformation process in integration for the case of Germany. It enlarges knowledge on the process and effect of embedding a global agenda in national governance arrangements, which is deemed important by Biermann, Kanie and Kim (2017). Additionally, the conceptual understanding of the steering mechanisms that the SDGs deploy and their effects are deepened, which can contribute to the evaluation of goal-setting as a governance strategy. The focus on the institutional setup specifically enhances knowledge about the SDGs with respect to the analytical lens of architecture stemming from the Earth System Governance research agenda (see Burch et al., 2019). Turing to methodological value, this thesis offers an example of deploying network theory as a cutting-edge methodology in sustainability research.

With regards to societal relevance, this research enriches the political and societal sustainability debate about necessary institutional reformation for SD. A profound understanding of institutionalisation and governance networks is of utter importance. It allows to comprehend and consequently improve the effectiveness of the institutional implementation process. The focus on integration is chosen, as it is seen as a basic condition to attain SD (Le Blanc, 2015).

To sum it up, this research contributes to an evaluation of the global approach of governance-through-goals. It helps to understand whether the Agenda 2030 and the SDGs transform Germany, like its aspirational name "Transforming our World: The 2030 Agenda for Sustainable Development" suggests (UN, 2015, p. 1). The research design follows the call from the UNDESA (2018) for the "need to consider different aspects, like the institutional efforts made by governments to promote integrated policy-making and policy coherence; activities related to collaboration and coordination; and measures of achieved integration and policy coherence regarding achieved outcomes" (p. 490). This is crucial since decision-making about SD on the global level has an impact on societies all over the world.

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2. Theoretical Background

This section outlines the theoretical foundations for the research focus on the transformative potential of the SDGs. Transformative potential entails the ability to orientate and justify action towards sustainability (Christen & Schmidt, 2012) and the capacity to alter dominant governance approaches to environmental, social and economic challenges (Stevens & Kanie, 2016). The SDGs are seen as an "opportunity to permanently transform the nature of development and make environmental and social sustainability a defining characteristic of economic activity" (Stevens & Kanie, 2016, p. 394). In this thesis, the transformative potential is conceptualized as the ability of the SDGs to influence integration of the institutional SD governance system in Germany. It is channelled through several steering mechanisms that potentially induce change as new cooperation is established around the SDGs and a new conceptualization of sustainability is deployed. This in turn has consequences for the current system in terms of its network and actor alignment, in other words its progression towards integration. This study design is chosen as it is rather early to look at goal achievement itself, while the basis for effective implementation is largely formed by the institutional architecture (Breuer et al., 2019). An enhancement of integration ultimately fosters SDG achievement as well as a governance transformation. These two reflect the current definition of pursuing sustainability, leading to the assumption that the result would be SD.

To develop a throughout conceptualization and operationalisation of both, the mechanisms leading towards the effect of integration as well as of integration itself, a literature review is performed. Hence, the question how the achievement of integration can be defined is pursued. To this end, a thorough desktop review of academic and expert literature is conducted based on a keyword search in the main scientific journal databases.[1] Literature dealing with integration generally, and with integration or coherence related to sustainability and the SDGs specifically is examined with a focus on integration mechanisms and directions. It reveals a widespread call for the necessity of an integrated approach in the implementation of the Agenda 2030 (Breuer et al., 2019; Stafford-Smith et al., 2017; Stevens, 2018). However, the review shows that the major focus of research lies on the integrated character of the goals itself (e.g. Le Blanc, 2015; Stevens, 2018; Tosun & Leininger, 2017) and on policy integration or coherence (e.g. Breuer et al., 2019; Koff & Maganda, 2016; Persson, 2004; Scholz et al., 2016). The institutional design and its connection to integration has received less attention so far.

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[1] The used keywords include "transformative potential", "steering mechanism" "actor and institutional alignment", as well as "integration" along with a combination of other terms such as "SDGs", "Measuring"," Normative coherence", "Criteria"; "SD Governance" as well as "Sustainability".

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2.1 Three dimensions of integration

Integration in terms of long-term coordination and cooperation between a diverse set of actors is a key issue for sustainability in general and for the successful implementation of the SDGs in particular (Bowen & Cradock-Henry, 2017). Nevertheless, a uniform conceptualization of integration is still lacking (Stevens, 2018; UNDESA, 2018). This is further hampered through the absence of a stringent terminology (Bornemann, 2014; Tosun & Lang, 2017). Moreover, there is no consensus about how progress towards integration would look like or be measured in practice (Niestroy & Meuleman, 2016; Stevens, 2018). Generally, integration describes the linkage and coordination among institutions, actors and sectors. Institutions or actors can be considered as aligned if "they enable, incentivize or constrain similar actions in a specific situation" (Markard et al., 2016, p. 333). An integrated approach for SD governance is encourage by strengthening "cooperation and common approaches among institutions at various levels dealing with closely interrelated issues"(UNDESA, 2018, p. 488). This demands a transgression of established policy fields and institutional responsibilities addressed to individual departments.

Despite the lack of a consistent definition, literature regarding sustainability governance points out three key dimensions of integration: (a) *horizontal coordination*, (b) *vertical coordination* and (c) *multi-stakeholder engagement*. They present directions that integration can take within the political system. Alterations in each of these integration dimensions can happen individually or collectively.

a. <u>Horizontal coordination</u>

The dimension *horizontal coordination* captures interlinkages across divergent policy domains and thereby the integration of the social, economic and environmental dimension of sustainability (Bass et al., 2017; Breuer et al., 2019; Niestroy, 2015; Niestroy et al., 2019; UNDESA, 2018). Sectoral division of responsibilities makes specialisation possible, which in turn facilitates learning, sets out clear lines of command and responsibility (Niestroy & Meuleman, 2016) next to creating lower transaction costs and accumulating expertise (Tosun & Leininger, 2017). On the opposite, this organisation form bears the risk of siloisation and fragmentation with institutions pursuing separate objectives (Bass et al., 2017). Misalignment and conflictive policy practices can result, while synergies get diminished (Bass et al., 2017; Markard et al., 2016; Tosun & Leininger, 2017). The interdependencies between the economic, environmental and social aspects inherent in sustainability can only be balanced if the expertise and experience of the ministries working in the respective fields is harnessed (Breuer et al., 2019). As an example, the cooperation between the ministries of foreign and internal affairs is key to internalise external repercussion effects of domestic policies and achieve universal implementation of sustainability.

To strengthen *horizontal coordination*, crosscutting collaboration amongst policy sectors has to be established. Instead of breaking policy silos, their communication must be amended (Niestroy & Meuleman, 2016). The goal should not entail to form a monolithic umbrella institution but to mobilise

all institutions with relevant mandates in the issue area and form a strong network (Bass et al., 2017; Scholz et al., 2016). The adoption of a genuine whole-of-government approach is widely recommended (Dongxiao et al., 2017; Scholz et al., 2016; Tosun & Lang, 2017). It covers the effective participation of all policy departments across their portfolio boundaries to achieve an integrated response to sustainability issues (Tosun & Lang, 2017).

b. Vertical coordination

Vertical coordination describes the interconnectedness of various governance levels (Bass et al., 2017; Breuer et al., 2019; Niestroy et al., 2019; UNDESA, 2018). This dimension is a key factor to achieve appropriate decentralisation and universality (Bass et al., 2017). *Vertical coordination* can assure that national governance arrangements fit into the international governance context. Meanwhile, it can also catalyse action on subnational governance layers and support the management of interdependencies (Breuer et al., 2019). The inclusion of lower governance layers recognises the needs of affected communities in decision-making and acknowledges context dependency (UNDESA, 2018). This promotes ownership and legitimacy on the regional and local level, which are essential for implementing sustainability on-the-grounds. Vertical coordination is especially important in nation states that are based on federal systems such as in Germany. Here, power is distributed vertically and much leeway is granted to the individual regions.

An enhancement of *vertical coordination* demands the alignment with sub-national as well as supranational decision-making to achieve coherent outcomes. Strategies and actions have to be harmonised and common approaches amongst administrations with different jurisdictional scale established to create integrated outcomes (Niestroy, 2015; UNDESA, 2018). This can be pursued by mandating working groups that collect and represent sub-national interests or by directly involving respective actors (Breuer et al., 2019). Nevertheless, the inclusion of divergent governance levels demands the establishment of additional administrative structures for monitoring and evaluation. This can make a system complex and resource intensive. Action and regulatory ambitions can be diluted and the speed of decision-making lowered (Breuer et al., 2019).

c. Multi-stakeholder engagement

The dimension *multi-stakeholder engagement* comprises the involvement of actors stemming from different societal sectors such as civil society organisations, actors from the private sector and research institutes (Bass et al., 2017; Breuer et al., 2019; Stafford-Smith et al., 2017). The inclusion of divergent actors allows for broad participation, creates inclusiveness and follows the widespread consensus that traditional state-centred approaches are not sufficient to achieve sustainability (Breuer et al., 2019). Through *multi-stakeholder engagement*, ownership is strengthened while a far-reaching, throughout implementation of sustainability is ensured (UNDESA, 2018). On top of that, it forges multi-sector inclusion (Stafford-Smith et al., 2017), improves the accuracy of problem-definition, diversifies

potential solutions and expands sustainability evaluation by incorporating different forms of knowledge (UNDESA, 2018).

A more integrated system in the sense of *multi-stakeholder engagement* features more relations and partnerships between governmental and non-state actors. It can be encouraged through the setup of councils or commissions, dialogue formats or similar measures that encourage representation of divergent stakeholders (Niestroy et al., 2019). Equitable and easy access to different forms of participation are key success factors. However, societal integration demands adequate resources, since the facilitation of participation is time- and cost-intensive and requires the integration of very divergent viewpoints (UNDESA, 2018).

Despite this clear distinction, the dimensions of integration are not clear-cut but interdependent in reality. As an example, Breuer and colleagues (2019) describe *vertical coordination* and the integration of non-governmental stakeholders as mutually enforcing.

2.2   Steering mechanisms

Steering mechanisms can be defined as "the regulations and systems that drive actions in ways that are amenable to defined values and concerns" (Broadbent et al., 2010, p. 394). Within this research, steering mechanisms are factors that generate integration in its various dimensions and are thus inherently bound to this concept. Three relevant steering mechanisms for integration are identified in the literature: a) *organisations and procedures,* b) *ideas and values*, along with c) *leadership and commitment.* These are the channels through which the SDGs potentially elicit change and trigger integration processes. A more detailed description of the mechanisms is presented in the following.

a)   Organisations and Procedures

Organisations and procedures describe the formal institutional structure, thus legal institutions. It covers individual social or political organisations as well as coordination mechanisms amongst them. Institutional coordination as an operational element is seen as constituting policy coherence (Carrapico & Barrinha, 2017; Stevens, 2018) and integration (Trouvé et al., 2010).

The concept of sustainability addresses a key role to institutions as an instrument for its implementation (Pfahl, 2005). Underlying the importance of this mechanism, the SDGs itself entail a distinct goal for strengthening institutions (UN, 2015). The institutional setting overall shapes policy implementation and its effectiveness (Pfahl, 2005). Capacities for long-term planning and orientation that exceed sheer implementation must be emphasized for effective governance (Biermann et al., 2017). Also the creation of opportunities for a variety of stakeholders across sectors, levels and societal fields to participate and to amalgamate their competencies requires adequate institutional frameworks that allow for reconciliation of divergent interests and needs (Breuer et al., 2019). The individual institutions

itself must be designed in a holistic, inclusive and effective manner in order to promote sustainability (Bass et al., 2017).

The SDGs have the potential to challenge and transform existing institutionalised approaches to sustainability. As they are all-encompassing, they push for integrative procedures that include social, economic and environmental aspects (Stevens & Kanie, 2016). To establish the required institutional cooperation, the rife adoption of the SDGs as a shared agenda can play a supportive role (Stafford-Smith et al., 2017). The alignment of national strategies and ministerial plans with the SDGs is necessary. For the implementation of the SDGs, new institutions like interministerial committees can be set up or a reorganisation of persisting procedures can be pursued (Tosun & Leininger, 2017).

b) <u>Ideas and Values</u>

Sharing *ideas and values* connotes that institutions follow similar goals and purposes while being grounded in a joint normative basis. Solid and coherent relations amongst institutions must build on normative agreements to minimize political obstacles and increase incentives for institutional cooperation and coordination (Carrapico & Barrinha, 2017). Ideational coherence and a shared problem understanding are key elements in conceptualising coherence (Carrapico & Barrinha, 2017; Stevens, 2018) and integration (Trouvé et al., 2010)

Generally, sustainability has a high stake while it is an analytically ambiguous concept (Amsler, 2009; Christen & Schmidt, 2012; Heinrichs & Laws, 2014). Disagreement persists on the idea of sustainability itself. Christen and Schmidt (2012) conclude "if sustainability is conceptualised randomly, it cannot orientate our actions in a justifiable way. As long as a concept is used to validate whichever action, it does not serve to justify any action at all" (p.401). Similarly, Koff and Maganda (2016) argue, that "true transformation needs to be based on coherent visions of development" (p.106). Consequently, a similar conceptualization of SD in German institutions is an important leverage factor for institutional arrangements to steer action.

The SDGs can serve as a shared reference point and help to agree on mutual goals and directions for a common purpose (Sachs, 2015). They have the potential to change persisting normative and cognitive constructs by establishing a universal consensus amongst a diverse set of actors. Mental silos of actors can be broken down and widespread support achieved (Niestroy & Meuleman, 2016). On top of that, the SDGs hold the ability to transform the sheer idea of development (Stevens & Kanie, 2016). Substituting a purely economic approach, the SDGs widen the idea that resonates with development to be inclusive and entail social, environmental and relational aspects. The SDGs can work as an aspirational agenda and frame the problems and issues behind current development patterns (Stevens & Kanie, 2016).

c) <u>Leadership and Commitment</u>

This factor comprises *leadership* which "refers to the mandate, establishment of the institutional set-up

Utrecht University

for SDG implementation and the responsibility to oversee the implementation of SDGs" (Breuer et al., 2019, p. 16). next to *commitment*. The latter can be paraphrased as the obligation, engagement, responsibility and liability for sustainability (Oxford English Dicitionary, n.d.). Thus, it covers the long-term and constant steering towards a transformation plus the widespread dedication for it.

High-level political *leadership* with a legitimate mandate and large-scale *commitment* are essential to maintain political momentum and to address importance to the sustainability (Bass et al., 2017; Breuer et al., 2019; Persson, 2004; Scholz et al., 2016; Stafford-Smith et al., 2017; Stevens, 2018; Volkery et al., 2006). It enables political will and policy continuity to assure an effective and enduring transformation process (Niestroy et al., 2019). Especially a shared ownership and responsibility by all ministries is deemed important (Scholz et al., 2016).

However, successful SD governance does not only rely on strong *leadership*, but on a carful choice of the institutions in lead. In that sense Breuer and colleagues (2019) demand to choose the lead ministries beyond "the usual suspects" (p. 28), which generally are the structurally weak environmental ministry or the one for foreign affairs. As an example, the engagement of the financial ministry is crucial, as only an adequate budgeting can assure that sustainability does not stay at the margin of decision-making (Breuer et al., 2019). Meanwhile, the Centre of Government (CoG) usually lacks the resources and capacities for efficient coordination and implementation of sustainability due to its widespread involvement in divergent issues (Breuer et al., 2019). It is nevertheless often appointed as the institution in lead. Thus, Breuer et al. (2019) argue that co-leadership with a mandate by several ministries causes an integration of all sustainability dimensions and pushes the topic higher on the political agenda. In line with this argumentation, Bass and others (2017) advise networking and collaborative approaches instead of focussing on a centralized institution. On the contrary, other authors such as Stafford-Smith and colleagues (2017) emphasize the need for committed, high-level leadership. In their view, this leadership can originate from a powerful ministry or a supra-ministerial institution.

To summarise these divergent ideas, a clear mandate for leadership must be assigned that enables the coordination of all policy sectors. This leadership must stem from the highest level to be influential. Preferably, leadership is shared between the CoG and relevant ministries to integrate all policy dimensions while assuring powerfulness. Additionally, an active involvement of all ministries in SD governance is key.

The SDGs set priorities for resource allocation through clearly defined goals and deploy benchmarks to track progress towards goal achievement (Young, 2017). This implies that they shape the international and national agenda as they capture attention, promote motivation for joint efforts and mobilize diverse stakeholders (Sachs, 2015). Goal-setting can coin behaviour by galvanizing the endeavours of those in charge while diminishing chances of short-term oriented actions to distract attention and resources from efforts that promote long-term goal attainment (Biermann, Stevens, et al., 2017). Goal-setting triggers enthusiasm and dedication instead of formulating behavioural prescriptions like rule-making. It can alter *leadership* and cause widespread *commitment*.

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2.3 Combining effects and mechanisms – a framework for analysis

The three presented dimensions of integration manifest differently depending on the three mechanism that bring them about. As a summary, the following analytical framework is designed to guide this research (table 1). It provides an overview on how integration is conceptualized and lies out how the dimensions of integration can be generated through one or several of the steering mechanisms.

Table 1: Analytical framework explaining the steering effect and mechanisms forming integration.

	Horizontal coordination *Coordination amongst policy sectors*	**Vertical coordination** *Coordination amongst governance levels*	**Multi-stakeholder engagement** *Coordination amongst societal realms*
Organisations & Procedures *Societal structure and organisation*	Institutions aiming at the facilitation of relations between policy sectors	Institutions aiming at the facilitation of relations between governance levels	Institutions aiming at the facilitation of relations between state and non-state actors (participation)
Ideas & Values *Beliefs, problem understanding and conceptualisation*	Presence of a shared conceptualisation of sustainability and similar ideas on development amongst actors from different policy sectors	Presence of a shared conceptualisation of sustainability and similar ideas on development amongst actors from different governance levels	Presence of a shared conceptualisation of sustainability and similar ideas on development amongst actors from different societal realms
Leadership & Commitment *Powerful agency and dedication for steering*	High-level leadership by CoG along with ministries and strong commitment of all ministries	Strong leadership in and commitment to the inclusion of actors from different governance levels	Strong leadership in and commitment to the inclusion of actors from different societal realms

3. Research Design and Methods

This chapter explains the methodological design of this thesis. After providing information about the research scope and material, the chosen methods are briefly introduced. Conclusively, the methodological approaches are link to the main theoretical concepts to explain their operationalisation.

This research applied a mixed-method approach that combined quantitative and qualitative methods. Generally, three steps of research were conducted: (1) a desk research in terms of a profound literature review, (2) an empirical case study through a quantitative analysis, network analysis and semi-structured expert interviews, as well as (3) an integration of the results gathered by the different methods (see figure 1).

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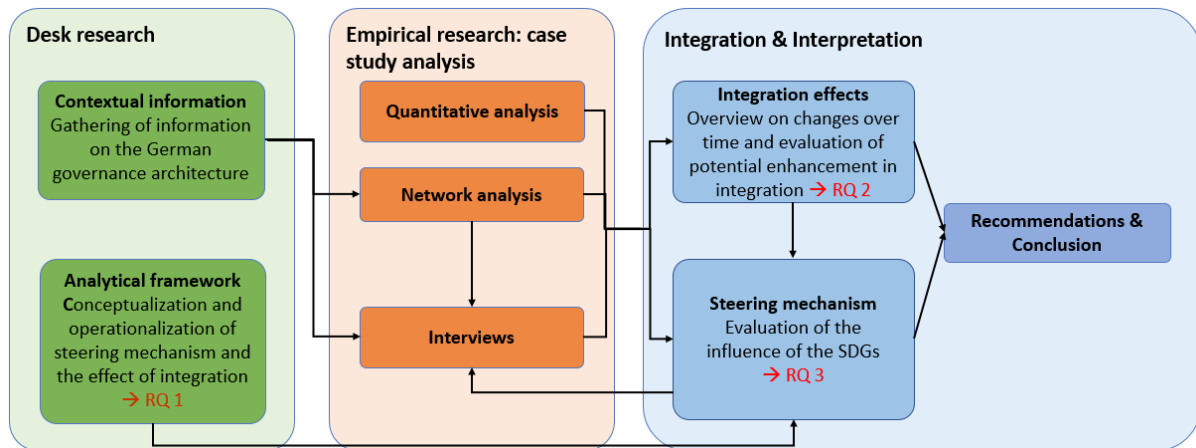
Figure 1: Research framework showing the three steps of research.

A thorough literature review was performed for the development of an analytical framework with specific criteria for the evaluation of integration. This framework guided the whole research process and answered the first research question. The desk research phase further contained the gathering of relevant contextual information on the case of the German SD governance arrangements.

During the empirical phase, a systemic approach with a macro-level perspective on the German national institutions was chosen (Gehring & Oberthür, 2008). A statistical analysis of the quantity of press releases from all federal ministries was conducted. The press releases further served as the units of observation for the network analysis. The analysis provided an overview of institutional cooperation related to SD and the SDGs between 2012 and 2019. Building on the results from these two analyses, semi-structured interviews were conducted with administrative staff of the ministries.

Lastly, the findings of the three methodological approaches were combined to illustrate changes in the institutional setting in Germany and its consequences for integration over time (RQ 2). The influence of the SDGs through the steering mechanisms as a driver of these effects were demonstrated (RQ 3).

This mixed-methods approach allowed to balance out the shortcomings of each individual method. To exemplify, the network analysis as a systemic approach provided a good overview (macro-level) of the institutional setting. However, this left out findings regarding specific institutions and actors (micro-level) and aspects of change could have gotten lost. Due to the binary nature of the networks, the illustration of qualitative features of cooperation amongst institutions is limited. Moreover, the capacity to address a causal link between the SDGs and integration effects through the network and quantitative analysis is rather weak (Young, 2011). The application of a mixed-methods design with qualitative in-depth interviews can outweigh these limitations.

3.1   Research scope

This research performed a case study about the integrative effects of the SDGs on the institutional setting of the German SD governance system. The units of analysis were the German federal ministries.

The investigated time period ranges from 2012 to 2019 and covered 3 legislative periods (17th, 18th and 19th German legislative period).

Even though the Länder (federal states) in Germany are entitled with a comparably high amount of sovereignty and power due to the countries federal structure, ministries on the regional level were beyond the scope of this paper. This decision was grounded in time restrictions. The number of relevant institutions would have grown exponentially due to the 16 federal states.

3.2   Research material

To allow for replication and transparency, this section explains how the data was selected, gathered and processed.

3.2.1   Data selection and processing

For the quantitative and network analysis, press releases and announcements (German: "Pressemitteilungen" and "Meldungen") of all 14 federal ministries were used. Press releases were chosen as they are a tool of strategic communication that was continuously disseminated by all institutions. It was assumed that the institutions have an intrinsic motivation to report on all relevant activities.

The material was collected by hand through the press database on the respective websites. On top, an additional search throughout the general website was performed to ensure completeness of the selected material. Since the research material was in German the following key-words were applied for data selection: "Entwicklungsziele" (development goals), "Nachhaltigkeitsziele" (sustainability goals), "SDGs" and "Agenda 2030" for material related to the SDGs, "nachhaltig" (sustainable) "Nachhaltigkeit" (sustainability) und "Nachhaltige Entwicklung" (sustainable development) for press releases that were concerned with SD. Duplicate press releases that matched several keyword categories were detected and removed. As an example, most press releases related to the SDGs naturally also used the terms sustainability or SD. However, these releases were accounted for in the category of SDGs while being deleted from the category of SD if necessary.

Press releases and announcements with overlapping content were not subtracted for the quantitative analysis, since the overall amount of press releases could also include double counts. However, for the network analysis, press announcements that entirely reused content from other releases were filtered out to avoid double counting of collaborative behaviour. In that case, the more extensive one was chosen. Press releases that did not talk about institutional cooperation were excluded in the network analysis. Thus, the number of press releases in the quantitative and network analysis diverged.

3.2.2   Data coding for the network analysis

As the base for the network analysis, data coding was performed in NVivo 12 by tagging institutional relations in the press releases. All selected press statements were analysed manually to identify relevant

institutional interactions[2]. The following criteria must be met by the respective press statement to account for a data entry: first of all, a clear interaction must have been described in the research material with a reference to a distinct institution. Thus, the examined ministry must have been explicitly linked to one or more other institutions. Collective terms or vague reference, such as "actors from the economic sector", were not accounted for. Second, the institutional relation must have been explicitly described to establish or develop substantial policies, action, knowledge or strategies that aim at, have the purpose to, or be guided by the principle of sustainable development or the achievement of the SDGs. If sustainability was mentioned in the press release but separated from the objective or theme of the institutional interaction, the press statement was sorted out.

Research material containing a reference to an interaction around the SDGs, the Agenda 2030 or specific SDGs was coded as meaningful for the SDG network, while interaction relating to sustainability in general was coded for the SD network.[3] Each sign of an institutional interaction was translated into one data point, which implied that a single press release could result in several data entries. If several institutional partners cooperated for the same purpose, each partner was recorded individually. If an institute changed its name, the current name was used. This is important since the names for the federal ministries in Germany can change after every national election, even though the sectoral divide is mostly kept up. If an institution was addressed by several interchangeable names, for example federal cabinet and federal government, one name was used throughout the whole research and all data entries were collected under this term. All results from the coding process were captured individually for each institute in a Microsoft Excel Sheet.

3.3   Quantitative analysis of press releases

The quantitative analysis was applied to reveal whether the topic of sustainability is increasingly thematised. An increase can act as a proxy for an enhancement of action. If sustainability is discussed more often, it is also more frequently the objective of action. The central questions for the quantitative analysis were (1) whether sustainability has gained more attention over the years, and if so whether this effect could be related to the SDGs and (2) if the SDGs are used in a crosscutting manner.

The federal ministries invest divergently in public relations. This translates into differences in the amount of published press releases. To eradicate this potential bias, relative numbers of press releases

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[2] An automated text search was not possible for this research design, as the actor set was too diverse. The specific actors could only be identified when reading the press releases.

[3] An interaction can be a cooperation, the creation of a new institution, financial support or an association to another institution and is detected through keywords. Amongst others, the following keywords are used: "zusammen" (together/collectively), "in Zusammenarbeit mit" (in cooperation/collaboration with), "gemeinsam" (joint/common), "teilnehmen" (participate/take part). "unterstützen" (support), "finanzielle Unterstützung" (financial support), "finanzieren" (finance/fund), "bezuschusst" (subsidised), "ins Leben rufen" (start/originate), "aufbauen" (build) and "gründen" (establish). Also the joint release of a press statement serves as proof of cooperation.

were used. The amount of press releases dealing with sustainability were divided by the overall amount of press releases that were published by a specific ministry.

The quantitative analysis was conducted with the software R 3.6.3. The level of confidence, that is the significance level, was set to $\alpha = 0,05$ for all tests. To investigate if sustainability was increasingly discussed, the relative amount of SD and SDG related press releases were combined (SD(G)). The fact that relative and not absolute numbers of press releases were used lead to values in the interval [0; 1]. Thus, a generalised linear model (GLM) with a logit-link and a binominal distribution as a basis was adopted. This means that not the actual number of press releases, but the probability of a random press release to be related to sustainability was modelled.

The premise that time was handled as an independent variable in the GLM could have been a problem, as it could induce autocorrelation. Hence, a Pearson's chi-squared test for statistical independence was carried out to strengthen the results. Here, the null hypothesis saying that the amount of SD(G) related press releases and the time periods pre 2015/ post 2015 are statistically independent, was tested. Afterwards, an independent t-test could have addressed this trend to be predominantly driven by the SD or SDG releases. However, no further investigations were conducted as the numbers of the SDG related press statements was significantly lower for all years.

As a last step, the press releases were examined for the type of reference towards the SDGs. References to the SDGs themselves or to their respective targets were cumulated. Three categories were created: (1) a general reference to the SDGs as a whole or the Agenda 2030, (2) a reference to an SDG which matched the policy sector that the ministry engages in or (3) a reference to an SDG from another policy domain. To exemplify, if the BMG took action around SDG 3 ("Good health and well-being") it addressed an SDG within its own sector (category 2). A reference to any primarily non-health related SDG would have hinted towards a more holistic approach to the SDGs (category 3). Core SDGs that match the ministries own policy sector were determined over self-reports in the NSDS or departmental sustainability reports. Also interviewees identified the SDGs that lie within their departmental responsibilities. An overview of the core SDGs for each ministry can be found in Appendix A.

3.4   Social network analysis

Social network analysis is a prominent methodological approach that builds on graph-theoretic concepts to enhance the knowledge and understanding of social structure (Brandes & Wagner, 2004). Its central feature is the systematic and quantitative analysis of relations amongst actors that allows to understand structures in complex network arrangements (Lienert et al., 2013). Network analysis can help to map the relationship amongst actors in the form of dyadic ties and thus to explore the interactions and the transaction of resources in a political system.

In this research, network analysis techniques were used to offer a landscape overview of the whole institutional network. For network visualization and the calculation of network metrics, the software

Gephi 0.9 was chosen. To prevent label overlapping and to provide a good visual display, the algorithms *Forceatlas 2* and *Label Adjust* were combined in the creation of network (Bastian et al., 2009).

The vertexes or so-called nodes in the networks depicted the individual institutions while the edges represented their interaction. The federal ministries formed the core of the network as their press releases build the database. Since the ministries interacted with institutions outside of the political system, the German SD governance system as a whole was delineated in the network. Two attributes were addressed to each node in the network: each institution was assigned to a governance level (national /non-national,) and to the societal sector it belongs to (governmental/ non-governmental). This was based on a quick background search on the respective websites of the institutions. The weight of edges was defined by the amount of references to the specific interaction between two institutions.

Three different network metrics were calculated to highlight distinguished network properties and make them comparable. First, network size was calculated. It showcased the number of nodes and edges in a network and hence tracks if the network was enlarged (Scott & Carrington, 2011). Second, network density as a commonly used metric for connectivity was deployed. It measured coverage of relationships over an area, which equals to the number of actual relations divided by all possible linkages (Kim, 2019). Third, network centrality as a node-level metric outlined the most important nodes in the institutional network (Kim, 2019). Two different approaches were selected to measure centrality. Betweenness centrality is a common measure for the importance of actors and can be scrutinized to identify institutions that play a leading role (Lienert et al., 2013). It measures relative power and increases with the extent that the node lies on the geodesic paths between each pair of other nodes (Scott & Carrington, 2011). For this research, it covered the ability of an actor to connect others and thus the ability to work as an mediator or gatekeeper (Lienert et al., 2013). Next to that, degree centrality was calculated to depict the amount of directly linked interaction partners. When degree centrality was weighted, it further accounted for the weight which is the interaction frequency amongst actors (Scott & Carrington, 2011). Degree centrality is a measure of connectedness and mostly used to identify the structural importance of an actor. In the context of this thesis, it symbolised better access to information next to a high potential to frame planning processes (Lienert et al., 2013). Taken together, these metrics provided reasonable information on the importance of actors. The operationalisation of these three metrics is explained in the following section.

Generally, this research assumed that if the SDGs are steering a national transformation, changes must be visible over time. To minimize the potential bias of contextual factors such as a change of government, the network analysis presented time periods instead of distinct years (2012-2014, 2015-2019).[4] The national architecture before the introduction of the SDGs in 2015 was used as a reference point. It was contrasted to the institutional architecture after 2015 to outline alterations. Further, traditional definitions of SD still prevailed as a contesting conceptualization after the introduction of the SDGs. Cooperation was either build for the realization of the SDGs or to generally pursue sustainability.

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[4] The uneven length of time periods is a result of lacking data availability before 2012.

Hence, the networks were contrasted from 2015 onwards following their conceptual relation either to the SDGs or to SD. This concluded in the creation of four systemic networks due to a time wise and a conceptual categorization (SD before 2015 vs. SD(G) after 2015; SD after 2015 vs. SDG after 2015). Thereby, the network analysis could provide information about the time-dependent changes appearing in the institutional architecture in Germany and about their relation to the SDGs.

3.5   Semi-structured interviews

Nine participants were interviewed in eight interviews. Participants were working in the coordination or implementation of sustainability within the federal ministries or the Chancellery. Interview requests were primarily send to the official resort coordinators for sustainability named in the German NSDS. In some cases, the interview requests were redirected to employees working in the same division. Interview questions were informed by the analytical framework on the dimensions of integration. A template of questions next to a standardized introduction were created for all interviews (see Appendix C).

The language of communication was German. Due to the COVID-19 situation, all interviews were performed per phone or video call. All participants were acquainted with the interview procedure as well as with confidentiality in data processing and gave written informed consent. All conversations were recorded. Transcription and coding was done with NVivo 12. For the analysis, an iterative approach that linked the interview results to the broader analytical framework was followed.

3.6   Operationalisation of integration within this research

To investigate the transformative potential of the SDGs, their steering mechanism as well as the effects for integration within the German governance system were explored. This section explains how the developed conceptualisation (see section 2.3) for these variables was operationalised. This research applied a twofold and reversed approach: first visible change effects in integration were researched. Subsequently, the present steering mechanism of the SDGs were explored and linked to the integration effects.

Integration is usually defined as a dimensional variable in the literature, which implies a gradual change relative to a former state (UNDESA, 2018). In this first level of analysis, the German SD governance system before 2015 was thus compared to the after 2015. As explained before, the year 2015 marks the introduction of the SDGs. The investigated integration effects were nevertheless not causally bound to the SDGs. Instead, an open approach highlighting time-dependent changes was pursued here.

The following framework (see table 2) sets out how the different dimensions of integration were pursued methodologically. The most substantiated conclusions could be taken for *horizontal integration* as the subjects of analysis, namely the ministries, directly provided data for this research.

Table 2: Analytical framework containing variables for assessing the three dimensions of integration.

Methods	Horizontal coordination	Vertical coordination	Multi-stakeholder engagement
Quantitative Analysis	-	-	-
Network Analysis	- Density of subgraph depicting direct ministerial interaction - Overall network size	- No. and interaction frequency with governmental partners from non-national level - Network centrality	- No. and interaction frequency with non-governmental partners - Network centrality
Interviews	Mentioned cooperation across policy sectors	Mentioned cooperation with governmental actors from non-national level	Mentioned cooperation with non-governmental actors

As table 2 highlights, the three dimensions were mostly investigated through the network analysis. An increased amount and intensity of cooperation between ministries representing different policy sectors (*horizontal coordination*), with institutions at different governance levels (*vertical coordination*), and with non-state actors (*multi-stakeholder engagement*) are variables that symbolized an increase of institutional integration. This could be tracked over the network size, since all actors in the network were attributed with their societal sector and governance level.

Regarding *horizontal coordination*, the links amongst ministries could be researched by calculating the network density of the ministerial subnetwork.[5] Density symbolizes local cohesion and normative conformity and could therefore act as proxy for integration (Lienert et al., 2013). For *vertical coordination* and *multi-stakeholder engagement* network centrality measures could showcase the most important actors from different governance layers or societal areas in the institutional network. The metrics could outline weather the type of actors that are the most central to the SD governance network have changed over time. Findings for all three dimensions were complemented with the internal perspective of the interviewees on change processes and collaboration. Overall, this answered the research questions regarding visible changes and a potential enhancement of integration (RQ2). Drawing conclusions about the mechanisms behind these changes was not possible, this first analysis stayed on a descriptive level.

To fill this gap, the second level of analysis aimed to relate the findings about integration to the SDGs. The third RQ regarding the steering mechanisms as explanations of the observed changes was pursued.

Table 3: Analytical framework containing variables for assessing the steering mechanisms driving changes in integration.

Methods	Organisations & Procedures	Ideas & Values	Leadership & Commitment

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[5] The widely applied use of system-wide metrics such as the overall density or centrality is not suitable for this research. The networks were built with data stemming from the 14 ministries but entail a way bigger range of actors. Connections amongst these other actors are not captured. As most system-level metrics depend on the node count, values would decrease with a growing number of actors. The explanatory power of system-wide metrics is thus distorted.

Quantitative Analysis	Inclusion of SDGs from different sectors	Amount of press releases dealing with SDGs compared to SD	Number of SDG press releases per ministry
Network Analysis	Comparison of the SD network and SDG network after 2015	-	Network centrality
Interviews	Perception on institutional collaboration and institutional changes	Perception on normative coherence in partnerships	- Reported significance of sustainability for ministry - Perception on leadership & commitment
	Reported changes related to the SDGs		

Table 3 gives an overview on how the different methods were used to research the steering mechanisms. The basic condition to manifest an influence of the SDGs in the two methods that are based on press releases was that the SDGs are mentioned explicitly. The assumption here was, that if action is taken because of the SDGs, policy-makers have an implicit motivation to state that clearly. If the ministries were engaged in sustainability without referencing the SDGs or their content, an influence of the SDGs was neglected. Thereby it was possible to divide general activities around sustainability and the ones driven by the SDGs. To establish a causal link, the SDGs needed to be identified as causing alterations in the steering mechanisms. This implied that the networks around the SDGs and around SD after 2015 were compared. For the quantitative analysis, the amounts of press release that referenced SD in general were contrasted with the number of SDG related statements. Nevertheless, the interviews provided the main insights into the steering mechanisms of the SDGs.

Changing *organisations and procedures* got visible over the interviewees' statements regarding institutional collaboration and regarding changes in the institutional architecture related to the SDGs. The comparison of the SD and SDG network after 2015 put the findings of the network analysis in perspective. The network metrics for the SDG network were expected to exceed the ones for the SD network to manifest that time-dependent change processes are predominantly triggered by the SDGs. This would have shown that the establishment of new *organisations* and the amendment of *procedures* for coordination are predominantly related to the SDG. Also the inclusion of SDGs that exceeded the individual departmental responsibility of the ministries highlighted changing procedures amongst ministries. Taking into account that many SDGs are broadly sectoral in their design, cross-sectoral implementation of the SDGs demanded coordination and counteracted the traditional siloed policy-making (Boas et al., 2016). It showcased a deeper problem understanding and substantiated common goals and purposes.

Also *ideas and values* were investigated through interviewees' opinions. A uniform reference to a similar definition of sustainability was an important variable to show a reorganisation in values and mind sets. Moreover, interviewees were questioned specifically about their perception on normative coherence in cross-sectoral, cross-level and multi-stakeholder partnerships. On top of that, a potential

dominance or high share of SDG content in the quantitative analysis would have pointed towards a mainstreamed use of a renewed and shared normative and conceptual framework for sustainability.

The pathway of *commitment and leadership* was researched through a combination of different variables. Starting with the quantitative analysis, the relative amount of press releases per ministry pointed out how much priority and attention was addressed to the topic. To have a throughout influence on the whole system, the SDGs had to be targeted in all ministries. This argumentation was based on Scholz et al. (2016) claim that for an integrated approach in Germany "all federal ministries should seek to share ownership and responsibility for realising the 2030 Agenda" (Scholz et al., 2016, p. 12). If a ministry did not publish SDG related press releases, its *commitment* was assumed to be lacking.

Furthermore, the quantitative development of sustainability related press statements over time symbolized whether the engagement for the issue had been rising. If press communication about sustainability was enhanced, an enlargement of *commitment* could be assumed. Since the press releases related to the SDGs were captured individually, it could be shown whether SDG related communication was the cause for this trend. If an overall increase of *commitment* was visible and the SDG could be tested as playing a significant role in pushing this increase, the SDGs were assumed to influence engagement. If the increase was mostly relatable to releases that deal with sustainability in general, it could be hypothesised that a general agenda-setting process for sustainability had taken place in Germany. In that case a relation to the SDGs could not be proven.

Drawing from the network analysis, network centrality measures were used to identify leading institutions within the political system. Centrality metrics showcased the ministries that engage most in SD governance. As the networks are visualized separately for coordination on general sustainability matters and for the SDGs, *leadership* for the SDGs could be identified specifically. Lastly, interviews were used to capture the internal perception on *leadership and commitment*. Interviewees were also directly questioned about the importance addressed to sustainability in their ministry.

4. Empirical Analysis

This chapter showcases the descriptive findings of the empirical case study. It starts with briefly outlining the empirical case of the German SD governance system as a result from a case specific literature review. With a focus on the institutional architecture as a whole, a national-level overview of the institutional landscape is presented. Several aspects of this institutional arrangement are taken up again in the empirical analysis and its interpretation. The findings based on the press dataset through the quantitative and network analysis are presented in the subsequent sections. The results of the interviews are directly incorporated into the interpretation of findings (section 5).

4.1   SD governance architecture on the national level in Germany

Germany shows a strong commitment to SD (Scholz et al., 2016). The German National Sustainable Development Strategy (NSDS) has served as the central point of reference for SD governance since its first introduction in 2002 (Bornemann, 2014; Scholz et al., 2016; Tils, 2007). It was last updated in 2016 and 2018 for the inclusion of the SDGs and became the primary tool for their implementation (Niestroy et al., 2019). Leadership for SD and the NSDS on the national level lies with the Federal Chancellery (Federal Government, 2018). This high-level leadership highlights the importance of sustainability in German politics and enables interministerial coordination and monitoring.

Figure 2 summarizes the German SD governance design associated with the NSDS on the national level (Scholz et al., 2016). The German institutional architecture follows a departmental principle ("Ressortprinzip"). It addresses responsibility and autonomy to the individual ministries within their own sectors and fosters sectoral division of labour (Bornemann, 2014). The Federal Ministry for Economic Cooperation and Development (BMZ) works as the external lead for sustainability, while the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) fulfils leading functions for domestic sustainability affairs (Lepuschitz, 2015; Niestroy et al., 2019). Both also actively represented Germany in the negotiations of the SDGs. The centrepiece for interdepartmental coordination is the State Secretaries' Committee on Sustainable Development (StANE, see figure 2). The committee is chaired by the Chancellery and staffed with representatives of all ministries. Thus, its ability to implement sustainability relies on the determination of the resorts (Scholz et al., 2016). Its meetings are prepared by another interdepartmental body, the Sustainable Development Working Group. The German Sustainable Development Council (RNE) provides advice to the federal government on all issues related to sustainability. As an intermediary organisation, it brides the political system and society since 2001 (Federal Government, 2016a). In 2004, the Parliamentary Advisory Council for Sustainable Development (PBNE) was established. It is associated with the German Bundestag and works as a "watchdog" that ensures the compliance of all initiatives with the NDSD (German Bundestag, n.d.).
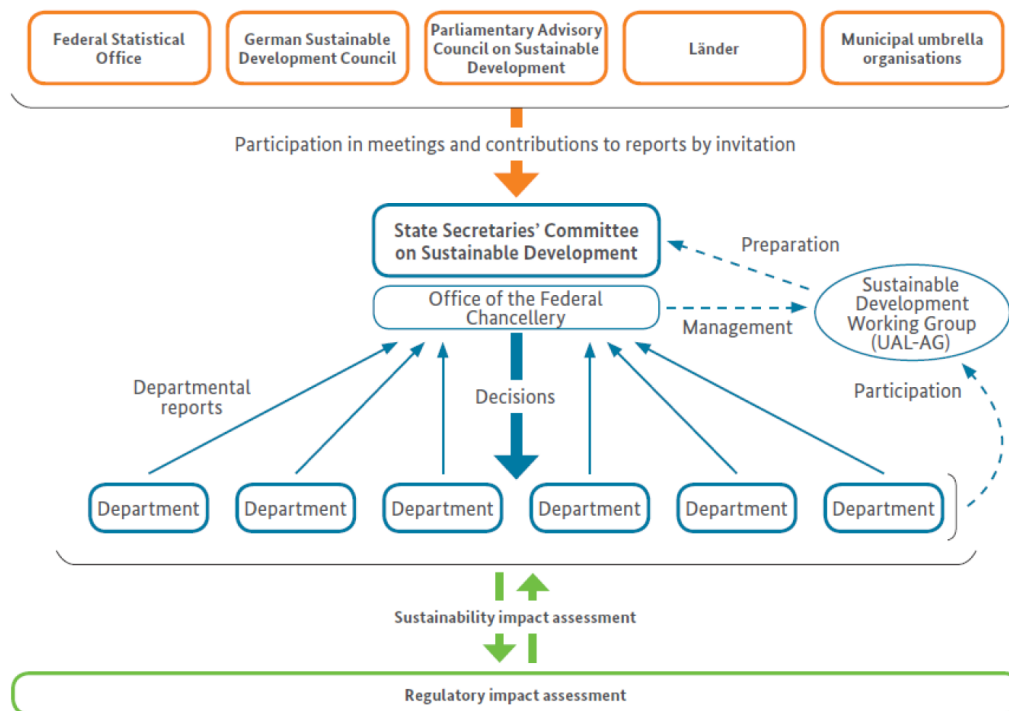
Figure 2: Outline of the German governance architecture for sustainability management (reproduced from Scholz et al., 2016, p. 5).

Scholz et al.'s (2016) analysis suggests clear strengths in the German governance architecture but also identifies weaknesses. Germany has already set up many crucial institutional components that allow for effective coordination amongst institutions. However, the authors call for the true establishment of a whole-of-government approach, the reinforcement of policy coherence across all sectors and for the setup of parliamentary committees. To conclude, since the lack of genuine integration is identified as one potential shortcoming, integration in the German institutional landscape is investigated in more detail by this study.

4.2   Quantitative analysis of press releases

The data sample for the quantitative analysis consisted of 2179 press releases from 14 federal ministries covering the time period of 2012 to 2019. This equals to 11.40% of the overall released statements during this time period. Out of these, 1873 releases (9.80% of all releases) cover SD while 306 statements concern the SDGs (1.60% of all releases). Table 4 depicts the absolute amount of press releases per ministry and year. For a better overview, a visualisation of these numbers can be found in Appendix A (figure 6).

Utrecht University

Table 4: Yearly amount of press releases related to SD and to SDG along with the overall amount of released statements by the 14 ministries. Empty cells signal a lack of data.

Institution	Type	Amount of press releases per year								Total
		2012	2013	2014	2015	2016	2017	2018	2019	
AA	SD	15	14	20	27	28	24	20	20	168
	SDGs	0	2	2	1	4	9	3	7	28
	All	500	449	568	543	634	457	394	375	3920
BMAS	SD	0	1	8	12	27	19	13	19	100
	SDGs	0	0	0	2	0	2	0	3	6
	All	14	21	126	116	159	115	144	173	868
BMBF	SD		20	33	34	35	25	17	35	205
	SDGs		0	0	1	3	5	4	5	16
	All		131	136	183	157	137	123	159	1026
BMEL	SD							60	84	144
	SDGs							4	8	12
	All							211	265	476
BMF	SD						2	1	5	8
	SDGs						1	0	4	2
	All						51	44	52	147
BMFSFJ	SD	32	39	46	45	39	52	23	22	298
	SDGs			3	4	1	2	1	1	12
	All	418	375	473	537	463	458	342	342	3408
BMG	SD	0	1	8	18	8	7	7	3	52
	SDGs	0	0	0	0	5	1	4	4	14
	All	123	108	105	97	107	103	61	74	778
BMI	SD		30	14	24	19	16	35	34	141
	SDGs		0	0	0	0	0	0	0	0
	All		418	314	322	269	237	244	293	2100
BMJV	SD			1	4	2	2	2	4	15
	SDGs						1	0	3	4
	All			25	49	44	37	18	36	209
BMU	SD	5	10	9	16	29	24	23	21	137
	SDGs	0	0	7	10	8	9	3	15	52
	All	163	179	277	356	364	395	258	255	2247
BMVg	SD			1	2	1	6	7	7	24
	SDGs			0	0	0	0	1	0	1
	All			35	32	57	83	115	85	407
BMVI	SD							14	7	21
	SDGs							0	0	0
	All							96	97	193
BMWi	SD				59	62	58	42	70	291
	SDGs				1	0	2	3	0	6
	All				538	531	445	390	449	2353
BMZ	SD		0	67	53	43	47	33	33	276
	SDGs		1	25	33	34	21	20	16	150
	All		4	233	180	177	155	124	110	983
TOTAL	SD	52	112	205	289	290	276	295	361	1873
	SDGs	0	3	37	52	55	52	42	62	306

All	1218	1685	2292	2953	2962	2673	2564	2765	19112

The overall amount (N_{SD} = 1873; N_{SDG}= 306) and yearly numbers of press releases regarding SD outweighed press releases concerning the SDGs. Two out of 14 ministries (BMI and BMVI) did not release a single press release about the SDGs. The following boxplot diagram (figure 3) visualises the distribution of the relative amounts of press releases and their medians. A huge variety in data is visible through the high amount of outliers. The median of sustainability related press statements is higher after 2015. A table illustrating the annual percentages for each ministry can be found in Appendix A (table 10).
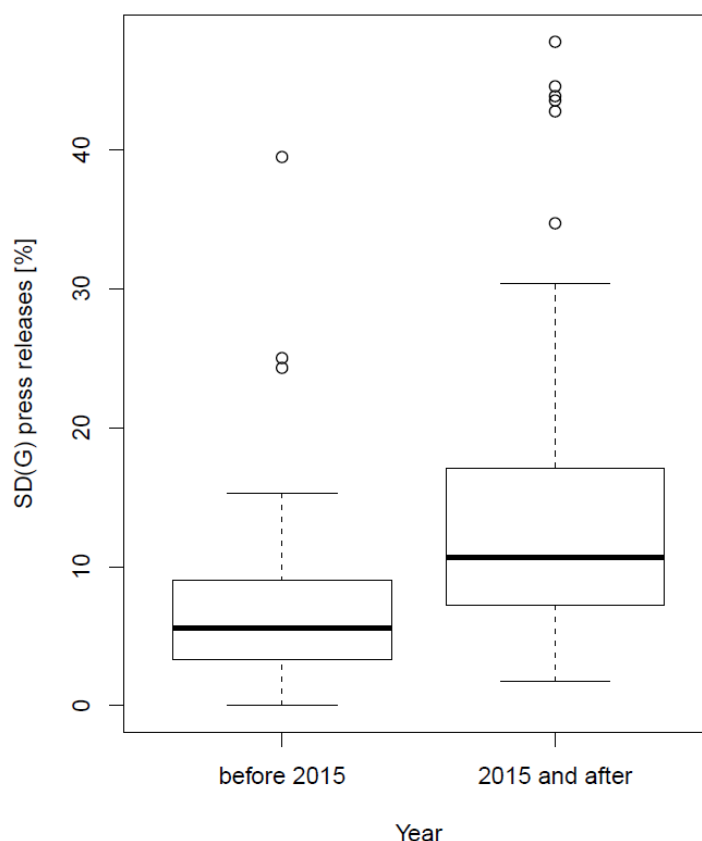
Figure 3: Boxplot diagram visualising the relative amounts of press releases related to the SD(G)s before and after 2015. The median of data is higher after 2015.

Table 5 depicts the results of the GLM. The slope is strongly significant (at $p < .001$) and larger than 0 (Slope = 0.13), indicating that the odds of having a sustainability related press release increased significantly with every year. The data and the results of the GLM are visualised in the following graph (figure 4).

Table 5: Results of the GLM.

	Value	p-Value
Intercept	-2.19383	< 2e-16
Slope	0.12578	< 2e-16
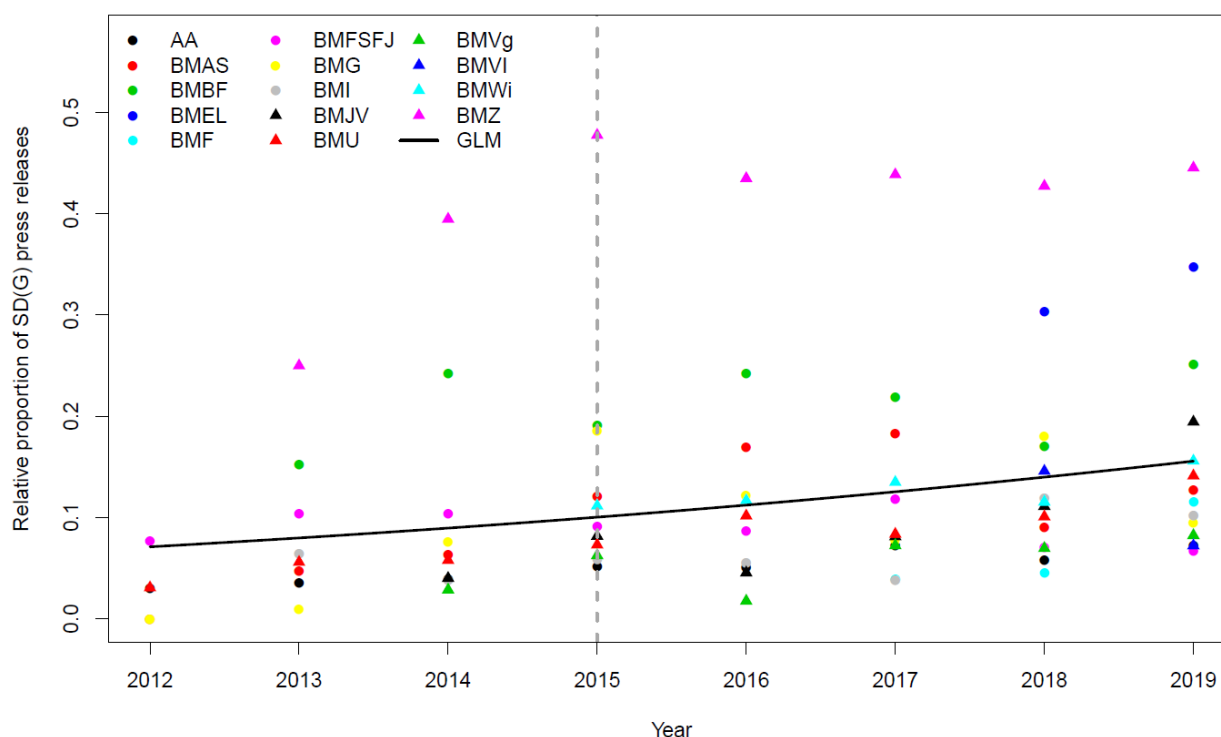
Figure 4: Graph visualizing the GLM (black line). Raw data is depicted in coloured dots and triangles. The dashed line highlights the year 2015, the threshold for division in this research.

The Pearson's chi-squared test for statistical independence was conducted with the following 2x2 contingency table (table 6). The test was highly significant ($p = 6.82$ x 10^{-21}), demonstrating that the variables of pre/post 2015 and SD(G) releases are dependent. Hence, a significant higher amount of press releases after 2015 is proven. Since the amount of press releases regarding SD were higher than for the SDGs for the period of 2015 to 2019 (see table 4), a T-test was not necessary. The significant increase of sustainability covered by press releases is not dominantly caused by releases with SDG content.

Table 6: 2x2 contingency table used in the Pearson's chi-squared test.

	pre 2015	post 2015
SD(G)	409	1770
non-SD(G)	4786	12147

Overall, 306 press releases referenced the SDGs directly with the majority relating to the Agenda 2030 and the SDGs as a whole ($N = 236$). The remaining 70 releases contained 94 references to individual SDGs or targets.[6] The mentioned SDGs mostly matched the policy sector of the publishing ministry ($N = 70$), while references to SDGs that crosscut policy sectors were less frequent ($N = 24$).

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[6] The number of references is larger than the number of press statements with SDG content, as different SDGs can be targeted in one release. If several SDGs were targeted, one press release could account for several data entries. However, several references to the same SDG within one document were not captured. Table 11 in Appendix A documents which SDGs are addressed to the sectoral responsibilities of the individual ministries.

The following graph (figure 5) depicts the distribution of sectoral and cross-sectoral references per SDG. The strongest overall attention was on SDG 3 and 4. Only SDG 11 was not targeted at all in the press database. SDG 3 and 13 had the highest absolute amount of cross-sectoral references ($N_{SDG3} = 7$; $N_{SDG13} = 5$).
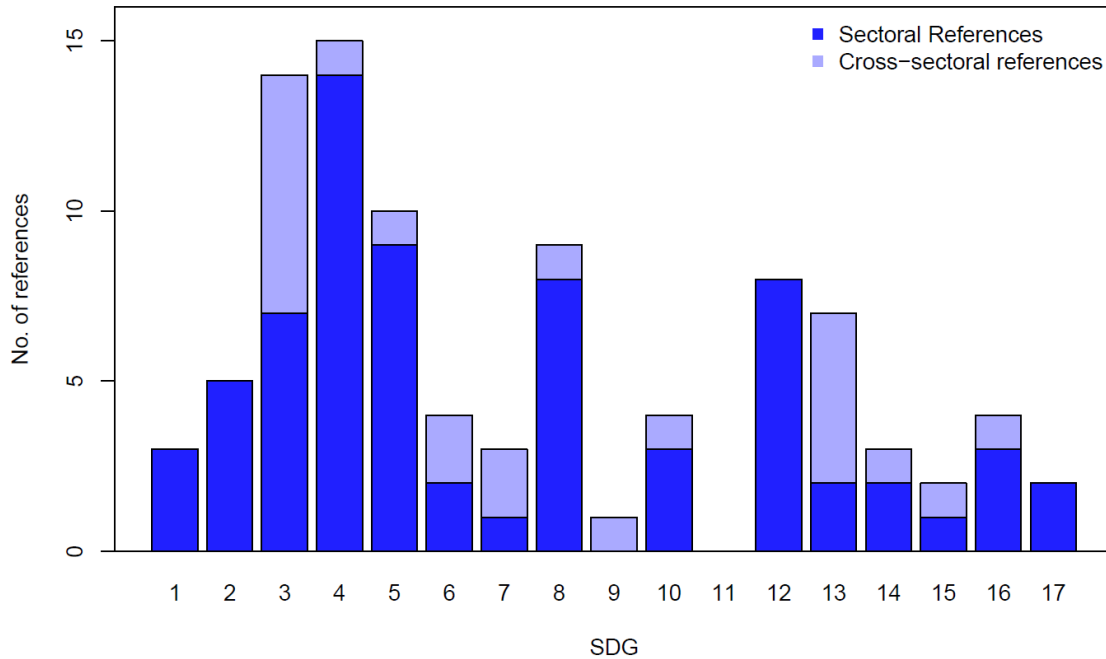
Figure 5: Distribution of references made to the SDGs in the press releases. Two categories of references are divided: (1) sectoral SDGs, where the ministry references SDGs targeting the policy sector it engages in (dark blue), and (2) cross-sectoral SDGs, where the ministry tackles SDGs stemming from deviant policy sectors (light blue). Notably, this does not equal to the amount of press releases, as a single press release can refer to several SDGs.

4.3   Network analysis

After filtering out false positive releases and press statements that do not report on collaborative endeavours, 1158 press statements provided data entries for the network analysis. Four systemic networks were created thereof (SD before 2015 vs. SD(G) after 2015; SD after 2015 vs. SDG after 2015).[7] Visualisations of all networks can be found in Appendix B (figure 7, 8, 9, 10).

In the following three tables (table 7, 8 and 9) the most important metrics for the system-level networks are shown. To achieve comparability, the results in table 7 and 8 were averaged by the number of years for which data was available. This is important, because data availability differed between institutions and because the investigated time period before 2015 (2012-2014) was shorter than the one after (2015-2019).

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[7] The network analysis is divided in 2015, as this marks the official adoption of the Agenda 2030. Since Germany took an active role in the negotiation of the SDGs, press statements with SDG content exist even before 2015. However, they describe the process of the SDG development, while not considering the real content of the Agenda 2030 yet. It is assumed, that the SDGs only started to have transformative power after their official launching. Collaboration around them was only build after their official launch. Thus, SDG related press releases before 2015 are excluded from the network analysis.

Table 7: Network sizes and densities for the four networks depicting institutional interaction on the national level in Germany. Network density is calculated for the subnetwork of federal ministries to evaluate horizontal integration.

Systemic Networks	Nodes	Average nodes per year of data	Edges	Average edges per year of data	Density of ministerial subnetwork
SD before 2015	193	8.39	349	15.17	0.34
SD(G) after 2015	834	13.45	2327	37.53	2.31
SD after 2015	719	11.60	1769	28.53	1.53
SDG after 2015	235	3.79	558	9.00	0.83

The absolute and relative network size and the density are the highest for the SD(G) network after 2015. When breaking up the SD(G) network in the two networks build around SD and SDGs, the SD network is by far bigger and had a higher density (d_{SD}=1.53; d_{SDG}=0.83). The average size of the SDG network alone is smaller than the SD network before 2015, but had a higher density.

The following table (table 8) splits up the network sizes according to the node attributes to depict the subnetwork of non-governmental actors and actors from divergent governance levels. The edge count presents the interaction frequency, thus the amount of interaction with the ministries. This works as a substitute for network density. Both edge and node counts were again averaged for the amount of years that supplied data.

Table 8: Node and edge count of the four system-level networks divided by node attributes. The first part presents all actors stemming from divergent governance levels than the national one, while the latter show values for non-governmental actors. Edge counts indicate the interaction frequency with the ministries. For all values, also averaged numbers that account for the number of years supplying data are calculated.

Systemic networks	Non-national; governmental				Non-governmental			
	Nodes	Average	Edges	Average	Nodes	Average	Edges	Average
SD before 2015	62	2.70	121	5.26	99	4.30	128	5.57
SD(G) after 2015	265	4.27	840	13.55	506	8.16	923	14.89
SD after 2015	228	3.68	622	10.03	443	7.15	708	11.42
SDG after 2015	97	1.56	244	3.94	111	1.79	216	3.48

The SD(G) network has the highest absolute and averaged count of governmental actors stemming from non-national levels (N_V = 265; $N_{ØV}$ = 4.27) and of non-governmental actors (N_{MS} = 506 $N_{ØMS}$ = 8.16). The same accounts for the interaction frequency in form of the edge counts (E_V = 840, $E_{ØV}$ = 13.55; E_{MS} = 923, $E_{ØMS}$ = 14.89). When comparing the two networks of SD and SDG persisting after 2015, the SD network shows higher values on all measures.

Table 9 provides the two highest scoring institutions for the most common centrality measures divided up by each network. To allow for conclusions on the three dimensions of integration, the institutions were divided by their level and their societal realms as captured in the node attributes.

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Table 9: The three most important centrality measures are displayed for the four different networks. The names of the two institutions with the highest scores and the respective centrality values are given.

	Type	Degree centrality	Weighted degree centrality	Normalised Betweeness-centrality
Horizontal (ministries & interminist. bodies)	SD before 2015	BMFSFJ: 40 AA: 35	BMFSFJ: 61 AA: 47	BMFSFJ: 0.306 FedGov: 0.275
	SD(G) after 2015	BMZ: 219 BMWi: 156	BMZ: 391 BMU: 273	BMZ: 0.328 BMWi: 0.275
	SD after 2015	BMZ: 151 BMWi: 145	BMZ/BMWi: 232	BMWi: 0.330 BMZ: 0.272
	SDG after 2015	BMZ: 93 BMU: 51	BMZ: 159 BMU: 97	BMZ: 0.553 BMU: 0.298
Vertical (gov., non-national)	SD before 2015	EU: 9 Länder: 6	EU/Länder: 12	EU: 0.040 UNESCO: 0.025
	SD(G) after 2015	EU: 31 G20: 13	EU: 72 G20: 65	EU: 0.022 Berlin process: 0.019
	SD after 2015	EU/ G20: 27	EU: 65 G20: 44	EU: 0.033 Berlin process: 0.030
	SDG after 2015	G20: 11 UNEP: 9	G20: 21 UN:19	OSZE: 0.026 UN Woman: 0.020
Multi-stakeholder (non-gov.)	SD before 2015	Inclusion Initiative: 13 BBE: 7	Inclusion Initiative: 15 BBE: 13	Inclusion Initiative: 0.077 BBE: 0.043
	SD(G) after 2015	Partnership "Sus. Textiles": 25 DAM: 21	Partnership "Sus. Textiles": 27 PREVENT Waste Alliance: 25	PREVENT Waste Alliance: 0.040 DAM: 0.026
	SD after 2015	PREVENT Waste Alliance: 25 DAM: 21	Partnership "Sus. Textiles": 26 PREVENT Waste Alliance: 25	PREVENT Waste Alliance: 0.048 DAM: 0.030
	SDG after 2015	PAGE: 10 NDC-Partnership:8	PAGE: 11 National Platform BNE: 10	DGB: 0.020 WPN2030: 0.017

5. Interpretation of Findings

This section draws the empirical results of the three methodological approaches together to create valid inferences about the transformative potential of the SDGs on the institutional architecture of the German SD governance system. It is guided by the analytical framework with the three dimensions of integration (section 2.3) and its operationalisation (section 3.6). First, the question about a potential enhancement in integration is pursued. Subsequently these findings are related to the SDGs by exploring the steering mechanisms.

5.2 Integration effects in the German SD governance architecture

This section examines change effects that are visible for the national SD governance system in Germany over time. A descriptive focus is taken without evaluating whether the SDGs are the driver behind these changes. By comparing the time periods before and after 2015, temporal processes of change can be investigated through the network and the quantitative analysis. Results gathered from the interviews enrich these findings.

Generally, the quantitative analysis proofs a significant rise in the number of press releases over time. The issue of sustainability has constantly received more attention and action around it has been enlarged. An agenda-setting process is taking place. Also the interview participants agree that sustainability has a rising significance in Germany. This claim is substantiated by the fact that the size of the SD(G) network is enlarged when compared to the network persisting before 2015. This evinces a growth in institutional interaction. A general increase in integration is thus visible. In the following, this general enhancement is examined in more detail in line with the three dimensions of integration.

5.1.1 Horizontal coordination

The focus of this dimension lies on the integration of policy sectors and therefore on the ministries themselves. The increase in network size and press releases after 2015 proves that the network for SD governance in Germany is growing (see table 7, section 4.3). The higher average edge count after 2015 evinces an increase in the frequency of institutional interactions by the ministries. The higher node count symbolizes the enlargement of interaction partners. The ministries engage more intensively with the topic of sustainability and form more collaborations around it.

Also ministerial interaction shows a temporal rise as proven by an increase in network density. The amount of collaboration amongst the ministries and its frequency is higher. An increase in local cohesion is thus present and the communication amongst policy sectors is amended. Instead of a siloisation, a more holistic approach is taken.

The interview partners evaluate the governance structure for interdepartmental interaction as well working. The NSDS is addressed a main role for uniting SD conceptualisations and guiding decision-making. It is referenced as the „bible for sustainability of the federal government" („Bibel der Nachhaltigkeit für die Bundesregierung" BMEL, Interview 03.06.20). Reflecting its central position within the governance system (see section 4.1), the StANE is the most frequently mentioned institution. It is said to promote regular exchange about the work status in the different resorts and to allow for a constant inclusion of all ministries in decision-making. Contrary, one participant specifically outlines that interministerial cooperation is of extreme importance to safeguard the interest of its own ministry, to prevent actions that corrode these interests and to diminish ideological influences. ("Vor allem weil es natürlich auch darum geht gewisse Dinge, die uns zuwiderlaufen würden zu verhindern. Es ist wichtig, dass man da auch die Kompetenzen wahrt, dass es da auch nicht in die falsche Richtung läuft. Dass ideologische Dinge auch verhindert werden." BMVI, Interview 27.05.20). This form of negative

coordination mirrors that the interdepartmental collaboration is prone to tensions. This is confirmed by other participants, who describe the formation of fractions. Due to conflicting objectives inherent in the departmental division divergent interests arise here.

To conclude, as a growth of the SD network and an increase in cross-sectoral cooperation is visible, a general enhancement of *horizontal integration* can be assumed. However, tensions in interdepartmental cooperation are identified. This weakens the observed enhancement of integration within this dimension.

5.1.2   Vertical coordination

Since *vertical integration* concerns the coordination amongst diverse governance layers, the focus here lies on actors from the local, regional and international governance levels. For the network analysis, this implies to solely focus on nodes that are attributed as governmental but from a non-national governance level. As table 8 (see section 4.3) depicts, the number and frequency of interactions between the ministries and this type of actors is rising over time. The absolute and averaged node and edge count is higher in the SD(G) network after 2015. Especially the amount of interaction is increased, the number of actors rises to a lesser extent.

In the interviews, *vertical coordination* is valued for the context-specific adaptation of regulations that are necessary. In a federal system, the power and responsibility for the actual implementation on the grounds lies often with the Länder. Also safeguarding the synchronisation between multiple levels of administration is highlighted as an important driver for *vertical coordination.*

The interviewees most frequently mention the European Union (EU) and the Länder as governmental actors from divergent governance layers. This matches the results gathered by the centrality measures. Here, the EU, the UNESCO and the Länder are identified as the most important partners before the introduction of the SDGs. While the EU continues to be the most important actor, the Berlin process and the G20 have gained importance after 2015. In total, a shift towards international actors as the most central cooperation partners after 2015 is visible. This is seconded by the results of the interviews. International cooperation is reported to be strengthened since the introduction of the SDGs. Meanwhile, subnational governance levels receive less attention and play a lesser role for the work of the interviewees.

To put these results into perspective, the amount of interaction with governmental but non-national actors can be contrasted to interactions with societal stakeholders in the network analysis. In comparison, the number and interaction frequency across governance layers is lower (see table 8, section 4.3). It has an overall weaker role in the network before, but also after 2015. *Vertical coordination* also receives less attention in the interviews. Most interviewees report that they engage less with governmental actors from other governance levels. This is validated, as the majority of interviewees only reference institutions within the national political system or non-governmental actors when generally questioned about cooperation. Actors from different governance levels are only thematised

when specifically asked about. In addition, the variety of actors that are mentioned is lower than for *multi-stakeholder engagement*. One potential cause for this is the departmental division of work. It addresses particular units to work with actors from other governance levels, specifically within the BMZ and BMU. These departments were not included in the interviews.

To summarize, vertical integration is generally growing in Germany. The engagement of governmental actors from multiple governance levels is enhanced after 2015. A trend towards a stronger role of the international level in SD governance is visible. However, when comparing *vertical coordination* to the other two integration dimensions, it plays the least role.

5.1.3   Multi-stakeholder engagement

When investigating *multi-stakeholder integration*, the focus lies on institutional interaction with a variety of stakeholders from research, civil society, or the economic sector. Within the network analysis, patterns similar to those in *vertical coordination* become evident. The amount of non-governmental stakeholders (node-count) and the interaction frequency (edge-count) in the network after 2015 are amplified (see table 8, section 4.3). As said before, the number and frequency of collaboration with non-governmental actors has increased. The quantity of societal actors is nearly twice as much compared to non-national, governmental actors in the network after 2015. The frequency of interaction differs less, but is still enhanced for interactions with societal stakeholders.

Also interviewees report that collaboration with non-governmental stakeholders is improved and intensified. The engagement of stakeholders is valued for receiving feedback and advise as well as for understanding stakeholders' positions. It is described as a means to raise the level of ambition and exert necessary pressure to trigger action. Three interviewees report that the representation of non-governmental actors supports their work as they can use societal expectations to clarify and strengthen their arguments. Societal engagement raises the awareness level for sustainability and heightens the significance of the policy area. („Von daher ist die Zusammenarbeit da mit verschiedensten Gruppen sehr viel besser geworden, intensiver geworden, und auch der Bekanntheitsgrad ist dadurch gestiegen. Und dadurch ist auch der Stellenwert des Politikfeldes gestiegen." BMU, Interview 12.06.20). Lastly, two participants describe societal engagement as the mission of politics (BMJV, Interview 13.05.20; BMWI, Interview 12.06.20).

Most interviewees claim to work with all stakeholders. Seconding the findings of the network analysis, the number of mentioned collaboration partners in the interviews is also higher than for *vertical coordination*. The RNE, the Dialogue-Group and national associations such as the Federation of German Industries are most frequently mentioned across all participants. Contradictory, the centrality metrics depict the Inclusion Initiative and the National network for Civil Society (BBE) as the most important cooperation partners before 2015. In the network after 2015, the Partnership for Sustainable Textiles, the German Alliance for Marine Research (DAM) and the PREVENT Waste Alliance take the most central positions. These results show that intermediate institutions uniting actors from divergent societal

realms such as partnerships, alliances or networks dominate. There is no change in the type of actors visible over time.

Overall, this implies that the inclusion of stakeholders is strengthened. Especially the quantity and diversity of non-governmental actors is scaled-up after 2015. Integration within the dimension of *multi-stakeholder engagement* in the German governance system is intensified.

5.2   Steering mechanism of the SDGs

This section explores what steering mechanisms the SDGs employ in Germany and how they impact the German governance structure. Thus, an explanatory perspective is taken that examines explanations behind the changes in integration. Unless otherwise stated, the whole section builds on the results of the interviews.

The SDGs are generally important for SD governance and all interviewees claim a commitment to the SDGs in their work. With the exception of two participants, all referenced them when talking about sustainability without being questioned in that direction. As in the section above, the three different steering mechanisms are examined in more detail in the following.

5.2.1   Organisations & Procedures

Interviewees highlight that the SDGs induce structural changes in the German SD governance architecture. First of all, the German NDSD was adapted as a means of implementing the SDGs. It serves as the main reference point for German SD governance and thus influences the work of all institutions. Second, two new institutions that facilitate societal participation were founded for the implementation of the SDGs: the Dialogue-Group ("Dialoggruppe") in preparation of the StANE and the annual Sustainability Forum ("Forum Nachhaltigkeit") at the Federal Chancellery. Specifically, the former institution is highly valued by the interviewees. It consists of 15 permanent and five topic related non-governmental institutions. The group is consulted by the responsible ministry for a preparatory meeting before bringing a topic into the interdepartmental meeting of the StANE. Third, the Science Platform Sustainability 2030 ("Wissenschaftsplattform Nachhaltigkeit 2030") was launched in 2017 (Federal Government, 2018). It works as an interface between civil society, academia and policy and provides scientific expertise. This all results in an alteration of the existing *organisations and procedures* in Germany through the SDGs, that causes an enhancement of societal participation. Substantiating this claim, interviewees specifically report that the SDGs scaled up *multi-stakeholder engagement* through structural and procedural changes. The identified changes have not only been symbolic but actually increased the quality and quantity of interaction.

Furthermore, the German NSDS in the beginning of 2017 demands from each resort to nominate a ministry coordinator for SD that eases interdepartmental contact (Federal Government, 2016a). This was implemented as a measure to strengthen coherence across sectors. In addition, the quantitative

analysis reveals 24 incidents in the press databases where a ministry takes action on an SDG from another policy sector. This equals to 25,53% of all references to specific SDGs. The engagement for an SDG outside the actual departmental responsibility is based on cross-sectoral cooperation and mirrors a systemic approach to SD. This indicates growing awareness and cooperative endeavours to break up policy silos. Existing *procedures* are changed to promote an integration of the environmental, social and economic spheres of SD.

On the other hand, the role of the SDGs in the network analysis is rather weak. The density of direct cooperation between the ministries is lower for the SDG network than for the SD network after 2015 (see table 7, section 4.3). This indicates that the SDGs are not the main driver behind the increase in *procedures* for interdepartmental coordination that is visible over time. Moreover, the SDG network is smaller in absolute and relative manner when compared to the SD network. Thus, the enhanced number of *organisations* in the governance system is not directly resulting from the SDGs either. The same accounts for the increasing inclusion of non-state actors and governmental actors from divergent governance levels as described above (see table 8, section 4.3). The SDG network includes a smaller amount of non-governmental stakeholders and actors from other governance layers. The number of *organisations* in the SD networks outweighs the ones from the SDG network after 2015. Overall, this means that there is no evidence for the SDGs to alter coordination *procedures* amongst institutions. No proof is found that identifies the diversified set of *organisations* as a direct effect of the SDGs. The network analysis gives no clues for the SDGs to channel a transformation in the three integration dimensions over this mechanism.

To summarize, the quantitative analysis shows that the ministries engage in cross-sectoral implementation of the SDGs which is related to cross-sectoral coordination. The interviews depict divergent structural changes that were established by the federal government in the course of SDG implementation. This points towards an integrative impact through the mechanism of *organisations and procedures* that translates into enhanced *horizontal coordination* and *multi-stakeholder engagement*. The effects for the inclusion of stakeholders are deemed as specifically strong. However, the results from the network analysis do not evince that the SDGs are the driver behind alterations in *organisations and procedures* and the attached enhancement of integration.

5.2.2   Ideas & Values

The SDGs are reported to have a huge impact on the conceptualisation of sustainability. When questioned about the transformative effects of the SDGs, all interviewees state that the SDGs have changed their comprehension of sustainability. It is the most frequently stated area of influence. Several reasons for their transformative power in changing dominant *ideas and values* are given.

First, the SDGs entail a more systemic and holistic approach to SD. Their integrative concept outlines synergies, trade-offs and general interdependencies. This pushes for cross-sectoral thinking and cooperation. The base for successfully horizontal integration is laid. Second, the holistic approach

includes themes that are not addressed in the traditional conceptualisation for sustainability. This leads to a different problem framing with new mandates for ministries. As an example serves the inclusion of the BMJV into the sustainability discourse that traditionally did not identify itself much with the issue. The engagement of the BMJV changed particularly with the introduction of SDG 16, that addresses good governance and the constitutional state. The SDGs have also achieved the fusion of the development and sustainability discourse, which had been divided by the MDGs. On top, the new problem conceptualisation also entails an empowerment of the social dimension of sustainability. Third, the importance of the principle to "leave no one behind" is highlighted as especially important in shaping the perception on sustainability. Interwoven with this is the fact, that the SDGs outline the responsibility of Germany with regards to its effects on other countries. Forth, goal-setting as a governance strategy is valued: concrete and precise goals and targets enhance the potential for operationalisation. The indicators set clear targets that are measurable and easier to pursue. Thus, the Agenda 2030 provides distinct ideas for concrete action. The urgency to act is highlighted. Lastly, the SDGs are the result of a global process and represent global consensus. As the process of developing the SDGs was open and inclusive, ownership of the concept across different types of actors is enhanced. This sets the base for a common understanding of the concept across actors and the base for effective cooperation.

Opposing these findings, a lack of consistency in the conceptualisation of sustainability is disclosed. Even though the NSDS is mentioned as a point of reference for a common definition by four participants, the given definitions of the term vary amongst participants. Several interviewees also explicitly mention a lack of consensus or point out that other ministries address a different meaning to sustainability. Also missing conceptual coherence with non-governmental stakeholders is admitted. To safeguard their own interests, actors are said to mostly pick their own, narrow focal point. Their interests often diverge. However, this is not necessarily perceived as negative but more as an integral part of a dialogue. One interview partner summarizes this effect by saying that the SDGs manage to provide a shared basis amongst actors. Nevertheless, rich discrepancies persist in the details. Normative conformity in *ideas and values*, a precondition for successful coordination, is lacking. This minimizes the effect of a renewed sustainability understanding triggered by the SDGs to serve as a base for interaction and integration.

Following the quantitative analysis, the SDGs are not frequently communicated in press releases (see table 4, section 4.2). Relative and absolute numbers of SDG references are low for all ministries besides the BMZ. On average, only 1,6% of all press releases deal with the SDGs with half of the ministries releasing less than 10 statements with SDG content. The number of press releases referencing the SDGs is remarkably low in comparison to the amount of general references to sustainability. This indicates that the SDGs are not adopted as the main reference framework for sustainability. The SDGs did not dominantly change the *ideas and values* about sustainability that are represented in press communication.

To summarize, the SDGs are assigned a great potential to change *values and ideas* towards sustainability. Individual beliefs and conceptualisations of actors in the governance system are altered. Mental silos are broken in the recognition of the holistic, systemic approach to sustainability that the SDGs provide. This also translates into the inclusion of sectors that haven't been part of the discourse before. Taken together, all of these effects point towards an enhancement of *horizontal integration*. through the mechanism of *ideas and values*. However, conceptual coherence amongst actors is not achieved. The SDGs did not unify the understanding of sustainability across all actors of the governance system. The transformative effect of the SDGs that is channelled through this steering mechanism rather happens on the individual level. This limits its impact on the overall system and weakens its influence on integration.

5.2.3   Leadership & Commitment

The interviews showed that *Leadership* for sustainability did not change in Germany. Participants constantly refer to the chancellery next to the BMZ and BMU as leading. The perception of interviewees on leadership and engagement is still grounded in the classical distribution of roles due to the departmental divide. The BMZ and BMU are termed as the spearheads ("Speerspitzen", Interview 13.05.20) or the do-gooders ("Gutmenschen", Interview 12.06.2020). Other ministries generally position themselves as being less engaged as the BMZ and the BMU. This is mostly because of the traditional departmental divide with its divergent thematic fit to sustainability issues.

Drawing from the network analysis, the centrality measures address a leading function to the BMFSFJ, AA and the federal government in the network before 2015. While the AA has more interactions overall, the federal government fulfils the role of a mediator in the network. The BMZ is the most central actor after 2015, whereas the BMWi and the BMU have the second highest scores. When breaking up the networks, the BMZ and the BMWi dominate in the network for SD after 2015. However, the scores of the BMZ and BMWi in the SD network are very similar, indicating a split leadership for sustainability. Regarding the SDG network, a leading role is identified for the BMU and BMZ. These findings suggest that the leadership of the usual suspects being the BMZ and BMU is manifested through the SDGs. While other ministries are central before 2015 and the BMWi is dominant for SD after 2015, the SDG network features the BMZ and BMU as the most central actors. Thus, there are no signs that leadership for the SDGs in Germany is extending over the traditionally appointed ministries. The SDGs have not altered the leadership structure in Germany. There is no evidence for the SDGs to trigger an integration process over the steering mechanisms of *leadership*.

Meanwhile, *commitment* is assessed as rising. All interview partners report a high dedication to sustainability by their ministry. The SDGs create pressure to invest in and engage with sustainability. They managed to renew and enhance political attention on the topic. An intensifying significance of the topics within the ministries but also in general is reported. To put this in relation, it is also mentioned that sustainability still does not play on the centre stage of political decision-making ("Wir spielen da

immer noch eher auf einer Nebenbühne"; Interview 12.06.20). Even though political attention is enhanced, the topic has still not the highest priority in the German governance system.

In general, the quantitative analysis reveals a heterogeneous handling of sustainability by different ministries. Sustainability is present to a different degree in their daily work. This is reflected in the divergent number of press releases related to SD and the SDGs. One the one side, the BMZ (43,34%), the BMEL (32,77%), followed by the BMBF (21,54%) release the most press statements dealing with sustainability in relative numbers. They pay the most attention to sustainability in their press communication. On the other side, the AA (5,00%), the BMVg (6,14%) and the BMI (6.71%) mention sustainability the least. The divergent engagement is also reported to be driven by the traditional fit to sustainability in the ministerial jurisdiction.

The SDGs are most accounted for the by the BMZ (15,26% of all their releases), the BMEL (2,52% of all their releases) and the BMU (2,31% of their releases). Meanwhile, the BMI and BMVI do not engage with the SDGs in their press releases at all. The engagement with the SDGs is generally low and the goal of mobilizing all relevant actors is not met. The SDGs are not visible to trigger throughout *commitment* by all ministries. The quantitative analysis further shows a significant rise in the amount of press statements related to sustainability over time. *Commitment* is thus rising over time. However, due to the low numbers of press statements with SDG content, this general agenda-setting process cannot be primarily related to activities around the SDGs. Press releases with SDG references do not play a significant role for the rising trend in sustainability communication. Thus, there is no indication in the quantitative analysis that the SDGs can trigger an enhancement of *commitment*. This steering mechanism cannot be shown as a cause for the visible enhancement of integration in Germany.

To summarize, the findings for *leadership and commitment* are very different. The SDGs manifested the existing patterns of *leadership* distribution in German SD governance on the national level. No changes are visible for *leadership* across the methods. *Commitment* in turn became enhanced over time. Both the quantitative analysis and the interviews show a general increase in the engagement for sustainability. This translates into a more widespread involvement of actors which can enhance integration of the system. While the interviewees relate this effect to the SDGs, the quantitative analysis evinces no proof for the SDGs as the main driver of this increase in *commitment*. It is therefore not possible to neglect or to substantiate the hypothesis that the SDGs can transform integration through the mechanism of *commitment*.

6. Discussion

This chapter discusses the present findings for integration in the German SD governance architecture. After a general reflection, mediating factors that determine the influence of the SDGs on the individual ministries are given. Subsequently the integrative effects of individual SDGs are briefly reflected upon.

Furthermore, the theoretical and practical implications of this study are discussed and limitations disclosed.

Generally, an agenda-setting process takes place in Germany indicating a rising awareness of sustainability. The frequency of institutional interaction and the number of agents included is growing. This increase extends to the enhanced inclusion of non-governmental actors and institutions from divergent governance levels. In addition, ministerial interaction is intensified as proven by the increase in network density. These changes translate into enhanced integration of the German governance architecture since 2015 when compared to the previous time period (2012-2014). Integration effects regarding *multi-stakeholder engagement* and *horizontal coordination* are stronger than for *vertical coordination*.

In the attempt to relate these finding to the SDGs, a gap between the internal perspective of actors and the external perspective captured in the quantitative and network analysis are identified. On the one hand, there is no conclusive evidence for the reinforced integration to be triggered by the three steering mechanisms of the SDGs when solely relying on press databases. A co-existence of a governance network for SD next to one for the SDGs is proven. Meanwhile, a system-wide mobilisation of all ministries for the SDGs is not achieved, communication related to the SDGs is low. This implies that a coherence of *values and beliefs* and *commitment* to the SDGs is lacking across the system. Only the high amount of cross-sectoral implementation of the SDGs actually shows an integrative effect through an alteration of *procedures*. On the other hand, when turning to the statements of interviewees, the SDGs are seen as triggering a change process. Structural alterations as captured in *organizations and procedures* and changing *values and beliefs* are identified as the main steering mechanisms. Especially the enhanced inclusion of non-governmental stakeholders is explained as channelled through these steering mechanisms.

The existence of a renewed sustainability conceptualization is seconded by previous research. Heinrichs and Laws (2014) focus on the institutionalisation of sustainability in Germany prior to the introduction of the SDGs. In their interviews, sustainability is widely conceptualized solely from an environmental perspective. Integrative approaches are lacking (Heinrichs & Laws, 2014). Contrary, holistic definitions are emphasized by interviewees in the present study. A change process since Heinrichs and Law's study in 2014 is evident.

The findings of this study are in partial agreement with Breuer et al. (2019), who research the institutional design for SDG implementation in different countries. Overall, Breuer et al. (2019) found most countries to opt for institutional frameworks that build on strong horizontal coordination amongst policy sectors. Meanwhile, the integration of societal stakeholders and the coordination with vertically separated administrative levels is falling short (Breuer et al., 2019). In the present study, Germany is also shown to conduct structural changes for cross-sectoral coordination. In contrast to previous research, the present analysis identifies an emphasize on multi-stakeholder engagement that was

triggered by the SDGs. Germany conducted considerable institutional changes in this area and may serve as an international role model.

As also shown by Breuer et al. (2019), vertical coordination is found to be mostly unaffected by the SDGs in Germany. Previous research further identified that Germany relies on already existing vertical coordination mechanisms for SDG implementation (Gottenhuber & Mulholland, 2019). Coordination procedures are not specifically altered. This seconds that the SDGs did not alter *organisations and procedures* and do not have an integrative effect over this steering mechanism.

A potential explanation for the clash between external and internal observations in the present study could be a lack of mainstreaming of the SDGs. The SDGs could miss a throughout diffusion in all areas of ministerial work. Heinrichs and Laws (2014) identified a comparable gap between the importance given to sustainability and its factual realisation in their data. They conclude, that sustainability is not a standardized practice on the national level in Germany. Similarly, interviewees in the present study describe the SDGs as significant, but their measured impact on the system is small. The SDGs are not prevalent in the press releases. However, they are applied in the sustainability reports of all ministries. They are used for self-evaluation and all areas of the ministerial work are related to the SDGs (AA, 2019; BMAS, 2019; BMBF, 2019; BMEL, 2019; BMF, 2019; BMFSFJ, 2019; BMG, 2019; BMI, 2020; BMJV, 2020; BMVg, 2018; BMVI, 2020; BMWi, 2017; BMZ, 2019). This is a first step to ensure that procedures within all ministries can be aligned with the SDGs. Nevertheless, the sustainability reports fall under the responsibility of the ministerial sustainability coordinators, and do not mean that the SDGs are influential in the daily practice of the ministry.

Thus, a potential explanation is that the SDGs transform the work of the sustainability community itself. For the system as a whole, as observed by the network and quantitative analysis, their effects are weaker. This is substantiated by the interviewees. Some interview partners mention that they want to increase press communication about the SDGs but are facing resistance. To work with the SDGs is not a routine practice outside of the sustainability department. Additionally, two interviewees self-report that the overall significance of sustainability is still rather low. Next to the image of not being on the centre stage described above, the images of being jesters and a radical minority are used ("Wir gehören als Nachhaltigkeitsleute immer noch gewaltig in die Richtung Hofnarren. Die radikale Minderheit." BMJV, Interview, 13.05.20). This all supports the claim, that the SDGs have an impact on actors that are already engaged, but fail to mobilize the broader institutional landscape.

Another potential explanation is the sheer nature of press communication itself. Interviewees believe that sustainability in general and the SDGs in particular are too complex for press releases. Integrative, systemic concepts are not easy to convey. On top, press releases are a means of gaining prestige for the specific ministry. They focus on praising their own work rather than on cooperative endeavours. This implies that the SDGs might still influence policy-making and shape institutional interaction, but are just not explicitly mentioned in press releases.

Additionally, the presented results show that practical engagement with the SDGs differs largely amongst the ministries. The data of relative press releases is very distributed (see figure 3, section 4.2). While some ministries engage highly with sustainability and the SDGs, others fall short to communicate about their work in this field. The lack of full involvement of all ministries is also shown in previous studies (e.g. Scholz et al., 2016) and thus continues to hamper integration. To explain this variety, several mediating factors are presented below.

6.1   Mediating factors

The quantitative analysis shows a huge variability in the engagement with sustainability and the SDGs across the ministries. This results in a divergent impact of the SDGs. As a potential explanation, several mediating factors that determine the influence of the SDGs are identified in the interviews. To start with, individual people in leadership positions are key figures. This is specifically important but not limited to the personal engagement of the specific ministers in charge. The more individual persons in leadership positions care about sustainability, the higher its significance for the work of the ministry. Here, the political orientation of the ministry also comes into play.

Second, the Ressortprinzip causes sectoral division with divergent fit to sustainability issues. Ministries like the BMZ and BMU have always been more closely connected to the theme of environmental protection and sustainability than others. Path-dependency seems to cause institutional inertia in resorts that traditionally engaged less with sustainability. Strong tension between sustainability that demands systemic and broad perspectives and the departmental logic which demands an isolated consideration of specific issues emerge. Meanwhile, in the departmental divide, there is no ministry addressed as being directly responsible and accountable for sustainability. This translates into the lack of a pooled interest in pursuing sustainability and weakens visibility and engagement. Even though the high-level allocation within the Chancellery is valued, it rather fulfils the role of a mediator. The political function of the Chancellery is to bridge the interests of the ministries and support their collaboration. Its resources to implement sustainability itself are limited. However, this lack of a focused interest and the crash with the Ressortprinzip is not specific to sustainability, but lies in the nature of all crosscutting issues.

Third, the NSDS demands all ministries to be involved in SDG implementation. Yet, within the ministries, sustainability can freely be allocated to a division. This results in divergent influence and status of the topic within the different administrations. Additionally, material and human resource allocation varies.

Fourth, the analysis found weaker links to regional and local government actors. This is not only due to insufficient engagement of the ministries themselves. Also large differences amongst the Länder and municipalities are revealed: while some are perceived as very engaged, others do not engage with

Utrecht University

the issue nor release sustainability strategies yet. This translates in different amounts of coordination with the national level from their side.

6.2   The role of individual SDGs

This thesis observes integration effects of the SDGs as a whole without looking into the role of the individual goals. Nevertheless, the quantitative analysis differentiates between cross-sectoral and sectoral SDG implementation and therefore captures references to the specific SDGs separately (see figure 5, section 4.2). Based on these results, the significance of specific SDGs for integration is discussed briefly. Since this is only a minor part of this thesis and the number of references to the SDGs is low, this interpretation stays hypothetical and rather serves as the base for further research.

The SDGs with the highest amount of cross-sectoral references in the German ministries are SDG 3 dealing with health (21,21% of all cross-sectoral references) and SDG 13 which captures climate action (15,15% of all cross-sectoral references). They are targeted in the most integrative manner by the German ministries. The strong horizontal coordination for SDG 3 is potentially coined by Germanys strong engagement for the SDG on the international level. Germany advocated together with Norway and Ghana for the launching of a "Global Action Plan for Healthy Lives and Well-Being for all" as a means of promoting SDG 3 worldwide (Federal Government, 2016a). The BMZ and the BMG form a strong coalition to pursue this Action Plan. Regarding SDG 13, the strong horizontal integration is potentially driven by the high political attention that arose on the topic of climate change. It is shown that climate change receives unprecedented media attention while other topics in the sustainability discourse fall shorter in media coverage (Barkemeyer et al., 2017). Germany has a history in climate policy and the topic has always been high on the political. The cross-cutting nature of the topic is well accepted, which pushes for multi-sectoral implementation.

On the opposite, there are also SDGs that are lacking cross-sectoral references entirely or almost entirely. SDG 4 has the highest absolute amount of references from ministries that operate in its topic field (see figure 4, section 4.2). SDG 2 and 12 are solely tackled by ministries that are in charge of their implementation. Cross-sectoral references are lacking completely for these two goals.[8] However, it is likely that the cause behind this lack of an integrative approach is different for the SDGs.

On the one hand, the targets of SDG 12 ("Responsible consumption and production") are found to have the most thematic connections to other goals, making it the most integrated goal of the SDGs (Le Blanc, 2015). Due to its crosscutting targets, six federal ministries claim responsibility for SDG 12 (see table 11, Appendix A). This serves as an explanation for the lack of cross-cutting references: if already six ministries take responsibility for the goal, the chances of a ministry from an unrelated policy

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[8] Also SDG 1 and 17 are solely referenced by ministries that have matching sectoral responsibilities. However, the overall amount of references is very low here. Thus, the problem is rather a general lack of attention than the missing cross-sectional references. Further, SDG 17 is the goal focused on global partnerships and means of cross-cutting implementation. It is rather an enabler and does not correspond to a thematic policy field (Tosun & Leininger, 2017).

field to target this goal are low. Thus, the lacking cross-sectoral application of SDG 12 is not primarily a sign of missing coordination. On the other hand, SDG 2 about zero hunger falls under the remit of just three ministries (BMBF, BMEL, BMZ). Solely the BMZ and the BMEL address SDG 2 in their press-releases. Thus, the potential explanation given above does not account for the lacking cross-sectoral attention on this SDG. *Horizontal coordination* for the topic field of hunger is indeed low in Germany. Confirming this claim, an evaluation of SDG 2 indicators identifies that the German NSDS overlooks external effects on developing countries in this field and fails to integrate interactions with crucial policy areas such as bioenergy or agricultural trade (Holzapfel & Brüntrup, 2017).

SDG 4 ("Quality Education") falls under the responsibility of four ministries. Education is a fundamental medium and "lies at the heart of Sustainable Development"(Franco & Derbyshire, 2020, p. 57). This is mirrored in Germany, since the Federal Ministry for Education (BMBF) is taking responsibility for all SDGs. The long tradition of education for sustainability also explains the high amount of overall attention on this SDG in Germany. This could have potentially eased cross-sectoral cooperation. Further research is necessary to understand why cross-sectoral implementation is nevertheless weak for the SDG.

When turning towards the general acknowledgment of the individual SDGs, SDG 11 stands out. SDG 11 ("Sustainable Cities and Communities") is the sole SDG which is not mentioned in any press release in the entire dataset. SDG 11 addresses urban development and is the only SDG which is clearly allocated at the subnational level. For all SDGs the interplay of the global and national level is crucial for goal achievement, but for SDG 11 specifically the interaction with the local level comes into play (Koch & Krellenberg, 2018). The fact that SDG 11 is not targeted at all underpins the weak *vertical coordination* shown in this research. On top, the responsibility for SDG 11 lies within the BMBF, BMI and BMVI. However, the BMI and BMVI are exactly the two ministries with zero communicate about the SDGs in their press database. This bears the risk that SDG 11 falls short in public awareness in Germany. Since communication works as a proxy for action in this thesis, the absence of attention on the national level could potentially hinder goal achievement. On the other hand, SDG 11 tends to be targeted by the SD strategies at the level of the Länder (Scholz et al., 2016). More research on the subnational level is thus necessary to determine the role of SDG 11.

6.3   Main findings in relation to existing scientific research

Above all, the present study enriches knowledge about changes in the integration of the German SD governance system. Integration effects are further related to the SDGs, which allows for conclusions on their transformative potential. This research shows that the developed analytical framework is well suited to research integration effects and the mechanism behind them. Its application can thus be extended to other institutional contexts and other methodological approaches. Moreover, it proves network theory to be a suitable tool for investigating SD governance systems and their development over time. Using network analysis techniques offers new opportunities to investigate integration from a

macro-level perspective. Developing such system-wide approaches is important, since the existing literature on integration is dominated by micro-level research (Tosun & Lang, 2017).

When reflecting about implications of this research, questions about the comparability of a single country case study arise. The SDGs in itself are inherently ambiguous and are interpreted differently by divergent countries. Moreover, each country has a specific context and is prone to different structural constrains in the improvement of integration in its SD governance architecture. Nevertheless, when identifying key factors that impact the choices for the institutional establishment of the SDGs, chances for valid inferences to other contexts are increased. Germany is coined by its federal system and departmental divide (Ressortprinzip). Consequently, states that operate as federal republics are most likely to show similar patterns. Austria comes to mind, since it also held the same SDG index score as Germany in 2019, symbolising a similar performance towards goal achievement (Sachs et al., 2019). Meanwhile, in their study on SDG implementation across European countries, Niestroy et al. (2019) provided a light assessment of governance dimensions for SDG implementation. These included horizontal coordination, leadership, commitment and stakeholder participation. Here, Slovakia, Finland and Latvia scored most alike to Germany (Niestroy et al., 2019). In addition, Latvia established a standing committee for SD in 2014, which is comparable to the German PBNE. Nevertheless, to ensure how the institutional architecture is transforming in other countries as compared to Germany, more in-depth research is needed.

6.4   Practical implications

A number of crucial findings about integration of the German SD governance system are identified in this study. These may serve as key learning points or advice for practitioners working within the German political system.

1. **The strongest potential for improving integration lies in the vertical coordination with subnational administrations**

Even though vertical coordination in Germany is amended over time, the progress is slower than in the other two dimensions. The central point for anchoring the SDGs in Germany, is the NSDS. This strategy is not binding for the Länder, who in turn develop their own SD strategies. Currently, 12 out of 16 Länder have a SD strategy that relates to the SDGs (Niestroy et al., 2019). A closer coordination of the different strategies could achieve more synchronisation amongst the federal and the Länder level. Further, traditional coordination mechanisms amongst governance layers could be complemented with new collaborative procedures by setting up new institutions and strengthening the role of existing ones. So far, Germany mostly builds on existing structures in this realm of coordination (Gottenhuber & Mulholland, 2019). Also, enhancing coordination capacities amongst departments within the ministries that are responsible for different governance levels could be helpful.

2. Elevating well working institutional structures promotes integration

The existing systemic attempt to overcome sectoral fragmentation in Germany is evaluated as strengthened. Nevertheless, fraction building and tensions across ministries are visible, accompanied by signs of unequal commitment. Cross-sectoral integration can be promoted more strongly by providing incentives for collaboration. These range from adequate resource allocation to the development of operational frameworks and strategies (Le Blanc, 2015). However, the focus should generally rest on capacity building.

With regards to coordination mechanisms for multi-stakeholder engagement, Germany has already developed a well working institutional design. Ongoing support for the respective institutions can ensure that the quality of their work can be sustained. Furthermore, the institutional design for SDG implementation is shown to be insufficient for societal integration in most countries (Breuer et al., 2019). Here, Germany could act as a role model and advocate its positive experiences in global partnerships.

3. Mainstreaming the SDGs in daily practice enhances their transformative potential

The mainstreaming of the SDGs into ministerial work is key for their transformative power to unfold system-wide. It is desirable that the SDGs play a role in daily working routines and decision-making across all ministries. The ministerial sustainability reports that link the ministerial work to the SDGs are a good starting point here. Due to their integrative nature, the connecting of operating procedures to the SDGs can help to consolidate cross-sectoral thinking and collaboration. The establishment of an SDG impact assessment and budget checks may be a helpful strategy to enhance the impact of the SDGs on long-established organisations and procedures. The assessment could build on the existing sustainability assessment tool (Federal Government, 2018) as well as on already established SDG assessment methodologies (e.g. SDSN Northern Europe, n.d.).

Furthermore, a clear communication about work related to the SDGs is recommendable. This also entails a wide-spread use of the SDGs in press communication. Thereby, conceptual coherence regarding the term sustainability is ensured and a uniform normative framework established. This promotes the new integrative and systemic idea of sustainability that is introduced by the SDGs.

4. The equal inclusion of all SDGs can help to promote Agenda 2030 and integration

The SDGs entail a unique systemic approach to SD (Le Blanc, 2015). The goals themselves are "integrated and indivisible" (UN, 2015, p. 9). Due to the reinforcing and conflicting links amongst the goals, the achievement of the Agenda 2030 ultimately depends on progress in every single SDG. This implies that the lacking attention on SDG 11 could impede the realisation of Agenda 2030. An enhanced consideration of SDG 11 that is located at the subnational level can be a way of improving procedures for vertical coordination. The Interministerial Working Group on Sustainable Urban Development that was already launched in 2017 could be a way forward here (Federal Government, 2018). The working

group is currently not referenced in the press-database and in the reports of interviewees, its significance for the SD governance system could be scaled up.

6.5   Limitations

This study is prone to several limitations. The most crucial and unavoidable one is the Fundamental Problem of Causal Inference since it is not possible to observe the institutional architecture without the influence of the SDGs (King et al., 1994). However, the fact that one can never observe a causal effect is a general obstacle for determining causality in research. More specific to this study is the fact, that a single country study is always limited in its generalizability. The results gathered in this study are context sensitive. This is especially true, as only the German national level is investigated. Potential institutional changes on the subnational level are thus not captured. As governance arrangements on any level are imperfect, Andersson and Ostrom (2008) argue for the urge to consider complementary back-up institutions that are established at other layers of governance to offset these shortcomings. Hence, upcoming research should enlarge the focus to lower governance layers in Germany. Due to time restrictions, this could not be done in the present study. In addition, other change effects besides integration are not investigated in this paper. Since the SDGs might influence the German political system in other ways such as causing alterations regarding ecological integrity, further research will be necessary.

Turning to the use of press releases as research material, different conceptualizations of sustainability are present in the research material. Depending on the intentions and ideas of the applicant, the same word, in this case predominantly the keyword "Nachhaltigkeit" ("sustainability"), can be applied to cover divergent ideas (Klostermann & Cramer, 2006; Swaffield, 1998). The contextual meaning in which the term is used can be rather related to durability and longevity or can solely emphasize one of the dimensions of sustainability. This issue is confirmed by the interviews which highlight different interpretations of the word sustainability in German ministries. The conceptualization of sustainability determines its practical implementation, which altogether weakens the comparability of the research material. The ambiguity of the term sustainability could also be an explanation for the quantitative dominance of press statements referencing sustainability in general over the ones that are concerned with the SDGs. However, contextual meaning is out of the scope of this research and can neither be controlled for in the quantitative analysis nor the network analysis. A throughout discourse analysis of sustainability and the SDGs within the German SD governance system is therefore a good starting point for further research.

Additionally, an increasing amount of partnerships and participation requires rising coordination efforts (Niestroy & Meuleman, 2016). Inherent to all human problem solving strategies, this increases diversity and social complexity within the system which can hinder or enhance sustainability (Tainter, 2006). Reflecting on social complexity, Tainter (2006) argues, that long-term sustainability can only be

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prevailed if complexity is understood and controlled, while an endless increase of complexity can cause collapse. Consequently, there might be an ideal size of a governance network, with a decreasing efficiency and performance when too many actors get involved. For the course of this research the simplified assumption is taken, that the engagement of more actors and an increasing coordination between actors has a positive impact on institutional integration. Even though this can be a valid assumption, it might not lead to a desirable outcome. A broader network can potentially lower the performance of the SD governance system. This was not accounted for in this research, since there is no consensus on a specific institutional model that delivers best on the Agenda 2030 and the SDGs (Breuer et al., 2019).

Moreover, the chosen methods are prone to some limitations. Literature suggests that data availability is the key issue for a network analysis (Scott & Carrington, 2011). In the present study, data was lacking before 2012 and was only partially available for some ministries in the investigated time period (2012 – 2019). By averaging metrics, the potential bias in the results could be minimized. Regarding the interviews, the gathered data can only represent the subjective perspective of single actors, it is always prone to an inherent bias. In this study, administrative staff working in the sustainability departments of the ministries was interviewed. This means that interviewees are responsible for SDGs implementation themselves and have an intrinsic interest in presenting their work as well functioning. In order to capture the broader influence of the SDGs, succeeding research should include interviews with ministerial employees that are actually not working in the sustainability department itself. Nevertheless, the inherent bias of the interviews is minimized through the combination of three methodological approaches.

7. Conclusion

Enhancing integration across levels of governance, across policy fields and across societal realms is seen as a basic condition to set this world on a more sustainable path. As an integrative and indivisible framework, the SDGs are an unpreceded effort to promote the required integration. To show the impact of these global goals in practice, this research investigates how the SDGs have transformed integration within the institutional architecture of the German SD governance system on the national level.

The research starts off by creating a conceptualisation and operationalisation of the term integration and the mechanism that can bring it about (RQ 1). Change processes in integration are examined within three dimensions: horizontal coordination, vertical coordination and multi-stakeholder engagement. Three steering mechanisms are conceptualized as channels through which the SDGs can impact these integration dimensions, namely Organisations and Procedures, Ideas and Values, and Leadership and Commitment.

The study design then operates on two levels. First, RQ 2 demands to investigate time-dependent change processes and their consequences for integration of the SD governance system. Here, the study proves a growth of the SD governance network after 2015: more attention is addressed to sustainability, the frequency of institutional interaction reinforced and the actor constellation expanded. The institutional design is more integrated with respect to the horizontal and the multi-stakeholder dimension. Vertical coordination is also identified as growing, but to a lower extent. Integration effects are weaker within this dimension.

On the second level, RQ3 tackles the relation of these changes to the SDGs by assessing the three steering mechanisms. Leadership is shown to be unchanged, which neglects it as a steering mechanism. Commitment is shown as rising over time, to what extent this is driven by the SDGs is yet to be determined. Meanwhile, the intrinsic perspective of the interviewees mainly reveals structural (Organisations & Procedures) and conceptual changes (Ideas & Values). The SDGs are described to have altered the dominant definition of sustainability. A more holistic and systemic approach is adopted. Moreover, new institutions are created and existing procedures of coordination amended for their implementation. These steering mechanisms can trigger an enhancement of multi-stakeholder engagement and horizontal coordination across the sustainability departments. However, in the external observations through the press database, general conceptualisation of sustainability stays dominant. References to the SDGs and institutional coordination around them are rare. This questions the influence of the SDGs outside the sustainability community. A diffusion problem might have occurred.

Conclusively, the overall research question how the SDGs have transformed integration within the institutional architecture of the German SD governance system can be answered. The necessary condition for an influence of the SDGs is met: The German SD governance system is shown to be more integrated after 2015. Still, the ability of the SDGs to enhance integration on the macro scale of the institutional networks cannot be proven. Press releases that generally deal with sustainability outweigh the ones that specifically reference the SDGs. On the micro level, their transformative power is larger. Considering the daily work of sustainability coordinators, the SDGs are reported to trigger an enhanced stakeholder inclusion and to a lower extent also the reinforced coordination amongst policy sectors. Keeping in mind the large data variability across ministries, the transformative potential is assumed to be diverging amongst ministries. Engagement of actors in leadership positions, the traditional thematic fit to sustainability, and the resources and power addressed to the sustainability department are factors that determine an effect.

Overall, the SDGs are still a quite recent phenomenon with a comparably short operating time. One could argue that it is therefore too early to recognize effects triggered by the SDGs, especially as structural change happens rather slowly. Also the normative character of the goals needs time to unfold and ultimately impact decision-making. However, considering that the goals are set to be reached by 2030 and given the fact that an integrated institutional architecture builds the base for goal achievement,

I would argue that institutional change processes should be on the way by now to make a profound contribution. Therefore, taking stock of change processes now is justified.

To finally consider the broader background of this research, the SDGs are understood as an expression of the new global governance strategy of goal-setting. The governance-through-goals approach is identified as having a rather small effect on national-level SD governance architecture. Even though signs of a transformation process are present, a system-wide effect of the SDGs cannot be manifested. Nevertheless, this thesis only examines integration, which is only one out of several effects that can potentially be caused by the SDGs. What consequences this has for global governance and what alternative approaches could induce greater transformations is yet to be determined.

Utrecht University

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9. Appendix A: Quantitative Analysis
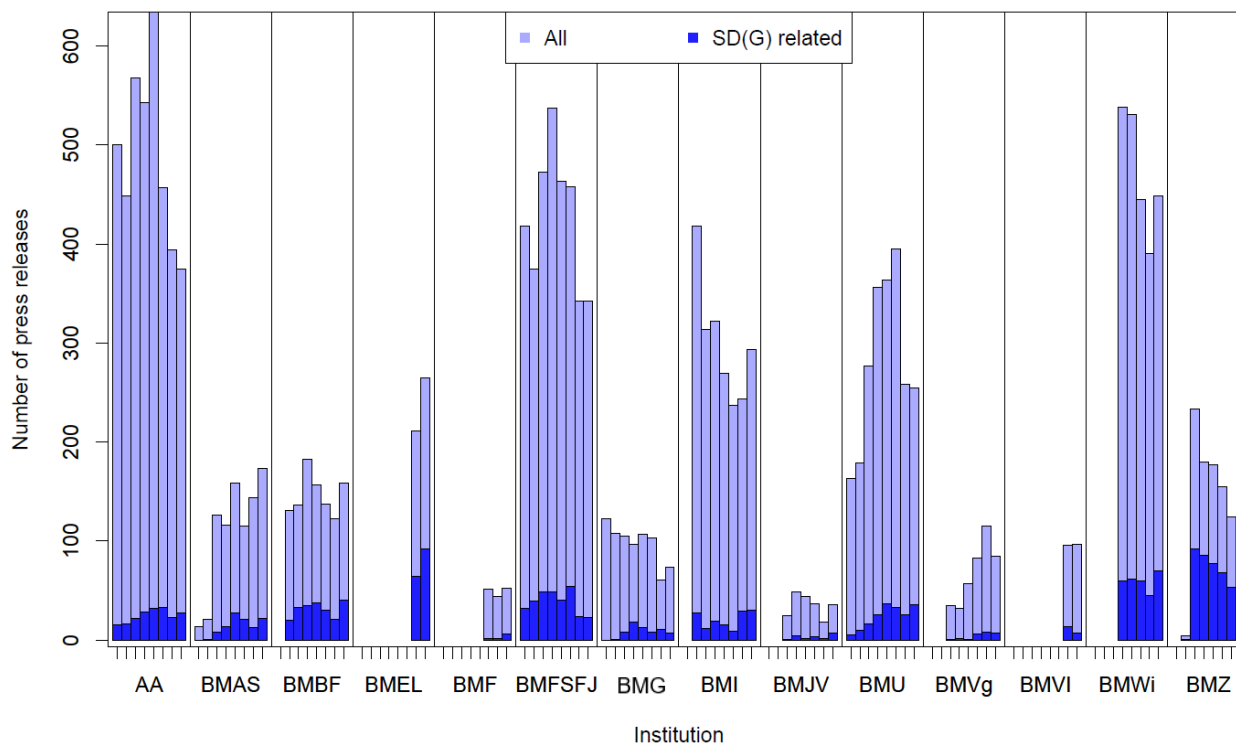
Figure 6: Yearly amount of overall press releases (light blue) and the share of it that deals with sustainability (dark blue). The latter can be press releases with either SD or SDG related content. Each bar represents one year, missing bars are due to a lack of data availability.

Table 10: Relative coverage of press releases related to SD, to SDG or to both combined over the years. Percentages are calculated by dividing the respective amount of press releases dealing with SD or SDG by the overall amount of press statements released by the specific ministry in that year. Empty cells signal a lack of data.

Instituti on	Type	Relative Coverage of press releases per year								
		2012	2013	2014	2015	2016	2017	2018	2019	Total
AA	SD	3.00%	3.12%	3.52%	4.97%	4.42%	5.25%	5.08%	5.33%	4.29%
	SDG	0.00%	0.45%	0.35%	0.18%	0.63%	1.97%	0.76%	1.87%	0.71%
	Both	3.00%	3.56%	3.87%	5.16%	5.05%	7.22%	5.84%	7.20%	5.00%
BMAS	SD	0.00%	4.76%	6.35%	10.34%	16.98%	16.52%	9.03%	10.98%	11.52%
	SDG	0.00%	0.00%	0.00%	1.72%	0.00%	1.74%	0.00%	1.73%	0.69%
	Both	0.00%	4.76%	6.35%	12.07%	16.98%	18.26%	9.03%	12.72%	12.21%
BMBF	SD		15.27%	24.26%	18.58%	22.29%	18.25%	13.82%	22.01%	19.98%
	SDG		0.00%	0.00%	0.55%	1.91%	3.65%	3.25%	3.14%	1.56%
	Both		15.27%	24.26%	19.13%	24.20%	21.90%	17.07%	25.16%	21.54%
BMEL	SD							28.44%	31.70%	30.25%
	SDG							1.90%	3.02%	2.52%
	Both							30.33%	34.72%	32.77%
BMF	SD						3.92%	2.27%	9.62%	5.44%
	SDG						1.96%	0.00%	7.69%	1.36%
	Both						5.88%	2.27%	17.31%	6.80%
BMFSF J	SD	7.66%	10.40%	9.73%	8.38%	8.42%	11.35%	6.73%	6.43%	8.74%
	SDG	0.00%	0.00%	0.63%	0.74%	0.22%	0.44%	0.29%	0.29%	0.35%
	Both	7.66%	10.40%	10.36%	9.12%	8.64%	11.79%	7.02%	6.73%	9.10%
	SD	0.00%	0.93%	7.62%	18.56%	7.48%	6.80%	11.48%	4.05%	6.68%

Institution	Type									
BMG	SDG	0.00%	0.00%	0.00%	0.00%	4.67%	0.97%	6.56%	5.41%	1.80%
	Both	0.00%	0.93%	7.62%	18.56%	12.15%	7.77%	18.03%	9.46%	8.48%
BMI	SD		7.18%	4.46%	7.45%	7.06%	6.75%	14.34%	11.60%	6.71%
	SDG		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Both		7.18%	4.46%	7.45%	7.06%	6.75%	14.34%	11.60%	6.71%
BMJV	SD			4.00%	8.16%	4.55%	5.41%	11.11%	11.11%	7.18%
	SDG			0.00%	0.00%	0.00%	2.70%	0.00%	8.33%	1.91%
	Both			4.00%	8.16%	4.55%	8.11%	11.11%	19.44%	9.09%
BMU	SD	3.07%	5.59%	3.25%	4.49%	7.97%	6.08%	8.91%	8.24%	6.10%
	SDG	0.00%	0.00%	2.53%	2.81%	2.20%	2.28%	1.16%	5.88%	2.31%
	Both	3.07%	5.59%	5.78%	7.30%	10.16%	8.35%	10.08%	14.12%	8.41%
BMVg	SD			2.86%	6.25%	1.75%	7.23%	6.09%	8.24%	5.90%
	SDG			0.00%	0.00%	0.00%	0.00%	0.87%	0.00%	0.25%
	Both			2.86%	6.25%	1.75%	7.23%	6.96%	8.24%	6.14%
BMVI	SD							14.58%	7.22%	10.88%
	SDG							0.00%	0.00%	0.00%
	Both							14.58%	7.22%	10.88%
BMWi	SD				10.97%	11.68%	13.03%	10.77%	15.59%	12.37%
	SDG				0.19%	0.00%	0.45%	0.77%	0.00%	0.25%
	Both				11.15%	11.68%	13.48%	11.54%	15.59%	12.62%
BMZ	SD		0.00%	28.76%	29.44%	24.29%	30.32%	26.61%	30.00%	28.08%
	SDG		25.00%	10.73%	18.33%	19.21%	13.55%	16.13%	14.55%	15.26%
	Both		25.00%	39.48%	47.78%	43.50%	43.87%	42.74%	44.55%	43.34%
TOTAL	SD	4.27%	6.65%	8.94%	9.79%	9.79%	10.33%	11.51%	13.06%	9.80%
	SDG	0.00%	0.18%	1.61%	1.76%	1.86%	1.95%	1.64%	2.24%	1.60%
	Both	4.27%	6.82%	10.56%	11.55%	11.65%	12.27%	13.14%	15.30%	11.40%

Table 11: Core SDGs that match the ministries sectoral responsibilities. The classification is based on self-reported allocation in the German NSDS, the departmental sustainability strategies and interviews.

Institution	Core SDGs	Reference
AA	4,5, 6,7,8,10,12,13,16,17	Federal Government, 2018
BMAS	1, 8, 10	Federal Government, 2018 BMAS, 2019
BMBF	all	BMBF, 2019
BMEL	2, 6, 12, 13, 14, 15	Federal Government, 2018 BMEL, 2019
BMF	8	BMF, 2019
BMFSFJ	1, 4, 5	BMFSFJ, 2019
BMG	3	Federal Government, 2018 BMG, 2019
BMI	11, 12, 16	Federal Government, 2018
BMJV	12, 16	Federal Government, 2018 Interview 13.05.20
BMU	6, 13, 14, 15	Federal Government, 2018 Interview 12.06.20

BMVg	16	Federal Government, 2018
BMVI	3, 11, 13	Federal Government, 2018 Interview 27.05.20
BMWi	7, 8	Federal Government, 2018 Interview 12.06.20
BMZ	1, 2, 4, 8, 10, 12, 16,17	Federal Government, 2018

Table 12: Number of press releases per ministry that either refer (1) to the Agenda 2030 or the SDGs as a whole, or (2) to specific SDGs or their targets.

Institution	All SDGs	Specific SDGs
AA	17	11
BMAS	6	1
BMBF	11	7
BMEL	7	5
BMF	2	0
BMFSFJ	4	8
BMG	8	6
BMI	0	0
BMJV	3	1
BMU	50	2
BMVg	0	1
BMVI	0	0
BMWi	5	1
BMZ	123	27
Total	236	70

10. Appendix B: Network Analysis

A similar colour coding for the nodes is applied in all visualisations of networks. While institutions from the governmental sector on the national level are marked in orange, governmental institutions from other governance levels are illustrated in green and non-governmental organisation are depicted in blue. All ministries are highlighted as a bigger node in red. The thickness of the edges features their weights, and thus the amount of institutional interaction between the two institutions. A list with all abbreviations used in the networks can be found in table 13.
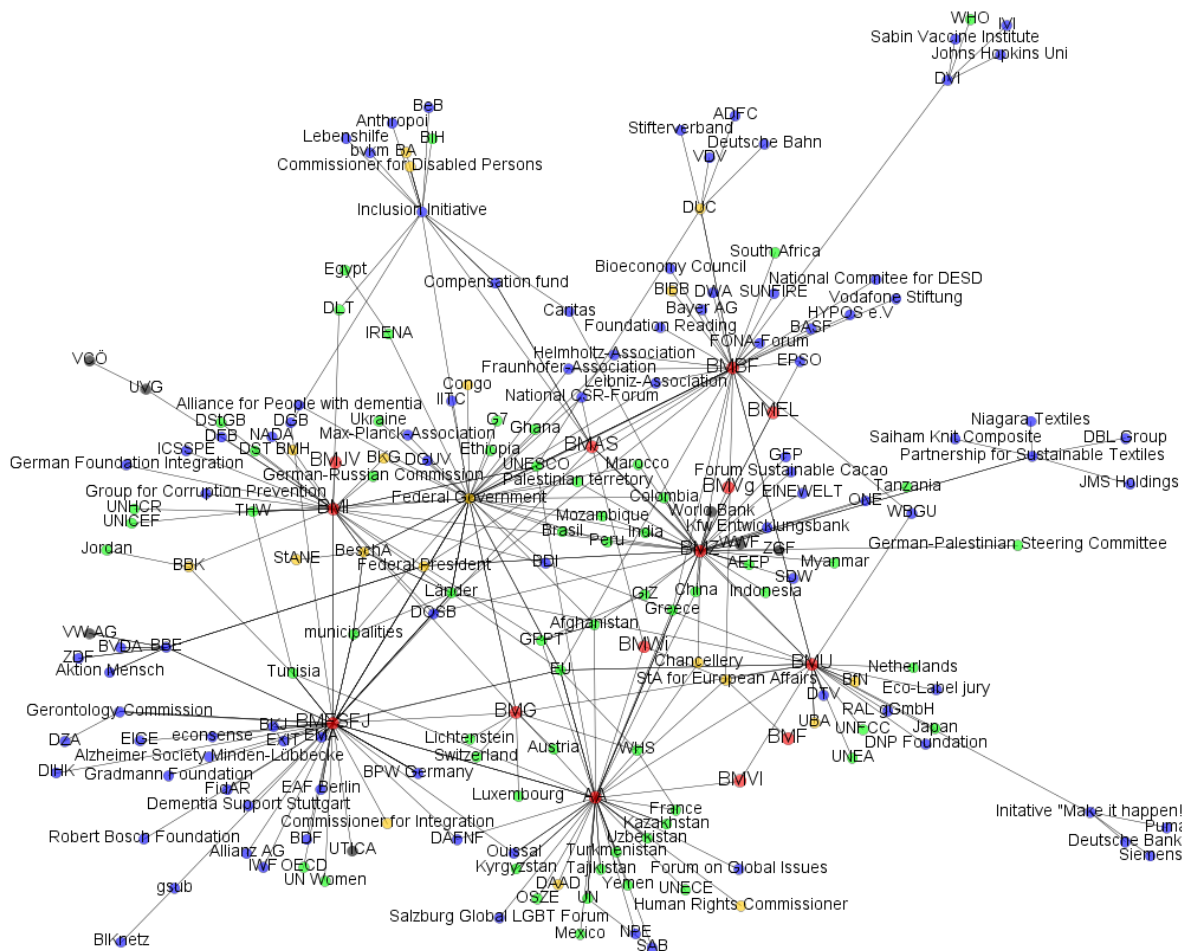
Figure 7: System-level network of institutional collaboration regarding SD before 2015 in Germany. Due to lacking data availability, only ten ministries provided data for this network.

Figure 8: Overall system-level network of institutional collaboration regarding the SD and SDGs starting in 2015 in Germany.

Figure 9: System-level network of institutional collaboration regarding SD between 2015 and 2019 in Germany.

Figure 10: System-level network of institutional collaboration regarding the SDGs in Germany between 2015 and 2019. Press releases handling the negotiations of the Agenda 2030 before 2015 were excluded from this network.

Table 13: List of abbreviations used for the institutions in the networks and their full German and English name.

German full Name	Name in Network	English full Name
Auswärtiges Amt	AA	German Foreign Office
-	AAS	African Academy of Science
Auto Club Europa e.V.	ACE	European Automobile Association
-	ADB	Asian Development Bank
Allgemeine Deutsche Fahrrad-Club	ADFC	German Cyclist's Association
Arbeitsgemeinschaft deutscher Tumorzentren	ADT	Association of German Tumour Centres
Afrika-EU-Energiepartnerschaft	AEEP	African-European Energy Partnership
-	AfDB	African Development Bank
Ausschuss für Finanzstabilität	AFS	Financial Stability Committee
-	AGN	African Group of Negotiators on Climate Change
-	AGRF	Alliance for Green Revolution in Africa
Deutsch-Portugiesischen Industrie- und Handelskammer	AHK Portugal	German-Portuguese Chamber of Industry and Commerce

Netzwerk der Deutsche Außenhandelskammern	AHKs	Network of the German Chambers of Commerce Abroad
Akademische Fliegergruppe	AK Flieg	Academic Fliers Group
Akademische Förderungswerk Bochum	AKAFÖ Bochum	Academic Foundation Bochum
-	AMCEN	Africa Ministerial Conference on Environment
-	AMDC	African Minerals Development Center
-	AMR Hub	Global Collaboration Hub on research and Development on AMR
Bundesverband anthroposophisches Sozialwesen e.V.	Anthropoi	Federal association of anthroposophical Social Services
AOK Bundesverband	AOK-BV	AOK Federal Association
Asien-Pazifik Ausschuss der Deutschen Wirtschaft	APA	Asia-Pacific Committee of German Business
-	AREI	Africa Renewable Energy Initiative
Alice Salomon Hochschule Berlin	ASH Berlin	Alice Salomon university Berlin
Arbeits- und Sozialministerkonferenz	ASMK	Conference of Ministers for Labour and Social Affairs
-	ATI	Addis Tax Initiative
-	AU	African Union
Agentur für Wirtschaft und Entwicklung	AWE	Agency for economy and development
Bundesdeutschen Arbeitskreises für Umweltbewusstes Management e.V.	B.A.U.M.	German Working Group for Environmental Management
Beteiligungsgruppen aus Wirtschaft	B20	Business 20
Bundesagentur für Arbeit	BA	Federal Employment Agency
Bundesamt für Wirtschaft und Ausfuhrkontrolle	BAFA	Federal Office for Economic Affairs and Export Control
Bundesanstalt für Finanzdienstleistungsaufsicht	BaFin	Federal Financial Supervisory Authority
Bundesarbeitsgemeinschaft der Freien Wohlfahrtspflege	BAGFW	National Association for nonstatutory Welfare
Bundesarbeitsgemeinschaft der Seniorenorganisationen	BAGSO	German National Association of Senior Citizens' Organisations
Bundesarchitektenkammer e.V.	BAK	Federal Chamber of German Architects
Bundesamt für Migration und Flüchtlinge	BAMF	Federal Office for Migration and Refugees
Bundesausschuss Politische Bildung e. V.	bap	Federal Committee for Civic Education
Bundesarchiv	BArch	German Federal Archives
Bundesanstalt für Arbeitsschutz und Arbeitsmedizin	BAuA	Federal Institute of Occupational Safety and Health
Bauministerkonferenz der Länder	BauMK	Conference of the Ministers of Building
Bundesnetzwerk Bürgerschaftliches Engagement	BBE	National network for Civil Society
Bundesamt für Bevölkerungsschutz und Katastrophenhilfe	BBK	Federal Office of Civil Protection and Disaster Assistance
Bundesamt für Bauwesen und Raumordnung	BBR	Federal Office for Building and Regional Planning
Bundesinstitut für Bau-, Stadt- und Raumforschung	BBSR	Federal Institute for Research on Building, Urban Affairs and Spatial Development
Bundesvereinigung der Deutschen Arbeitgeberverbände	BDA	Confederation of German Employers' Associations
Bund deutscher Baumschulen	BdB	Federation of German Tree Nurseries
Bundesverband der Deutschen Entsorgungs-, Wasser- und Rohstoffwirtschaft	BDE	Federation of the German Waste, Water and Raw Materials Management Industry
Berliner Demografie-Forum	BDF	Berlin Demography Forum
Bundesverband der Deutschen Industrie e.V.	BDI	Federal Association of German Industries
Bundesverband der Deutschen Luftverkehrswirtschaft	BDL	German Aviation Association
Bundesverband der Deutschen Luft- und Raumfahrtindustrie e.V.	BDLI	German Aerospace Industries Association
Bundesverband der Deutschen Sicherheits-und Verteidigungsindustrie	BDSV	Federal Association of the German Security and Defence Industry
Bundesverband evangelische Behindertenhilfe e.V.	BeB	Federal Evangelical Association for the Disabled
Bundesverband Erneuerbare Energie	BEE	German Renewable Energy Federation
Beschaffungsamt des Bundesministeriums des Innern	BeschA	Procurement Office of the Federal Ministry of the Interior
-	BETD	Berlin Energy Transition Dialogue

Bundesinstitut für Arzneimittel und Medizinprodukte	BfArM	Federal Institute for Drugs and Medical Devices
Beauftragte der Bundesregierung für Informationstechnik	BfiT	Federal Commissioner for Information Technology
Bundesamt für Naturschutz	BfN	Federal Agency for Nature Conservation
Bank für Sozialwirtschaft AG	BFS	Bank for social economy
Berufsgenossenschaft der Bauwirtschaft	BG Bau	Employer's liability insurance association for the construction industry
-	BGMAEA	Bangladesh Garment Manufacturers and Exporters Association
Bundesanstalt für Geowissenschaften und Rohstoffe	BGR	Federal Institute for Geosciences and Natural Resources
-	BHRC	Iranian Building Housing Research Centres
Bundesinstitut für Berufsbildung	BIBB	Federal Institute for Vocational Education and Training
Bundesarbeitsgemeinschaft der Integrationsämter und Hauptfürsorgestellen	BIH	National Association of Integration Offices
bundesweite Informations- und Kompetenznetz	BIKnetz	Nationwide Information and Competence Network
Bundesanstalt für Immobilienaufgaben	BImA	Institute for Federal Real Estate
Bundesingenieurkammer	BIngK	German Engineer Chambers
Bundesamt für Kartographie und Geodäsie	BKG	Federal Agency for Cartography and Geodesy
Bundesvereinigung Kulturelle Kinder- und Jugendbildung	BKJ	German Federation for Cultural Youth Education
Bundesamtes für Bevölkerungsschutz und Katastrophenhilfe	BKK	Federal Office of Civil Protection and Disaster Assistance
Beauftragte der Bundesregierung für Kultur und Medien	BKM	Federal Commissioner for Culture and the Media
Bundesanstalt für Landwirtschaft und Ernährung	BLE	Federal office for Agriculture and Food
Bundesministerium für Arbeit und Soziales	BMAS	Federal Ministry for Employment and Social Affairs
Bundesministerium für Bildung und Forschung	BMBF	Federal Ministry of Education and Research
Bundesministerium für Ernährung und Landwirtschaft	BMEL	Federal Ministry of Food and Agriculture
Bundesministerium der Finanzen	BMF	Federal Ministry of Finance
Bundesministerium für Familie, Senioren, Frauen und Jugend	BMFSFJ	Federal Ministry for Family Affairs, Senior Citizens, Women and Youth
Bundesministerium für Gesundheit	BMG	Federal Ministry for Health
Bundesstiftung Magnus Hirschfeld	BMH	Federal Foundation Markus Hirschfeld
Bundesministerium des Innern	BMI	Federal Ministry of the Interior
Bundesministerium der Justiz und für Verbraucherschutz	BMJV	Federal Ministry of Justice and Consumer Protection
Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit	BMU	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
Bundesministerium der Verteidigung	BMVg	Federal Ministry of Defence
Bundesministerium für Verkehr und digitale Infrastruktur	BMVI	Federal Ministry of Transport and digital Infrastructure
BMW Stiftung Herbert Quandt	BMW Foundation HQ	BMW Foundation Herbert Quandt
Bundesministerium für Wirtschaft und Energie	BMWi	Federal Ministry of Economics and Energy
Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung	BMZ	Federal Ministry for Economic Cooperation and Development
-	BNITM	Bernhard-Nocht-Institute for tropical medicine
Bund Ökologische Lebensmittelwirtschaft	BÖLW	Organic Food Production Alliance
Bundeszentrale für politische Bildung	bpb	Federal Agency for Civic Education
-	BPW Germany	Business and Professional Women Germany
Bergwacht Bayern	BRK	Bavarian Mountain Rescue Service
Bundesamt für Bauwesen und Raumordnung	BRR	Federal Office for Building and Regional Planning
Bundesamt für Seeschifffahrt und Hydrographie	BSH	Federal Maritime and Hydrographic Agency
Bundesamt für Sicherheit in der Informationstechnik	BSI	Federal Office for Information Security
Bundesverband Solarwirtschaft e.V.	BSW-Solar	German Solar Industry Association
BahnTouristikExpress GmbH	BTE	BTE GmbH
Bundesverband der Tourismuswirtschaft	BTW	Federal association of the German tourism industry

Bundestag	Bundestag	German parliament
Bundesverband Deutscher Anzeigenblätter	BVDA	Federal Association of German Advertising Journals
Bundesverband Farbe Gestaltung Bautenschutz	BV Farbe	Federal Association Colour/Design /Building Preservation
Bundesverband Holz und Kunststoff	BVHK	Federal Association for Wood and Plastics
Bundesverband für körper- und mehrfachbehinderte Menschen	bvkm	Federal Association for severely and multiple handicapped people
Bundesvertretung der Medizinstudierenden in Deutschland	bvmd	Federal Representation of Medical Students in Germany
Bundeszentrale für gesundheitliche Aufklärung	BZgA	Federal Centre for Health Education
Beteiligungsgruppe der Zivilgesellschaft	C20	Civil Society 20
-	CAEPI	China Association of Environmental Protect Industry Profile
-	CARE Ger.-Lux.	CARE International Deutschland-Luxemburg
-	CBD	Convention on Biological Diversity
-	CCICED	China Council for International Cooperation on Environment and Development
-	CCSI	Columbia Center on Sustainable Investment
-	CDIA	Cities Development Initiative For Asia
-	CDR	Corporate Digital Responsibility-Initiative
deutsch-marokkanischen Exzellenzzentrums für Landwirtschaft	CECAMA	German-Moroccan Excellence Centre for Agriculture
-	CFC	Common Fund for Commodities
-	CFS	Committee on World Food Security
-	CIB	International Council for Research and Innovation in Building and Construction
CLEANTECH Initiative Ostdeutschland	CIO	CLEANTECH Initiative East Germany
-	CISPA	Center for IT Security, Privacy and Accountability
-	CMP	Committee on Missing Persons in Cyprus
Convention on the Conservation of Migratory Species of Wild Animals	CMS	
Kommission "Wachstum, Strukturwandel und Beschäftigung"	coal commission	Commission on Growth, Structural Change and Employment
Expertenkommission "Nachhaltige Baulandmobilisierung und Bodenpolitik - Baulandkommission"	Commission on building land	Expert commission "Sustainable land mobilization and land policy - Building land commission"
Ausgleichsfonds für überregionale Vorhaben zur Teilhabe schwerbehinderter Menschen am Arbeitsleben	Compensation fund	Compensation fund for trans-regional projects for the occupational inclusion of persons with severe disabilities
Mittelstand 4.0-Kompetenzzentrum eStandards	Competence Centre e-standards	middle class 4.0 competence centre for e-standards
-	CUT	Coalition for Urban Transition
Deutscher Akademischer Austauschdienst	DAAD	German Academic Exchange Service
Deutsche Akademische Flüchtlingsinitiative Albert Einstein	DAFI	Albert Einstein German Academic Refugee Initiative Fund
Deutsch-Arabisches Frauennetzwerkforum	DAFNF	German-Arabic Woman Network-Forum
-	DAFNI	Network of Sustainable Greek Islands
Deutsch-Afrikanische Jugendinitiative	DAJ	African-German Youth Initiative
Deutsche Allianz Meeresforschung	DAM	German Alliance for Marine Research
Deutsche Amphibolin-Werke	DAW SE	DAW GmbH
Deutsches Agrarzentrum in Kasachstan	DAZ	German Agricultural Center Kazakhstan
Deutsches Bergbau-Museum Bochum	DBM	German Mining Museum
Deutsche Bundesstiftung Umwelt	DBU	Federal Foundation for the Environment
-	DCF	Development Cooperation Forum
Deutsche Cyber-Sicherheitsorganisation	DCSO	German Cyber-security Organisation
Das Demographie Netzwerk	ddn	The Demographics Network
Deutsche Investitions- und Entwicklungsgesellschaft	DEG	German Investment Corporation
Deutsche Energie Agentur	dena	German Energy Agency
Deutsche Plattform für Mobilitätsmanagement e.V.	DEPOMM	German Platform for Mobility Management

Deutsche Zentrum für Integrations- und Migrationsforschung	DeZIM	German Centre for Integration and Migration research
Deutscher Fußball-Bund e.V.	DFB	German Football Association
Deutscher Gewerkschaftsbund	DGB	German Trade Union Confederation
Deutsche Gesellschaft für Prävention und Intervention bei Kindesmisshandlung, -vernachlässigung und sexualisierter Gewalt e.V.	DGfPI	German society for prevention and intervention in case of child abuse, child neglect or sexualised violence
Deutsche Gesellschaft für Nachhaltiges Bauen e. V.	DGNB	German Sustainable Building Council
Deutsche Gesellschaft für Public Health	DGPH	German Public Health Association
Deutsche Gesetzliche Unfallversicherung	DGUV	German Statutory accident insurance
Deutscher Industrie- und Handelskammertag	DIHK	German Chambers of Commerce and Industry
DIW Econ GmbH	DIW Econ	-
Deutsche Krebsgesellschaft e.V.	DKG	German Cancer Society
Deutsches Komitee für Nachhaltigkeitsforschung Future Earth	DKN Future Earth	German Committee Future Earth
Deutsche Zentrum für Luft- und Raumfahrttechnik	DLR	German Aerospace Center
Deutscher Landkreistag	DLT	German County Association
Deutsches Nationalkomitee für internationale Jugendarbeit	DNK	German National Committee for International Youth Work
Deutscher Olympischer Sportbund	DOSB	German Olympic Sports Federation
Stiftung Deutscher Nachhaltigkeitspreis e. V.	DNP Foundation	Foundation National German Sustainability Award
Deutscher Präventionstag	DPT	German Congress on Crime Prevention
Deutsches Rotes Kreuz	DRK	German Red Cross
Deutscher Reiseverband	DRV	German Travel Association
Deutsche Stiftung für Engagement und Ehrenamt	DSEE	German Foundation for Engagement and Volunteering
Deutsche Sporthochschule Köln	DSHS Köln	German Sport University Cologne
Deutscher Städtetag	DST	Association of German Cities
Deutscher Städte- und Gemeindebund	DStGB	German Association of Towns and Municipalities
Deutsche Stiftung Weltbevölkerung	DSW	German Foundation for World Population
Deutscher Tourismusverband	DTV	German Tourism Association
Deutsche UNESCO-Kommission	DUC	German UNESCO commission
-	DVI	Dengue Vaccine Initiative
Deutscher Verkehrssicherheitsrat	DVR	German Road Safety Council
Deutsche Welle	DW	Deutsche Welle (German wave)
Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall	DWA	German Association for Water, Wastewater and Waste
Deutsche Wetterdienst	DWD	German Meteorological Service
Deutsches Zentrum für Altersfragen	DZA	German Centre of Gerontology
Deutsches Zentrum für Infektionsforschung e.V.	DZIF	German Centre for Infection Research
Deutsches Zentrum für Schienenverkehrsforschung	DZSF	German Centre for Rail Traffic Research
Europäischen Akademie für Frauen in Politik und Wirtschaft Berlin e. V.	EAF Berlin	European Academy for Woman in Politics and Economics
Europäischen Bewegung Deutschland e.V.	EBD	European Movement Germany
Forum Nachhaltige Entwicklung der Deutschen Wirtschaft e. V.	econsense	Forum for Sustainable Development of German Business
-	ECOSOC	Economic and Social Council
Europäisches Forstinstitut	EFI	European Forest Institute
Europäischer Investitionsfond	EIF	European Investment Fund
-	EIGE	European Institute for Gender Equality
EINEWELT-Zukunftsforum	EINEWELT	ONEWOLRD-Future Forum
-	EITI	Extractive Industries Transparency Initiative
Rates der Evangelischen Kirche in Deutschland	EKD	Council of the Evangelical Church in Germany
-	ELIXIR	European life science infrastructure for biological information
-	EMA	Euro-Mediterranean Association for Cooperation and Development
-	EMFF	European Maritime and Fisheries Fund
Entwicklungspartnerschaft für Fachkräftenetzwerke	EP-Fachkräfte	Development Partnership for Specialist Networks
-	EPSO	European Plant Science Organisation

Europäischer Sozialfond	ESF	European Social Fund
-	EU	European Union
Europäischen Klimaschutzinitiative	EUKI	European climate change initiative
Expertenkommission Forschung und Innovation	ExFI	Expert Commission on Research and Innovation
-	FAO	Food and Agriculture Organization of the United Nations
Friedrich-Ebert-Stiftung	FES	Friedrich-Ebert-Foundation
Frauen in die Aufsichtsräte e.V.	FidAR	Women on Supervisory Boards
-	FIDIC	International Federation of Consulting Engineers
Frauen-Karriere-Index	FKi	Woman-Career-Index
Fachagentur Nachwachsende Rohstoffe e.V.	FNR	Agency for Renewable Resources
Forschung für nachhaltige Entwicklungen - Forum	FONA-Forum	Research for Sustainable Developments - Forum
Forum Nachhaltiges Palmöl	FONAP	Forum on Sustainable Palm Oil
Stiftung Haus der kleinen Forscher	Foundation HdkF	Foundation Little Scientists' House
-	Forum E & D	Forum Environment & Development
-	FPI	Fair Pay Innovation Lab
Fraunhofer-Institut für Umwelt-, Sicherheits- und Energietechnik UMSICHT	Frauenhofer UMSICHT	Frauenhofer Institute for Environmental, Safety, and Energy Technology UMSICHT
Frosch Touristik GmbH	FTI	FTI Touristic GmbH
Forschungsgemeinschaft Urlaub und Reisen	FUR	Research Community for Holiday and Travel
Forschungszentrum Jülich	FZJ	Jülich Research Centre
-	G20	Group of Twenty
-	G7	Group of Seven
-	GAIN	Global Alliance for Improved Nutrition
-	GAVI	Global Alliance for Vaccines and Immunisation
-	GCL	Grameen Creative Lab
-	GCoM	Global Covenant of Mayors
Lenkungsgremium Geodateninfrastruktur Deutschland	GDI-DE	Steering Board for German National Spatial Data Infrastructure
GdW Bundesverband deutscher Wohnungs- und Immobilienunternehmen	GdW	Federal Association of German Housing and Real Estate Enterprise Registered Associations
-	GEM	Global Entrepreneurship Monitor
GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel	GEOMAR	GEOMAR - Helmholtz Centre for Ocean Research Kiel
-	GFATM	Global Funds to fight AIDS, tuberculosis, and malaria
Gesellschaft für Freiheitsrechte	GFF	Society for Civil rights and Liberties
-	GFFA	Global Forum for Food and Agriculture
-	GFMD	Global Forum on Migration and Development
-	GFP	German Food Partnership
-	GFSEC	Global Forums on Steel Excess Capacity
GGFA Berliner Agrarministerkonferenz	GGFA AMK	Global Forum for Food and Agriculture: Conference of Agricultural Ministers
-	GGGI	Global Green Growth Institute
-	GGKP	Green Growth Knowledge Platform
-	GHP	GHP Holding GmbH
Gesellschaft für internationale Zusammenarbeit	GIZ	German Society for International Cooperation
Gesamtverband Kunststoffverarbeitender Industrie	GKV	German Association of the Plastics Converters
-	GLF	Global Landscape Forum
-	GNC	Global Network of the Committed
-	GO for SDGs	Global Opportunities for SDGs
-	GOVET	German Office for International Cooperation in Vocational Education and Training
-	GPEDC	Global Partnership for Effective Development Co-operation
-	GPPT	German Police Project Team
Gesellschaft für soziale Unternehmensberatung	gsub	Society for Social Business Consultancy
Gemischter Wirtschaftsausschuss	GWA	Joint Economic Committee
-	GWP	German Water Partnership
-	HCWH Europe	Health Care Without Harm Europe

Hauptverband der Deutschen Bauindustrie	HDB	Main association of the German construction industry
Haus der Geschichte	HDG	House of the History of the Federal Republic of Germany
-	HLP of Eminent Persons	High Level Panel of Eminent Persons
-	HLPF	High-level Political Forum on Sustainable Development
Hochschule Weihenstephan-Triesdorf	HSWT	Weihenstephan-Triesdorf University of Applied Science
High-Tech Gründerfonds	HTGF	High-Tech Start-up Fund
-	HYPOS	Hydrogen Power Storage & Solutions East Germany
Helmholtz-Zentrum Geesthacht - Zentrum für Material- und Küstenforschung	HZG	Helmholtz-Centrum Geesthacht - Centre for Materials and Coastal Research
Helmholtz-Zentrum für Infektionsforschung	HZI	Helmholtz Centre for Infection Research
Institut für Arbeitsmarkt- und Berufsforschung	IAB	Institute for Employment Research
IASS Potsdam	IASS Potsdam	Institute for Advanced Sustainability Studies Potsdam
Internationale Kakaoorganisation	ICCO	International Cocoa Organization
-	ICES	International Council of the Exploration of the Sea
Internationalen Korallenschutzinitiative	ICRI	International Coral Reef Initiative
-	ICSSPE	International Council of Sport Science and Physical Education
-	IDZ	International Design Centre Berlin
-	IEA	International Energy Agency
-	IFAS	International Fund for saving the Aral Sea
Institut für Zeitgeschichte München	IfZ München	Institute for contemporary history
Industriegewerkschaft Bauen-Agrar-Umwelt	IG BAU	Industrial Union for Construction, Agriculture, and Environment,
Industriegewerkschaft Bergbau, Chemie, Energie	IG BCE	Industrial Union for the Mining, Chemical and Energy industries
Industriegewerkschaft Metall	IG Metall	Industrial Union of Metalworker
-	IGF	Intergovernmental Forum on Mining, Metals and Sustainable Development
Internet Governance Forum Deutschland	IGF-D	German Internet Governance Forum
-	iiSBE	International Initiative for a Sustainable Build Environment
IRENA Innovations- und Technologiezentrum	IITC	IRENA Innovation and Technology Centre
Fachstelle für Internationale Jugendarbeit der Bundesrepublik Deutschland e.V.	IJAB	International Youth Service of the Federal Republic of Germany
Institut für interdisziplinäre Konflikt- und Gewaltforschung	IKG	Institute for Interdisciplinary Research on Conflict and Violence
Internationalen Klimaschutz Initiative	IKI	International climate change initiative
-	ILO	International Labour Organisation
Interministeriellen Arbeitskreis "Nachhaltige Stadtentwicklung in nationaler und internationaler Perspektive"	IMA Stadt	Interdepartmental Working group "Sustainable Urban Development in national and international perspective"
-	IMF	International Monetary Fund
Institut für Migrationsforschung und Interkulturelle Studien	IMIS	Institute for Migration Research and Intercultural Studies
Innovationsbüro Fachkräfte für die Region	Innovation bureau "Specialists"	Innovation bureau "Specialists for the region"
-	INRIA	National Institute for Research in Computer Science and Automation
-	IOM	International Organization for Migration
Leibniz-Institut für Ostseeforschung Warnemünde	IOW	Leibniz Institute for Baltic Sea Research
Institut für ökologische Wirtschaftsforschung	IÖW	Institute for Ecological Economy Research
Innovationsplattform Zukunftsstadt	IPZ	Innovative platform "City of the Future"
-	IRENA	International Renewable Energy Agency
-	IRP	International Resource Panel
-	IRRF	Iraq Reform and Reconstruction Fund

-	ISA	International Seabed Authority
-	ISC3	International Sustainable Chemistry Collaborative Centre
Institut für sozial-ökologische Forschung	ISOE	Institute for Socio-Ecological Research
-	ITUC	International Trade Union Confederation
International Union for Conservation of Nature	IUCN	International Union for Conservation of Nature
-	IVI	International Vaccine Institute
-	IWF	International Women's Forum
Konsortium Deutsche Meeresforschung	KDM	German Marine Research Consortium
Kreditanstalt für Wiederaufbau	Kfw Entwicklungsbank	Credit Institute for Reconstruction
Karlsruher Institut für Technologie	KIT	Karlsruhe Institute for Technology
Kompetenz- und Informationszentrum Wald und Holz	KIWUH	Competence and Informational Centre Forest and Timber
Kultusministerkonferenz	KMK	Standing Conference of Ministers of Education and Cultural Affairs
Kompetenzzentrum nachhaltiger Konsum	KNK	Competence Centre Sustainable Consumption
Länderausschuss für Arbeitsschutz und Sicherheitstechnik	LASI	Federal State Committee for Safety and Health at Work
LfA Förderbank Bayern	LfA	Bavarian public funding bank
Leibniz-Zentrum für Photonik in der Infektionsforschung	LPI	Leibniz Center for Photonics in Infection Research
Lesben- und Schwulenverband in Deutschland	LSVB	Lesbian and Gay Federation in Germany
-	Merian Centres	Maria Sibylla Merian Centre for Advanced Studies
-	Mercosur	Southern Common Market
Müttergenesungswerk	MGW	German Maternal Convalescence Movement
Ministerkonferenz für Raumordnung	MKRO	Conference of ministers for regional planning
-	MSV	Mining Shared Value Initiative
Mannheimer Zentrum für Europäische Sozialforschung	MZES	Mannheim Centre for European Social Research
Naturschutzbund Deutschland	NABU	Nature and Biodiversity Conservation Union
Nationale Anti Doping Agentur Deutschland	NADA	National Anti-Doping Agency of Germany
Think Tank „Nationales Kompetenznetzwerk für nachhaltige urbane Mobilität"	NaKoMo	National Competence Network for Sustainable Urban Mobility
Deutsches Nationalkomitees der UN-Dekade zur "Bildung für nachhaltige Entwicklung"	National Committee for ESD	National Committee for Education for Sustainable Development
Nationale Plattform Bildung für nachhaltige Entwicklung	National Platform BNE	National Platform Education for Sustainable Development
Norddeutsche Energiewende 4.0	NEW 4.0	North German Energy Transition 4.0
Nationale Klimaschutzinitiative	NKI	National climate change initiative
Nationale Plattform für Elektromobilität	NPE	German National Platform for Electric Mobility
Nationalen Plattform „Zukunft der Mobilität"	NPM	National Platform for Future Mobility
Nationale Plattform Zukunftsstadt	NPZ	National Platform for the City of the Future
NRW.BANK	NRW.BANK	Nordrhein-Westfalen Bank
-	NSAC	North Sea Advisory Council
-	NTDC	New Town Development Company
-	OECD	Organisation for Economic Co-operation and Development
-	OIE	World Organisation for Animal Health
-	OSZE	Organisation for Security and Co-operation in Europe
deutsch-arabische Mentoring-Projekt Ouissal	Ouissal	German-Arab Mentoring Program Ouissal
-	PAGE	Partnership for Action on Green Economy
-	PaRD	International Partnership on Religion and Sustainable Development
Paul-Ehrlich Institut	PEI	Paul-Ehrlich Institute
Potenzialanalysesystem -Kommission	PotAS commission	Potential analysis systems commission
Robert-Koch-Institut	RKI	Robert-Koch-Institute
Rationalisierungs- und Innovationszentrum der Deutschen Wirtschaft e. V.	RKW competence centre	German Productivity and Innovation Centre

Rat für Nachhaltige Entwicklung	RNE	German Council for Sustainable Development
-	SAB	Scientific Advisory Board
-	SDSN	Sustainable Development Solutions Network
Stiftung der Deutschen Wirtschaft für internationale Zusammenarbeit	SDW	Germany Economy Foundation
-	SGCSD	Sino-German Center for Sustainable Development
Senckenberg Gesellschaft für Naturforschung	SGN	Senckenberg Nature Research Society
Service- und Kompetenzzentrum: Kommunaler Klimaschutz	SK:KK	Service and Competence Centre: local climate protection
Dialogplattform Smart Cities	Smart Cities	Dialogue platform Smart Cities
Staatssekretärsausschuss	StA	State Secretary Committee
Staatssekretärsausschuss für nachhaltige Entwicklung	StANE	State Secretary Committee for Sustainable Development
Staatssekretärsausschuss	State Secretary Committee	State Secretary Committee
-	STDF	WTO-Initiative Standards and Trade Development Facility
Stifterverband für die Deutsche Wissenschaft	Stifterverband	Donors' association for the promotion of humanities and sciences
-	TFA	Tropical Forest Alliance
-	TFRA	Task Force "Rural Africa"
Technisches Hilfswerk	THW	Federal Agency for Technical Relief
Johann Heinrich von Thünen Institut	TI	Thünen-Institute
-	TUMI	Transformative Urban Mobility Initiative
Umweltbundesamt	UBA	German Environment Agency
Ukrainische kommunaler Abfallwirtschaftsverbände	Ukrainian WMAs	Ukrainian waste management associations
-	UKGC	UK-German-Connection
Umweltministerkonferenz	UMK	Conference of Environmental Ministers
-	UN	United Nations
-	UN Women	United Nations Woman
-	UNA-Germany	United Nations Association Germany
UN-Behindertenrechtskonvention	UN-BRK	United Nations Convention on the Rights of Persons with Disabilities
-	UNCCD	United Nations Convention to Combat Desertification
-	UNCSW	United Nations Commission on the Status of Women
-	UNCTAD	United Nations Conference on Trade and Development
-	UNDP	United Nations Development Programme
-	UNEA	United Nations Environment Assembly
-	UNECE	United Nations Economic Commission for Europe
-	UNEP	United Nations Environment Programme
-	UNESCO	United Nations Educational, Scientific and Cultural Organization
-	UNFCC	United Nations Framework Convention on Climate Change
-	UNFPA	United Nations Population Fund
-	UN-Habitat	United Nations Human Settlements Programme
-	UNHCR	United Nations High Commissioner for Refugees
-	UNICEF	United Nations Children's Fund
-	UNIDO	United Nations Industrial Development Organization
-	UN-IGF	UN-Internet Governance Forum
-	UNITAR	United Nations Institute for Training and Research
-	UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
Unternehmensnetzwerke Partner der Jugend	UPJ	Corporate Networks Associates of the Youth
-	UTICA	Tunisian Union of Industry, Trade and Handicrafts
Vereinigung der Unternehmensverbände in Berlin und Brandenburg e.V.	UVB	Confederation of Employers` and Business Associations of Berlin and Brandenburg
Uckermärkische Verkehrsgesellschaf	UVG	Uckermark transport company

Verkehrsclub Österreich	VCÖ	Austrian Traffic Club
Verein Deutscher Ingenieure e.V.	VDI	Association of German Engineers
VDI Zentrums Ressourceneffizienz	VDI ZRE	VDI Centre for Resource Efficiency
Verband Deutscher Maschinen- und Anlagenbau e.V.	VDMA	Mechanical Engineering Industry Association
Verband für Sicherheit, Gesundheit und Umweltschutz bei der Arbeit e.V.	VDSI	Association for Safety, Health and Environmental protection
Verband Entwicklungspolitik und Humanitäre Hilfe deutscher Nichtregierungsorganisationen e.V.	VENRO	Association of German Development and Humanitarian Aid NGOs
-	VETA	Vocational Education and Training Authority
Praxisforschungsnetzwerk "Gesunde Reben (Vitis vinifera) im Ökoweinbau durch Forschung, Innovation und Transfer"	VitiFIT	Applied Research Project "Healthy Vine Vitis vinifera, in Organic Viticulture through Research, Innovation and Transfer"
Verband kommunaler Unternehmen	VKU	German Association of Local Public Utilities
Verkehrsministerkonferenz	VMK	Conference of Transport Ministers
Volkswagen AG	VW AG	Volkswagen Group
-	VZF	Vision Zero Funds
-	W20	Woman 20
-	WASCAL	West African Science Service Centre on Climate Change and Adapted Land Use
Wissenschaftlichen Beirats des Nationalen Aktionsplans zur nachhaltigen Anwendung von Pflanzenschutz	WB NAP	Scientific Advisory Board of the National Action Plan on Sustainable Use of Plant Protection Products
Wissenschaftlicher Beirat für Globale Umweltveränderungen	WBGU	German Advisory Council on Global Change
-	WEF	World Economic Forum
-	We-Fi	Woman Entrepreneurs Financing Initiative
-	WFP	United Nations World Food Programme
-	WHO	World Health Organisation
-	WHS	World Health Summit
Weizenbaum-Institut für die vernetzte Gesellschaft	WI	Weizenbaum Institute for the Networked Society
Wissenschaft im Dialog	WiD	Science in Dialogue
-	WIR	World Resources Institute
Wirtschaftsjunioren Deutschland	WJD	The Young Economy
Waldklimafond	WKF	Forest Climate Funds
Wirtschaftsministerkonferenz	WMK	Conference of Economics Ministers
Wissenschaftsplattform Nachhaltigkeit 2030	WPN2030	Science Platform Sustainability 2030
-	WWF	World Wide Fund For Nature
Wissenschaftszentrum Berlin für Sozialforschung	WZB	Berlin Social Science Center
-	Y20	Youth 20
Zentralverband Deutsches Baugewerbe	ZDB	Federal Association of German Construction
Zweites Deutsches Fernsehen	ZDF	Second German Television
Zentralverband des Deutschen Handwerks	ZDH	German Confederation of Skilled Crafts
-	ZDHC	ZDHC Foundation
Leibniz-Zentrum für Europäische Wirtschaftsforschung in Mannheim	ZEW Mannheim	Leibniz Centre for European Economic Research
Zoologischen Gesellschaft Frankfurt	ZGF	Frankfurt Zoological Society
Leibniz-Zentrum für Marine Tropenforschung	ZMT	Leibniz Centre for Tropical Marine Research
Zentralverband des Deutschen Dachdeckerhandwerks	ZVDH	Federal Association of Roofers

11. Appendix C: Interview Introduction and Questions

Interview Einführung (Introduction)

Meine Forschung zielt darauf ab, Veränderungsprozesse in der institutionellen Zusammenarbeit zum Thema Nachhaltigkeit in Deutschland seit 2013 zu dokumentieren. Ich würde Ihnen gerne einige Fragen zur Rolle des Ministeriums in diesem Prozess stellen und über Kooperationen mit anderen Institutionen in der Umsetzung der Nachhaltigkeitsziele sprechen.

Bevor wir beginnen, muss ich Sie über einige Verfahrens- und Datenschutzaspekte informieren. Das Interview dauert voraussichtlich 45 Minuten und kann je nach Wunsch verkürzt oder verlängert werden. Ihre Teilnahme ist freiwillig und Sie können jederzeit dieses Interview und die Teilnahme an meiner Forschungsarbeit widerrufen ohne dass Ihnen dadurch Nachteile entstehen. Ihr Interview wird anonymisiert verarbeitet und Ihr Name wird nicht mit den erhobenen Daten verknüpft. Die Daten werden ausschließlich zum Erkenntnisgewinn für die aktuelle Forschung und nicht für andere Zwecke verwendet. Wenn Sie damit einverstanden sind, würde ich unser Interview gerne aufzeichnen.

Da ich eine schriftliche Einverständniserklärung benötige, würde ich Ihnen gerne im Anschluss ein kurzes Formular zusenden. Im Wesentlichen fasst dieses noch einmal zusammen, was ich Ihnen gerade erklärt habe. Eine elektronische Unterschrift darauf genügt.

Interview Fragen (Questions)

1. Bitte stellen Sie kurz Ihre Position innerhalb des Ministeriums und ihre Rolle im Gebiet von Nachhaltigkeitspolitik vorstellen?
    a) Haben Sie bestimmte Schwerpunktthemen in Ihrer Arbeit?

2. Wie würden Sie Nachhaltigkeit definieren?
    a) Gibt es eine einheitliche Vision/Leitbild zum Thema Nachhaltigkeit für das gesamte Ministerium?
    b) *Falls diese nicht genannt werden: Arbeiten Sie mit den 17 Nachhaltigkeitsziele (Sustainable Development Goals, SDGs) der UN?*
    c) *Wenn nicht genannt: Spielen einzelne SDGs für Ihre Arbeit eine besondere Rolle?*
    d) Wo sehen Sie das Neue der SDGs? (bzw. ggf. Haben die SDGs ihr Verständnis von Nachhaltigkeit verändert?)

3. Welche Bedeutung hat Nachhaltigkeit in Ihrem Ministerium?
    a) Ist ihr Ministerium ein Antreiber in der deutschen Nachhaltigkeitspolitik?

4. Mit welchen Ministerien oder anderen Akteuren arbeiten Sie zusammen um die Umsetzung von Nachhaltigkeit zu fördern?
    a) Welcher Bedeutung messen sie dieser Zusammenarbeit bei?
    b) Was erschwert oder fördert den Aufbau von Zusammenarbeit?
    c) Es gibt die Nachhaltigkeitspolitik ja selbstverständlich schon länger. Was hat sich mit der Einführung der SDGs / Agenda 2030 verändert? Haben Sie seither mit anderen Akteuren zu tun?

Ich interessiere mich auch ganz besonders für die Zusammenarbeit mit nichtstaatlichen Akteuren (NGOs, Wirtschaftsakteure etc.).

5. Welche Rolle spielen nichtstaatlichen Akteuren für Ihre Arbeit? (Wann und wo sind sie für die Nachhaltigkeitspolitik wichtig?)
   a) Ist ein gemeinsames Verständnis von Nachhaltigkeit hier wichtig?
   b) Gibt es einen bestimmten nichtstaatlichen Akteur den Sie als besonders wichtig einschätzen?
   c) Haben die SDGs für diese Zusammenarbeit etwas verändert?

Außerdem auch für Akteuren die auf anderen Regierungsebenen (Städte, Kommunen, Länder oder internationale Organisationen) tätig sind.

6. Welche Rolle spielen Akteuren auf anderen Regierungsebenen für Ihre Arbeit? (Wann und wo sind sie für die Nachhaltigkeitspolitik wichtig?)
   a) Ist ein gemeinsames Verständnis von Nachhaltigkeit hier wichtig?
   b) Gibt es hier einen bestimmten Akteur den Sie als besonders wichtig einschätzen?
   c) Haben die SDGs für diese Zusammenarbeit etwas verändert?

Meiner bisherigen Forschung beruht auf Pressemitteilungen der deutschen Ministerien. Ich habe Pressemitteilungen herausgefiltert die sich mit dem Thema Nachhaltigkeit auseinandersetzen und auf Anzeichen von institutionellen Partnerschaften untersucht. Ich würde gerne ihre Meinung zu meinen bisherigen Ergebnissen hören.

7. In meiner bisherigen Arbeit habe ich gefunden, dass sich ihr Ministerium vergleichsweise *mehr/weniger* mit Nachhaltigkeit auseinandersetzt und *mehr/weniger* Partnerschaften zum Thema Nachhaltigkeit führt.
   a) Überrascht Sie das oder haben Sie das erwartet?

8. Außerdem habe ich gefunden, *dass sie sich nicht nur mit Nachhaltigkeit generell, sondern auch im Vergleich zu anderen Ministerien verstärkt mit den SDGs auseinandersetzen. / dass in ihren Pressemittelungen wenig Bezug genommen wird zu den SDGs, sondern eher generell über Nachhaltigkeit gesprochen wird.* Ich schließe daraus, dass die SDGs für ihre tägliche Arbeit *eine große/eine geringere* Rolle spielen.
   a) Würden Sie dem zustimmen?

 9. Generell sehe ich in meinen Daten, dass der Umgang mit den SDGs und mit Nachhaltigkeit zwischen den Ministerien sehr unterschiedlich ist.
   a) Wie erklären Sie sich das?

Damit kommen wir auch schon fast zum Ende des Interviews.

10. Möchten Sie etwas ergänzen, das Sie für meine Forschung für wichtig halten? Haben Sie Vorschläge zu Personen in den anderen Bundesministerien, an die ich mich wenden sollte?